234078

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April 15, 2013

Via Hand Delivery

Cynthia Brown
Chief, Section of Administration
Office of Proceedings
Surface Transportation Board
395 E Street, SW
Washington, D.C. 204231

ENTERED
Office of Proceedings
APR 15 2013
Part of
Public Record

RE: STB Docket No. NOR 42125: *E.I. du Pont de Nemours & Co. v. Norfolk Southern Railway Co.*

Dear Ms. Brown

Please accept the enclosed Rebuttal Evidence of E.I. du Pont de Nemours and Company ("DuPont") for filing in the above-captioned proceeding. The following items are enclosed:

- The original and 10 copies of the Highly Confidential version of the Rebuttal Evidence
- The original and 10 copies of the Public version of the Rebuttal Evidence
- Three duplicate disks containing an electronic copy of the Highly Confidential version of the Rebuttal Evidence.
- Three duplicate disks containing an electronic copy of the Public version of the Rebuttal Evidence
- Three duplicate disks containing the Highly Confidential electronic workpapers concerning Parts I and II B of DuPont's Rebuttal Evidence.
- A hard drive containing the Highly Confidential electronic workpapers concerning Parts II A and III of DuPont's Rebuttal Evidence. The password for this drive is the same as the password for the hard drive that DuPont provided with its Opening Evidence

Also included are additional copies of the pleadings for stamp and return. Please date-stamp these additional copies and return them to the delivering messenger for delivery to our office.

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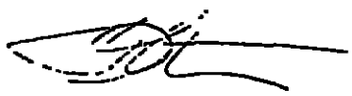
If you have any questions, please do not hesitate to contact the undersigned.

Sincerely,



Jason D. Tutrone

Enclosures

PUBLIC VERSION

234078

BEFORE THE
SURFACE TRANSPORTATION BOARD

E.I. DUPONT DE NEMOURS & COMPANY Complainant v. NORFOLK SOUTHERN RAILWAY COMPANY Defendant	)	Docket No. NOR 42125

REBUTTAL EVIDENCE AND ARGUMENT OF E.I. DU PONT DE NEMOURS AND COMPANY

Volume I:
Counsel's Argument and Summary of Evidence

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CASE GLOSSARY

AEP Texas 2006	*AEP Texas Northern Company v BNSF Railway*, STB Docket No. 41191 (Sub-No. 1) (STB served November 8, 2006)
AEP Texas	*AEP Texas Northern Company v BNSF Railway*, STB Docket No 41191 (Sub-No. 1) (STB served September 10, 2007)
AEPCO	*Arizona Electric Power Cooperative, Inc. v. BNSF Railway Company and Union Pacific Railroad Company*, STB Docket No. 42113 (STB served November 22, 2011)
Aluminum	*Aluminum Association v Akron, Canton & Youngstown Railroad*, 367 I.C C. 475 (1983)
APS	*Arizona Public Service Company and Pacificorp V The Atchison, Topeka and Santa Fe Ry*., 2 STB 367 (1997)
Arizona	*Arizona Public Service Co v United States*, 742 F.2d 644 (D.C. Cir. 1984)
Bottleneck I	*Central Power & Light Co. v. Southern Pacific Transportation Co.*, 1 S.T.B. 1059 (1996)
Bottleneck II	*Central Power & Light Co v Southern Pacific Transportation Co*, 2 S.T.B. 235 (1997)
Coal Rate Guidelines or Guidelines	*Coal Rate Guidelines, Nationwide*, 1 I.C.C.2d 520 (1985), aff'd sub nom. *Consolidated Rail Corp v United States*, 812 F 2d 1444 (3rd Cir. 1987)
Coal Trading Corp.	*Coal Trading Corp. v. The Baltimore & Ohio R.R., et al.*, 6 I C C.2d 361 (1990)
CP&L	*Carolina Power & Light Co. v Norfolk Southern Railway*, 7 S.T.B. 235 (2003)
Dayton P&L	*Dayton Power & Light Co. v. Louisville & Nash R R*, 1 I.C.C.2d 375, 382 (1985)
DMIR I	*Minn. Power, Inc. v Duluth, Missabe & Iron Range Ry*, 4 S.T.B. 64 (1999)

DMIR II	*Minn. Power, Inc v. Duluth, Missabe & Iron Range Ry.*, 4 S.T.B. 288 (1999)
Duke/CSXT	*Duke Energy Corp. v CSX Transportation Inc*, 7 S T B 402 (2004)
Duke/NS	*Duke Energy Corp. v Norfolk Southern Railway*, 7 S.T B. 89 (2003)
FMC	*FMC Wyo. Corp. v. Union Pacific Railroad Company*, 4 STB 699 (2000)
General Procedures	*General Procedures for Presenting Evidence in Stand-Alone Cost Rate Cases*, STB Ex Parte No. 347 (Sub-No 3) (STB served March 12, 2001
IPA	*Intermountain Power Agency v Union Pacific Railroad Company*, STB Docket No. 42127, UP Reply Evidence (Public), filed November 10. 2011
Major Issues	*Major Issues in Rail Rate Cases*, STB Ex Parte No. 657 (Sub-No. 1) (STB served October 30, 2006)
M&G	*M&G Polymers USA, LLC v CSX Transportation, Inc.*, STB Docket No. 42123 (Filed November 13, 2012)
M&G Decision	*M&G Polymers USA, LLC v CSX Transportation, Inc.*, STB Docket No. 42123 (served Sept. 27. 2012)
Market Dominance Determinations	*Mkt. Dominance Determinations & Consideration of Prod Competition*, 365 I.C.C. 118 (1981)
McCarty Farms	*McCarty Farms v. Burlington N, Inc.*, 3 I C.C.2d 822 (1987)
Nevada Power	*Bituminous Coal – Hiawatha, Utah to Moapa, Nevada*, 6 I.C.C 2d 1 (1989)
Nevada Power II	*Bituminous Coal – Hiawatha, Utah to Moapa, Nevada*, 10 I.C.C.2d 259 (1994)
OG&E	*Oklahoma Gas & Electric Co.. v Union Pacific Railroad Company*, STB Docket No. 42111 (STB served July 24, 2009)

Otter Tail	*Otter Tail Power Co., v BNSF Ry.*, STB Docket No. 42071 (STB served January 27, 2006)
PSCo/Xcel	*Public Service Co. of Colorado d/b/a Xcel Energy v. Burlington Northern and Santa Fe Railway*, 7 S.T.B. 589 (2004)
PSCo/Xcel II	*Public Service Co. of Colorado d/b/a Xcel Energy v. Burlington Northern and Santa Fe Railway*, STB Docket No. 42057 (STB served Jan. 19, 2005)
Rate Regulation Reforms or Ex Parte 715	*Rate Regulation Reforms*, STB Ex Parte No. 715 (STB served July 25, 2012)
Seminole	*Seminole Electric Cooperative, Inc. v. CSX Transportation, Inc.*, STB Docket No. 42110 (Rebuttal Evidence Filed April 15, 2010)
TMPA	*Texas Municipal Power Agency v Burlington Northern and Santa Fe Railway*, 6 STB 573 (2003)
WFA/Basin	*Western Fuels Ass'n, Inc and Basin Electric Power Coop v BNSF Railway*, STB Docket No 42088 (STB served September 10, 2007)
WFA/Basin II	*Western Fuels Ass'n, Inc and Basin Electric Power Coop. v BNSF Railway*, STB Docket No 42088 (STB served February 18, 2009)
Wisconsin P&L	*Wisconsin Power and Light Co , v. Union Pacific Railroad*, 5 STB 955 (2001)
West Texas 638 Utilities	*West Texas Utilities Co v. Burlington Northern Railroad*, 1 STB (1996), *aff'd sub nom Burlington Northern Railroad v STB*, 114 F.3d 206 (D.C. Cir 1997)

ACRONYMS

The following acronyms are used:

AAR	Association of American Railroads
AASHTO	American Association of State Highway Officials
ACSES	Advanced Civil Speed Enforcement System
AEI	Automatic Equipment Identification
AEO	EIA's Annual Energy Outlook Forecast
AGR	Alabama and Gulf Coast Railway
All-LF	All-Inclusive Less Fuel Index, published by AAR
AREMA	American Railway Engineering and Maintenance-of-Way Association
ARRA	American Reinvestment and Recovery Act of 2009
ATC	Average Total Cost
ATF	Across-the-Fence
ATP	Automatic Train Protection
ATV	All-Terrain Vehicle
B&B	Bridge and Building
BCFD	Billion Cubic Feet per Day
BNSF	Burlington Northern Santa Fe Railway Company
BRC	Belt Railway Company of Chicago
C&S	Communications and Signals
CAGR	Compound Annual Growth Rate
CFS	2007 Commodity Flow Survey
CCRSI	CoStar Repeat Sales Indices
CERA	Central Railroad of Illinois
CMP	Constrained Market Pricing
cmp	Corrugated Aluminized Metal Pipe
CN	Canadian National Railway
CNW	Chicago & NorthWestern
COBRA	Consolidated Omnibus Budget Reconciliation Act
Conrail	Conrail Shared Asset Area
CP	Canadian Pacific Railway
CPI	Consumer Price Index
CSXT	CSX Transportation, Inc.
CTC	Centralized Traffic Control
CWR	Continuous Welded Rail
CY	Cubic Yards
DCF	Discounted Cash Flow
DFE	Difluoroethane
DMA	Dimethylamine Anhydrous
DME	Dimethyl Ether
DMF	Dimethyl Formamide
DMS	Dimethyl Sulfate
DOT	Department of Transportation
DP	Distributed Power

DRR	DuPont Stand-Alone Railroad
DTL	Direct to Locomotive Fueling
EDI	Electronic Data Interchange
EEO	Equal Employment Opportunity
EIA	Energy Information Administration
EOTD	End of Train Device
ERTMS	European Rail Traffic Management System
FED	Failed-Equipment Detector
FHWA	Federal Highway Administration
FRA	Federal Railroad Administration
FSC	Fuel Surcharges
G&A	General and Administrative
GDLK	Grand Elk Railroad
GDP-IPD	Gross Domestic Product – Implicit Price Deflator
GWR	Gross Weight on Rail
HCl	Hydrochloric Acid (a/k/a Muriatic Acid)
HDF	On-Highway Diesel Fuel Index
HR	Human Resources
HTF	Highway Trust Fund
I&I	Inter and Intra-Train Switching
ICC	Interstate Commerce Commission
IDC	Interest During Construction
IDS/IPS	Intrusion Detection System/Intrusion Prevention System
IHB	Indiana Harbor Belt Railroad Company
ISS	Interline Settlement System
IT	Information Technology
KCS	Kansas City Southern Lines
LAN	Local Area Network
LPM	Limit Price Methodology
MACRS	Modified Accelerated Cost Recovery System
MCPPI	Moody's Commercial Property Price Index
MGT	Million Gross Tons
MIT	Massachusetts Institute of Technology
MGT	Million Gross Tons
MLO	Manager of Locomotive Operations
MMF	Monomethyl Formamide
MMA	Monomethylamine Anhydrous
MMM	Maximum Markup Methodology
MOW	Maintenance of Way
MTO	Manager of Train Operations
NBER	Nittany & Bald Eagle Railroad
NCREIF	National Council of Real Estate Investment Fiduciaries
NDGPS	Nationwide Differential GPS
NEC	Amtrak's Northeast Corridor
NPI	NCREIF Property Index
NS	Norfolk Southern Railway Company

NT/PC	Network Personal Computer
O/D	Origin/Destination
OATC	Original ATC
OS	Operating Station
OSHA	Occupational Safety and Health Administration
PDO	Bio-Propanediol
Pet Coke	Calcined Petroleum Coke
PPI	Producer Price Index
PRB	Powder River Basin, Wyoming
PTC	Positive Train Control
R/VC	Revenue to Variable Cost
RCAF-A	Rail Cost Adjustment Factor, adjusted for productivity
RCAF-U	Rail Cost Adjustment Factor, unadjusted for productivity
RMI	A GE Transportation Company
RMS	RMI's Revenue Management Services System
ROW	Right of Way
RSIA	Rail Safety Improvement Act of 2010
RTC	Rail Traffic Controller Model
SAC	Stand-Alone Cost
SARR	Stand-Alone Railroad
SEC	Securities Exchange Commission
SO3	Sulfur Trioxide
SPLC	Standard Point Location Code
STB	Surface Transportation Board
STCC	Standard Transportation Commodity Code
STEO	Short-Term Energy Outlook
T&E	Train and Engine
TCS	Triple Crown Services
TDIS	Thoroughbred Direct Intermodal Services
TiCl4	Titanium Tetrachloride
TiO2	Titanium Dioxide
TMA	Trimethylamine Anhydrous
TMS	RMI's Transportation Management Services System
TRN	NS Train Event Train Symbol
TRRA	Terminal Railroad Association of St. Louis
UP	Union Pacific Railroad
UPS	Uninterruptible Power Supply
URCS	Uniform Railroad Costing System
USDA	United States Department of Agriculture
WABTEC	Westinghouse Air Brake Technologies
WAN	Wide Area Network
WFL	Waste, Flammable Liquid
WNYP	Western New York & Pennsylvania Railroad
WTI	West Texas Intermediate

MASTER TABLE OF CONTENTS

I. COUNSEL'S ARGUMENT AND SUMMARY OF EVIDENCE I-1

A. OVERVIEW AND SUMMARY I-1

B. THE EVIDENCE SHOWS THAT NS POSSESSES MARKET DOMINANCE OVER EACH OF THE ISSUE MOVEMENTS I-7

1. Quantitative Market Dominance I-7

2. Qualitative Market Dominance I-8

a. NS has proposed an over-simplistic two-part test of market dominance that would produce absurd results I-13

1) The NS standard ignores three of the five specifically-enumerated market dominance factors I-14

2) The NS market dominance standard would produce absurd results I-15

b. NS fundamentally misrepresents and misinterprets both DuPont's Opening Evidence and the Board's market dominance precedent I-17

1) DuPont has taken a far more holistic approach in its market dominance evidence than NS I-18

2) DuPont has properly defined "effective competition" I-24

3) NS has misapplied the principle that a competing mode need not be capable of handling all of the issue traffic I-27

c Trucks compete for short distance hauls, low volumes, expedited shipments, and when there is no rail service I-31

1) NS emphasizes DuPont's truck shipment history without considering whether the circumstances of those shipments are comparable to the issue movements I-32

2) NS incorrectly asserts that DuPont's leverage over motor carriers is evidence of effective competition I-35

d. NS's own evidence confirms the limits of truck transportation I-38

e. The magnitude of NS rate increases over just two years, from 2009 to 2011, exemplifies its market dominance I-42

f. Customer and supplier requirements for rail service preclude the use of alternatives to rail transportation I-45

g. The Board must apply its DMIR holding to this case I-48

1) The statute requires the Board to consider whether effective competition exists for the transportation to which the challenged rate applies I-48

a) NS selectively quotes from the statute and legislative history I-49

b) The Board must enforce the plain meaning of the statute I-52

c) Segregation of market dominance and rate reasonableness is not supported by the statute I-56

d) The Board cannot consider the contract service and rate because they are outside its jurisdiction. I-58

2) NS's claims about the "real-world" impact of competition are based on hyperbole and ignore "real-world" implementation problems. I-59

a) The NS position is contrary to precedent. I-59

b) NS's proposal would be impractical and cause confusion. I-63

3) Precedent supports DuPont's position. I-66

a) The precedent cited by NS does not support its position. I-66

b) The attempt to distinguish DMIR is unpersuasive. I-69

h. The Limit Price Methodology confirms the extent of NS's market dominance I-71

1) The Board's adoption of the LPM is procedurally sound I-73

2) The LPM supplements, but does not replace, a traditional market dominance analysis I-76

C THE EVIDENCE SHOWS THAT THE CHALLENGED RATES ARE UNREASONABLY HIGH I-79

1. The Proper Scope of Rebuttal Evidence I-80

2. Traffic and Revenues (Part III.A) I-82

a The DRR traffic group I-83

b. Forecasted traffic volumes I-89

c Stand-alone revenue I-89

1) Modified-ATC I-89

a) NS is incorrect as a matter of law that the Board must apply Original ATC to this case I-90

b) Modified ATC is superior to both Original and Alternate ATC. I-94

2) Forecasted Revenues I-95

3. SAC Railroad System (Part III B) I-96

4 Operating Plan (Part III.C) I-97

a DuPont has submitted a feasible operating plan I-99

1) DuPont's Operating Plan and Real-World Operations I-100

2) Alleged "Missing Trains" and Local Service I-102

3) Rerouted Traffic I-103

4) Yard Service I-104

5) Reciprocal Obligations With Other Carriers I-105

6) TIH shipments I-106

7) DuPont's RTC simulation I-106

8) Other operating matters I-106

b. NS use of Multirail is unsupported, and is otherwise infeasible and unrealistic, and therefore the Board should not accept NS's operating plan. I-107

1) The Board should reject NS's operating plan evidence, because NS has presented it without the MultiRail program I-107

2) Because NS has failed to support its operating plan, the Board should accept DuPont's operating plan, with the corrections DuPont has made on Rebuttal I-108

3) NS presentation of its operating plan evidence without MultiRail prevents the Board from restating it. I-113

4) Any attempt to evaluate NS's MultiRail evidence without the MultiRail program will unnecessarily delay this proceeding and be prejudicial to DuPont. I-114

c. The NS RTC simulation is filled with errors I-117

5. Operating Expenses (Part III D) I-118

a. Locomotive lease costs I-119

b Locomotive maintenance expense I-120

c. Fuel consumption I-121

d. Operating personnel I-121

e. General and administrative I-122

f Maintenance of way I-126

g. Insurance I-127

h. Ad valorem tax I-127

6 Non-Road Property Investment (Part III.E) I-128

7. Road Property Investment (Part III.F) I-128

a Land I-129

b Roadbed Preparation I-131

c. PTC Installation I-132

d. Partially-Owned Lines I-133

8. *DCF Analysis (Part III.G).* I-134

a Cost of capital I-134

b Inflation indices for land I-137

9. Results of SAC Analysis (Part III.H) I-138

a. Interest schedule on debt I-138

b. Bonus depreciation I-139

c DRR capital structure I-140

d. Index of operating expenses I-142

e. MMM calculations. I-143

D. CONCLUSION I-146

II. MARKET DOMINANCE II-A-1

A. QUANTITATIVE MARKET DOMINANCE II-A-1

1. Traffic and Operating Characteristics II-A-1

a. Loaded Miles II-A-1

b. Tons per Car. II-A-4

2. Variable Cost Calculations II-A-5

3. R/VC Ratios II-A-6

B. QUALITATIVE MARKET DOMINANCE II-B-1

1. Intramodal Competition II-B-3

2. Intermodal Competition II-B-6

a Acid, Sulfuric II-B-7

1) Red Lion (Reybold) Origin Shipments. II-B-13

2) Bellwood Origin Shipments. II-B-27

3) Bayway (Morses Mill) Origin Shipments. II-B-31

4) Miami Fort Origin Shipments. II-B-32

b. Acid, Spent Sulfuric II-B-34

c. Acid, Fuming Sulfuric (Oleum) II-B-37

d Acid, Muriatic II-B-42

e Aniline Oil II-B-46

f Caustic, Potassium (Caustic Potash) II-B-54

g Caustic, Sodium (Caustic Soda) II-B-57

h Dimethyl Ether II-B-72

i. Dimethyl Formamide II-B-84

j. Dimethyl Sulfate II-B-87

k. Lime II-B-90

l. Methylamines, Anhydrous II-B-94

m. Methylamines, Aqueous II-B-123

n. Petroleum Coke II-B-132

o. Polyethylene II-B-141

p. Sodium Methylate II-B-149

q. Sulfur Trioxide (SO3) II-B-153

r. Titanium Dioxide II-B-156

s Waste Flammable Liquid II-B-200
t. Zircon Sand. II-B-202
3. The Limit Price Methodology is lawful and economically sound II-B-206
a. Overview of the LPM. II-B-207
b. The LPM should only be used to presume the absence of effective competition..... II-B-209
c. The Board should substitute R/VC>180 for RSAM. II-B-215
d. The LPM establishes a presumption of market dominance for 77 of the 99 contested movements. II-B-216

III. STAND-ALONE COST III-A-1
A. STAND-ALONE TRAFFIC AND REVENUES III-A-1
1. Stand-Alone Traffic Group III-A-2
a Non-NS TCS Traffic Segments III-A-2
b. Leapfrog Traffic III-A-3
i. Leapfrog Traffic Moves In The Real World, Including On NS III-A-5
ii. The DRR Network Is Based On Real-World Operations And Traffic Flows III-A-22
2 Forecasted Traffic Volumes III-A-27
a. Weighting Factors III-A-29
b. Coal Forecast III-A-30
i. NS's Internal Forecast For Coal III-A-30
ii. Single Rate of Change For All Coal III-A-32
iii Shifting Tonnage From Capped Plants III-A-33
iv Treatment of Coke, Pet Coke and Iron Ore III-A-34
b Other (Non-Coal) Commodity Forecasts III-A-34
c Compound Annual Growth Rate III-A-34
d. Rebuttal Traffic III-A-35
3 Stand-Alone Revenues III-A-36
a. ATC SQL Coding III-A-37
i NS's Technical Correction Is Inadequate III-A-39
ii DuPont's Technical Correction Is Consistent and Fully Supported III-A-43
b. Modified ATC vs. Original ATC III-A-43
i. NS Has Not Justified The Application Of Original ATC To This Case III-A-44

ii. It Would Be Arbitrary And Capricious For The Board To Apply The Discredited Original ATC Methodology III-A-44
iii. Modified ATC Is Superior To Both Original And Alternate ATC III-A-44
(1) Modified ATC is Still Superior to Original ATC for the Reasons Articulated By The Board in WFA/Basin III-A-45
(a) Original ATC's Critical Flaws III-A-47
(b) Alternate ATC's Shortcomings III-A-49
(2) Alternate ATC Artificially Caps R/VC Ratios on High-Density Rail Segments III-A-52
c. TCS/TDIS Revenue Adjustments III-A-56
d. Handling Line Payments III-A-61
e. Non-NS TCS Traffic III-A-64
f Switching Payments III-A-65
g Rebuttal Restatement III-A-66
4. Forecasted Revenues III-A-67
a. Coal Revenue Calculations III-A-68
b. Development of 2011 TCS Revenue III-A-70
c Fuel Indices III-A-71
i. Fuel "Cost" Index III-A-72
ii Fuel "Price" Index III-A-72
d Rebuttal Revenue III-A-73
B. STAND-ALONE RAILROAD SYSTEM III-B-1
1. Routes and Mileage III-B-1
a Main Lines III-B-2
i. Partially Owned Lines III-B-2
ii. Chicago, IL Extension III-B-3
iii. Additional Lead Track III-B-3
b. Branch Lines III-B-3
c Rebuttal Route Miles III-B-3
2 Track Miles And Weight Of Track III-B-4
a Main Line Track III-B-5
i Single Main III-B-5
ii. Other Main III-B-5
b. Branch Line Track III-B-6
c. Other III-B-6

i Helper Pocket and Setout Track III-B-6
i Customer Access Sidings III-B-6
d. Yard And Interchange Track III-B-8
e Rebuttal DRR Track Miles III-B-8
3. Yard And Interchange Track III-B-9
a Yards III-B-13
i. Intermodal Facilities III-B-16
ii. Automotive Facilities III-B-16
iii Transload Facilities III-B-17
b. Interchange Track III-B-17
c. Rebuttal DRR Yards III-B-18
4. Joint Facilities III-B-18
5 Signals And Communications System III-B-19
6. Turnouts, FEDs And AEI Scanners III-B-19
C STAND-ALONE RAILROAD OPERATING PLAN III-C-1
1. DuPont's Operating Plan is Feasible III-C-3
a. DuPont's Operating Plan Is Based On NS's Own Operations III-C-4
i. DuPont Used NS's Own Operations As The Template For its Operating Plan III-C-4
(1) The DRR Provides Local Train Service III-C-7
(2) DuPont Did Not Develop a Trainload Operating Plan III-C-8
(3) The DRR Uses The Same Car Classification and Blocking Plans As NS's Real World Operations III-C-10
(4) DuPont Provided The Facilities To Operate Road and Local Trains III-C-10
(5) DuPont Provided Sufficient Time For Local Trains To Pick-Up and Set-Out Cars III-C-11
(6) DuPont Provided The Special Services To Meet The Needs of DRR Shippers III-C-12
ii. DuPont's Operating Plan Was Prepared By Experts With Many Years Of Railroad Operating Experience III-C-12
b. Any Limitations On DuPont's Operating Plan Are A Result Of NS's Failure To Provide Accurate Data III-C-14
i. NS Cannot Run Away From Its Own Flawed Data III-C-14
ii. NS Acknowledges The Flaws In Its Own Data III-C-15
(1) Train and Car Event Data Cannot Be Accurately Combined III-C-16

(2) NS Had To Resort To Opinions To Develop Dwell Times Because They Could Not Be Identified From NS Data III-C-20

iii. DuPont included All Trains NS's Data Indicated Moved Over The DRR .. III-C-22

(1) Train Event Data Shows More Trains On SARR Than Car Event Data III-C-23

(2) NS Included Trains That Are Not In The Car Event Data III-C-26

c. DuPont's Operating Plan Accounts For Reciprocal Operations III-C-27

i. Pre-Blocking Cars Forwarded to Connecting Carriers. III-C-28

ii. Handled Run Through Power III-C-29

iii. Distributive Power III-C-30

iv. Fueling and Inspecting Locomotives III-C-31

v Running Repairs To Foreign Railcars III-C-32

d. DuPont's Operating Plan Properly Handles TIH Shipments III-C-33

i The DRR Can Track TIH Shipments III-C-34

ii. DRR Trains Carrying TIH Shipments Are Limited To 50 MPH. III-C-34

iii The DRR Has The Appropriate Personnel To Handle TIH Shipments III-C-34

e DuPont Has Reasonably And Properly Included Cross-Over Traffic In "Leapfrog" Service III-C-35

f DuPont Has Accounted For Traffic On Line Segments Impacted by Rerouted Trains. III-C-50

2. DuPont's RTC Simulation Proves The Feasibility Of The DRR Operating Plan III-C-53

a. DuPont's Modeling Of NS's Own Operations Proves Its Feasibility III-C-53

b DuPont Used Correct Grade Information III-C-54

i. DuPont Relied On The Grade Information Included In NS's RTC Models Provided In Discovery III-C-55

ii Rebuttal RTC Grades III-C-56

c Track Outages III-C-56

i. NS Train Movement Data Shows Train Moving Over Line Segments NS Claims Were Shutdown Due To Outages III-C-56

ii Rebuttal RTC Outages III-C-57

d Amtrak Northeast Corridor III-C-58

e Foreign Railroad Crossings III-C-58

f DuPont's Modeling of The Chicago Area III-C-59

g Light Engine and Hi-Rail Movements III-C-60

h. DuPont Incorporated In-Route Consist Stops and Changes III-C-61

i The DRR Provides The Same Or Better Service Quality Than NS III-C-62

3. NS's MultiRail-Based Operating Plan is Unnecessary and Erroneous, and It Complicates the SAC Analysis while Providing no Advantage Over DuPont's Tried and Tested Model III-C-65

a Substituting Modeled SARR Routing And Operations For Actual Routing And Operations Is Unnecessary III-C-67

b. Substituting Modeled SARR Routing and Operations for Actual Routing and Operations Distorts the SAC Analysis III-C-71

c NS Uses A Model That Is Superior To MultiRail In Developing its Real-World Operating Plan III-C-84

d NS's MultiRail-Based Modeling Exercise Fails To Consider Downstream Impacts On Both DRR Traffic And Other Non-Selected NS Traffic III-C-85

e. NS's MultiRail-Based Modeling Exercise Fails To Account For All Selected DRR Traffic III-C-88

f NS's MultiRail-Based Modeling Exercise Relies on Simple Mathematical Algorithms Rather than Real-World Operations III-C-92

g NS's MultiRail-Based Modeling Exercise Is Riddled With Faulty And Unalterable Inputs And Assumptions That Render Its Outputs And All Downstream SAC Analyses Invalid III-C-96

4 NS's RTC Model Of The DRR Is Filled With Errors III-C-108

a. NS Incorrectly Modeled Foreign Railroad Trains III-C-108

b. NS Improperly Modeled Random Outages..... .....III-C-111

c. NS Improperly Input RTC Trains.....III-C-112

d. NS RTC Network Does Not Reflect Its Investment.....III-C-117

5. DuPont Response to NS's Criticisms of DuPont's Operating Plan III-C-120

a. Yard and Facilities III-C-120

i. Yards..... .... III-C-120

(1) Yard Switching and Classification Tracks III-C-121

(a) NS Yard Classification Car Counts are Unsupported..... . III-C-122

(b) NS Yard Classification Car Counts are Unrealistic..... .... III-C-123

(c) NS Hump Yard Classification Track Miles are Significantly Overstated III-C-125

(2) Determination of DRR Yard Classification Tracks in Rebuttal..... ...III-C-126

ii Intermodal Facilities III-C-128

iii. Automotive Facilites..... . .. . III-C-128

iv. Transload Facilities III-C-129

b Yard Activity III-C-129

i. Locomotive Inspections and Fueling III-C-129
ii. Railcar inspections III-C-130
c. Train Sizes and Equipment III-C-130
i. Train Size III-C-130
ii. Locomotives III-C-131
(1) Road Locomotives III-C-132
(a) Locomotive Dwell in Yards III-C-133
(b) Peaking Factor III-C-136
(c) Spare Margin III-C-138
(2) Local Trains III-C-138
(3) Helper Locomotives III-C-138
(4) Switch Locomotives III-C-139
d. Crew Districts and Requirements III-C-140
i. Road Crews III-C-140
ii Yard Crews III-C-140
iii Helper Crews III-C-140
D OPERATING EXPENSES III-D-1
1. Locomotives III-D-3
a. Acquisition III-D-3
i. Locomotive Types III-D-3
ii Locomotive Lease Costs III-D-5
iii Number of Locomotives III-D-9
b. Locomotive Maintenance Expense III-D-10
c Locomotive Servicing (Fuel, Sand and Lubrication) III-D-11
i. Fuel Cost III-D-11
ii Fuel Consumption III-D-12
iii. Sand and Lubrication III-D-13
2. Railcars III-D-14
a. Leasing III-D-14
i RTC Transit Times III-D-15
ii Dwell Time in Yards III-D-15
iii Intermodal Car Costs III-D-16
b Railcar Maintenance III-D-18
c. Private Car Allowances III-D-19

3 Operating Personnel III-D-19
a Number of T&E Personnel III-D-19
i. In Rebuttal DuPont Includes All Required Trains on the DRR System. III-D-20
ii Directional Imbalances On the DRR. III-D-20
iii. DRR Re-Crew Rate..... . .. .III-D-23
iv DuPont Includes All Necessary Helper Service. III-D-24
v. Yard Crews III-D-24
b. T&E Personnel Compensation..... . ...III-D-26
i. T&E Wages..... . ...III-D-26
ii Fringe Benefits..... ....III-D-27
iii. Hotel and Taxi Expense..... .... III-D-29
c Non-Train Operating Personnel III-D-30
i. Transportation Department. III-D-31
(1) Operations Planning and Joint Facilities.. ....III-D-31
(2) Operations Control. III-D-32
(3) Dispatch. III-D-33
(4) Crew Management and Crew Calling III-D-34
(5) Terminal Operations. III-D-35
(6) Locomotive Operations... . ...III-D-36
(7) Intermodal and Automotive Terminals III-D-37
ii. Mechanical Department. III-D-38
(1) EOTD Manager.... .. .. .III-D-38
(2) Managers – Maintenance Planning III-D-39
(3) Car Inspection III-D-39
iii. Operations Support Department III-D-42
(1) Operations Service and Support (OSS) III-D-42
(2) Service Design and Measurement III-D-43
(3) Equipment Planning and Distribution III-D-44
(4) Damage Prevention and Freight Claims.... ....III-D-44
d Non-Train Operating Personnel Compensation III-D-45
i Vice Presidents III-D-45
ii. Fringe Benefits..... ....III-D-45
e. Materials, Supplies and Equipment. III-D-46
4. General and Administrative.... ....III-D-46

a. Staffing Requirements III-D-47
i. Executive Department III-D-48
ii Board of Directors III-D-49
iii. Marketing & Customer Service Department III-D-49
iv Finance & Accounting Department III-D-49
v. Law and Administration Department III-D-50
vi Information Technology III-D-50
b. Compensation III-D-51
c. Material, Supplies, and Equipment III-D-51
d. Other III-D-51
i. IT Systems III-D-51
e. Other Out-Sourced Functions III-D-52
f. Start-up and Training Costs III-D-53
g. Bad Debt III-D-53
5. Maintenance-of-Way III-D-53
6 Leased Facilities III-D-56
a. Misapplied Fees III-D-57
i Car Counts III-D-57
ii. Terminal Railroad of St. Louis III-D-58
iii Conrail Shared Asset Areas III-D-59
iv. Belt Railway Company of Chicago III-D-60
b Improperly Routed Traffic III-D-61
c Construction of Chicago Area Track III-D-62
d. AMTRAK Segments III-D-62
e Mathematical Error III-D-63
7. Loss and Damage III-D-63
8. Insurance III-D-63
9. Ad Valorem Tax III-D-65
10. Other III-D-68
a. Intermodal Lift and Ramp Cost III-D-68
i. Clerical Staff and Utilities III-D-69
ii. Elizabeth, New Jersey III-D-69
iii. Chicago Cross-town Drays III-D-70
iv. Additional Personnel III-D-70

b Automotive Handling Cost III-D-70
c Costs Incurred by Residual NS for New DRR-NS Interchanges..... ..... III-D-71
d. Calculation of Annual Operating Expense III-D-72
E. NON-ROAD PROPERTY INVESTMENT III-E-1
F. ROAD PROPERTY INVESTMENT III-F-1
1. Land III-F-4
a. Review of Norfolk Southern's Land Valuation III-F-5
b. Rebuttal Of NS Review Of DuPont Appraisal. Summary III-F-11
c. Rebuttal of NS Appraiser's Review: Summary III-F-13
d. Easements III-F-14
2. Roadbed Preparation III-F-15
a. Clearing and Grubbing III-F-29
i. Quantities of Clearing And Grubbing III-F-29
ii. Clearing and Grubbing Unit Costs III-F-29
b. Earthwork III-F-31
i. Earthwork Quantities III-F-31
(1) DRR Line Segments III-F-31
(2) DRR Yards III-F-33
(3) Total Earthwork Quantities III-F-34
ii Earthwork Unit Costs III-F-35
(1) Common Excavation III-F-35
(2) Common Excavation – Adverse III-F-36
(3) Loose Rock Excavation III-F-39
(4) Loose Rock Excavation – Adverse III-F-40
(5) Solid Rock Excavation III-F-40
(6) Solid Rock Excavation – Adverse III-F-42
(7) Embankment/Borrow III-F-42
(8) Other Earthwork Quantities and Unit Costs III-F-43
(a) Stripping III-F-43
(b) Undercutting III-F-44
(c) Over-Excavation III-F-47
(d) Fine Grading III-F-48
(e) Swell III-F-49
(9) Subgrade Preparation III-F-51

(10) Land for Waste Excavation III-F-55
c. Drainage III-F-57
i. Lateral Drainage..... ..... III-F-57
ii. Yard Drainage..... III-F-57
d. Culverts III-F-58
i. Culvert Unit Costs III-F-58
ii. Culvert Installation Plans... ..... III-F-59
iii. Culvert Quantities.. ..... III-F-60
e Other III-F-61
i. Sideslopes III-F-61
ii. Ditches III-F-61
iii. Retaining Walls III-F-61
(1) Increased Roadbed Width III-F-62
(2) Masonry Walls III-F-64
(3) Timber and Tie Walls.... ..... III-F-66
(4) Piles... ..... III-F-66
(5) Foundation Excavation.. ..... III-F-67
(6) Unit Costs III-F-67
iv. Rip Rap III-F-68
v Relocating and Protecting Utilities III-F-68
vi. Seeding/Topsoil Placement..... III-F-68
vii Water for Compaction. III-F-68
viii. Surfacing for Detour Roads III-F-68
ix. Environmental Compliance III-F-68
x. Lighting for Night Work III-F-69
xi Dust Control Work III-F-70
3 Track Construction.. ..... III-F-70
a. Geotextiles III-F-72
b Ballast and Sub-ballast III-F-73
i. Ballast and Sub-ballast Quantities. III-F-73
ii. Ballast and Sub-ballast Unit Costs III-F-76
c. Ties.. ..... III-F-80
d. Track (Rail). III-F-81
i. Specifications... ..... III-F-81

ii. Rail Pricing III-F-81
iii. Field Welds III-F-82
iv. Insulated Joints..... III-F-83
v. Switches III-F-83
c. Other III-F-84
i Rail Lubricators III-F-84
ii Plates, Spikes and Anchors III-F-84
iii. Derails and Wheel Stops..... ...III-F-84
iv Crossing Diamonds..... III-F-85
v. Materials Transportation III-F-85
vi. Track Labor and Equipment III-F-85
4. Tunnels... ..... III-F-86
5. Bridges. III-F-86
a Bridge Inventory III-F-87
b. Bridge Design and Cost Overview III-F-90
i Cost Overview III-F-91
ii. Bridge Design III-F-92
(1) Superstructure Design (Spans).. ..... III-F-92
(2) Substructure Design (Piers and Abutments) III-F-93
iii Type I Bridges III-F-94
iv. Type II Bridges III-F-95
v. Type III Bridges. III-F-95
vi Type IV Bridges..... III-F-97
vii. Bridges with Multiple Span Types III-F-97
viii. Special Bridges. III-F-98
(1) Movable Bridges III-F-98
(2) Exceptionally Tall Bridges.... ..... III-F-106
(3) Non-Movable Bridges over Navigable Waters III-F-107
c. Highway Overpasses..... III-F-107
d Summary.... ..... III-F-108
6. Signals and Communications III-F-108
a. Centralized Traffic Control III-F-108
i PTC Installation in 2009 .....III-F-108
ii. Inventory of Signal Components III-F-113

iii Unit Costs for Signal Components III-F-115
b. Positive Train Control III-F-116
i. PTC Wayside System III-F-116
ii. PTC IT Costs..... III-F-117
iii. PTC Locomotive Costs III-F-118
iv PTC Development Costs III-F-118
v. PTC Expenditure Schedule III-F-118
c Detectors III-F-118
d Crossing Signal Equipment..... III-F-119
e. Communications III-F-120
f Hump Yard Equipment..... III-F-120
g. Summary..... III-F-121
7. Buildings and Facilities..... III-F-121
a Headquarters Building..... III-F-121
b Fueling and Locomotive Servicing Facilities..... III-F-122
i. Fixed Fueling Facilities..... III-F-122
ii Fueling by Truck and Locomotive Servicing Facilities..... III-F-124
c. Locomotive Repair Facilities III-F-124
d Car Repair Facilities III-F-125
e. Crew Change Facilities..... III-F-127
f Yard Offices. III-F-128
g. Maintenance of Way Buildings (Roadway Buildings) III-F-129
h Wastewater Treatment III-F-131
i Other Facilities / Site Costs..... III-F-131
j. Guard Booths III-F-134
k Mechanic Repair Shops III-F-135
l. Mechanical Offices III-F-136
m. Observation/Yard Master Towers III-F-136
n. Storage and Warehouse Buildings..... III-F-137
o. Miscellaneous Buildings..... III-F-138
p. Foundation Designs III-F-138
q. Signal Maintainer Buildings III-F-138
r. Intermodal Terminals..... III-F-139
s. Bulk Transfer Facilities..... III-F-139

t. Automotive Facilities III-F-140
8 Public Improvements. III-F-140
a. Fences III-F-141
b. Signs and Road Crossing Devices III-F-141
c. Grade-Separations III-F-141
d. At-Grade Crossings III-F-142
e At-Grade Crossing Detours III-F-142
f. At-Grade Crossing Vegetation Removal III-F-142
9. Mobilization III-F-143
10. Engineering III-F-145
11. Contingencies III-F-145
12. Construction Schedule III-F-146
13. Joint Facilities / Shared Assets III-F-147
a DRR Is Not Required To Construct The Facilities Of Non-Defendant Third Parties III-F-148
i NS Rail Does Not Own Conrail Or IHB III-F-149
ii The DRR Is Not Required To Acquire The NS Rail Ownership Interest In The BRC And TRRA III-F-153
b. NS Has Not Properly Calculated The DRR's Ownership Costs For NS-Owned Joint Facilities III-F-155
c. NS Improperly Substitutes Replacement Costs For Ownership Costs III-F-155
d. NS Includes Ownership Costs But Ignores Offsetting Revenues III-F-159
e. Conclusions III-F-165
G. DISCOUNTED CASH FLOW ANALYSIS III-G-1
1. Cost of Capital III-G-1
a Updated Cost of Capital III-G-2
b. Weighting of 2006 Cost of Equity III-G-3
c. Equity Flotation Costs III-G-4
2. Inflation Indices III-G-7
3. Tax Liability III-G-10
4 Capital Cost Recovery III-G-10
H. RESULTS OF SAC ANALYSIS III-H-1
1. Results of SAC DCF Analysis III-H-1
a Cost of Capital III-H-1
b. Road Property Investment Values III-H-1

c Interest During Construction..... ....III-H-2
d. Interest Schedule of Assets Purchased With Debt Capital III-H-2
e Present Value Of Replacement Cost... ... . III-II-4
f. Tax Depreciation Schedules III-H-5
i. Bonus Depreciation..... . ... III-H-5
ii Asset Tax Lives.... ... .III-H-9
g. Average Inflation In Asset Prices III-H-9
h Discounted Cash Flow..... ... .III-H-9
i. DRR Capital Structure III-H-10
ii PTC Investment III-H-13
i Computation of Tax Liability – Taxable Income III-H-15
j Operating Expenses III-H-15
k Summary of SAC.. .... III-H-16
2. Maximum Rate Calculations..... ... .III-H-17
a. The NS Modifications to the MMM Analysis are Unnecessary and Improper. ..
. ...III-H-18
i NS May Not Lawfully Modify the MMM Analysis in an Adjudicatory Proceeding Because the Board Adopted MMM in a Formal Rulemaking..... ....III-H-18
ii. The NS Modifications to the MMM Analysis are Unlawful. III-H-18
iii NS Improperly Treats PTC Costs as Unique to TIH Traffic. III-H-22
b. DuPont Correctly Indexed Variable Costs In the MMM Model III-H-24
3 Maximum Reasonable Rates..... .. ..III-H-26

EXHIBITS

REBUTTAL EXHIBIT II-A

1 Variable Cost, Jurisdictional Threshold, Tariff Rate and Revenue/Variable Cost Ratios Per Car for DuPont Movements – 2Q09

2. Variable Cost, Jurisdictional Threshold, Tariff Rate and Revenue/Variable Cost Ratios Per Car for DuPont Movements – 3Q09

3. Variable Cost, Jurisdictional Threshold, Tariff Rate and Revenue/Variable Cost Ratios Per Car for DuPont Movements – 4Q09

4. Variable Cost, Jurisdictional Threshold, Tariff Rate and Revenue/Variable Cost Ratios Per Car for DuPont Movements – 1Q10

5 Variable Cost, Jurisdictional Threshold, Tariff Rate and Revenue/Variable Cost Ratios Per Car for DuPont Movements – 2Q10

6. Variable Cost, Jurisdictional Threshold, Tariff Rate and Revenue/Variable Cost Ratios Per Car for DuPont Movements – 3Q10

7. Variable Cost, Jurisdictional Threshold, Tariff Rate and Revenue/Variable Cost Ratios Per Car for DuPont Movements – 4Q10

8. Variable Cost, Jurisdictional Threshold, Tariff Rate and Revenue/Variable Cost Ratios Per Car for DuPont Movements – 1Q11

9. Variable Cost, Jurisdictional Threshold, Tariff Rate and Revenue/Variable Cost Ratios Per Car for DuPont Movements – 2Q11

10. Variable Cost, Jurisdictional Threshold, Tariff Rate and Revenue/Variable Cost Ratios Per Car for DuPont Movements – 3Q11

11. Variable Cost, Jurisdictional Threshold, Tariff Rate and Revenue/Variable Cost Ratios Per Car for DuPont Movements – 4Q11

12. Variable Cost, Jurisdictional Threshold, Tariff Rate and Revenue/Variable Cost Ratios Per Car for DuPont Movements – 1Q12

13. DuPont Rebuttal Miles Calculations

14 Summary of DuPont's Rebuttal Tons Per Car Calculations

15. Summary of Traffic and Operating Characteristics for DuPont Movements

16 Summary of Tariff Rates for DuPont Movements 2Q09 - 1Q12

17. Summary of Outlier Miles Excluded

REBUTTAL EXHIBIT II-B

1 Comparison of Changes in NS Costs and RCAF – 1997 TO 2009

Attachment No. 1 - Summary of Changes in NS Variable Costs and Contract Adjustment Mechanism –1997 to 2009

2. REDACTED (HIGHLY CONFIDENTIAL)

REBUTTAL EXHIBIT III-A

1. Cross-Over Traffic

2. Demonstration of DuPont and NS TCS/TDIS Intermodal Traffic Revenue Calculation Methodologies and Development of Adjustment Indices Required to Correct DuPont Opening Overstatement and NS Reply Understatement

3 Comparison of DuPont and NS Revenue Calculation for TCS Moves

REBUTTAL EXHIBIT III-C

1. Data Sufficiency Rebuttal

Attachment No. 1 - REDACTED (HIGHLY CONFIDENTIAL)

Attachment No 2 - REDACTED (HIGHLY CONFIDENTIAL)

Attachment No. 3 – REDACTED (HIGHLY CONFIDENTIAL)

2. A Visual Representation of 65% of the Grade Errors Claimed by NS (0 5% or less)

REBUTTAL EXHIBIT III-D

1 General and Administrative Expense

2. Maintenance Of Way

Appendix A – Rebuttal to NS Reply Comments

Appendix B – MOW Rebuttal – Additional Supporting Information

REBUTTAL EXHIBIT III-F

1 DRR Road Property Investment

2. Rebuttal Report and Appraisal Review of Retrospective Appraisal of Land for E.I. DuPont de Nemours and Company (DuPont) Stand Alone Railroad (SARR) in 20 Eastern States

REBUTTAL EXHIBIT III-G

1. Land Inflation Values

REBUTTAL EXHIBIT III-H

1. Summary of SAC Results

2 Maximum Markup Methodology R/VC Ratios

3 Comparison of NS Tariff Rates and STB Maximum Rates Per Car for DuPont Movements - - 2Q09

4. Comparison of NS Tariff Rates and STB Maximum Rates Per Car for DuPont Movements - - 3Q09

5. Comparison of NS Tariff Rates and STB Maximum Rates Per Car for DuPont Movements - - 4Q09

6 Comparison of NS Tariff Rates and STB Maximum Rates Per Car for DuPont Movements - - 1Q10

7. Comparison of NS Tariff Rates and STB Maximum Rates Per Car for DuPont Movements - - 2Q10

8. Comparison of NS Tariff Rates and STB Maximum Rates Per Car for DuPont Movements - - 3Q10

9. Comparison of NS Tariff Rates and STB Maximum Rates Per Car for DuPont Movements - - 4Q10

10 Comparison of NS Tariff Rates and STB Maximum Rates Per Car for DuPont Movements - - 1Q11

11. Comparison of NS Tariff Rates and STB Maximum Rates Per Car for DuPont Movements - - 2Q11

12 Comparison of NS Tariff Rates and STB Maximum Rates Per Car for DuPont Movements - - 3Q11

13. Comparison of NS Tariff Rates and STB Maximum Rates Per Car for DuPont Movements - - 4Q11

14. Comparison of NS Tariff Rates and STB Maximum Rates Per Car for DuPont Movements - - 1Q12

PART I

PUBLIC VERSION

Table of Contents

I. COUNSEL'S ARGUMENT AND SUMMARY OF EVIDENCE I-1

A. OVERVIEW AND SUMMARY I-1

B. THE EVIDENCE SHOWS THAT NS POSSESSES MARKET DOMINANCE OVER EACH OF THE ISSUE MOVEMENTS I-7

1. Quantitative Market Dominance. I-7

2. Qualitative Market Dominance I-8

a. NS has proposed an over-simplistic two-part test of market dominance that would produce absurd results I-13

1) The NS standard ignores three of the five specifically-enumerated market dominance factors I-14

2) The NS market dominance standard would produce absurd results. I-15

b NS fundamentally misrepresents and misinterprets both DuPont's Opening Evidence and the Board's market dominance precedent. I-17

1) DuPont has taken a far more holistic approach in its market dominance evidence than NS. I-18

2) DuPont has properly defined "effective competition." I-24

3) NS has misapplied the principle that a competing mode need not be capable of handling all of the issue traffic. I-27

c. Trucks compete for short distance hauls, low volumes, expedited shipments, and when there is no rail service I-31

1) NS emphasizes DuPont's truck shipment history without considering whether the circumstances of those shipments are comparable to the issue movements. I-32

2) NS incorrectly asserts that DuPont's leverage over motor carriers is evidence of effective competition. I-35

d NS's own evidence confirms the limits of truck transportation. I-38

e The magnitude of NS rate increases over just two years, from 2009 to 2011, exemplifies its market dominance. I-42

f Customer and supplier requirements for rail service preclude the use of alternatives to rail transportation. I-45

g. The Board must apply its DMIR holding to this case. I-48

1) The statute requires the Board to consider whether effective competition exists for the transportation to which the challenged rate applies. I-48

a) NS selectively quotes from the statute and legislative history I-49

b) The Board must enforce the plain meaning of the statute. I-52

c) Segregation of market dominance and rate reasonableness is not supported by the statute I-56

d) The Board cannot consider the contract service and rate because they are outside its jurisdiction. I-58

2) NS's claims about the "real-world" impact of competition are based on hyperbole and ignore "real-world" implementation problems I-59

a) The NS position is contrary to precedent I-59

b) NS's proposal would be impractical and cause confusion I-63

3) Precedent supports DuPont's position..... . . .. .I-66

a) The precedent cited by NS does not support its position. I-66

b) The attempt to distinguish DMIR is unpersuasive..... .. ..I-69

h. The Limit Price Methodology confirms the extent of NS's market dominance....I-71

1) The Board's adoption of the LPM is procedurally sound. I-73

2) The LPM supplements, but does not replace, a traditional market dominance analysis. I-76

C. THE EVIDENCE SHOWS THAT THE CHALLENGED RATES ARE UNREASONABLY HIGH..... . ... I-79

1 The Proper Scope of Rebuttal Evidence I-80

2 Traffic and Revenues (Part III A) I-82

a The DRR traffic group I-83

b. Forecasted traffic volumes. I-89

c. Stand-alone revenue.. .... I-89

1) Modified-ATC I-89

a) NS is incorrect as a matter of law that the Board must apply Original ATC to this case. I-90

b) Modified ATC is superior to both Original and Alternate ATC I-94

2) Forecasted Revenues I-95

3. SAC Railroad System (Part III.B) I-96

4. Operating Plan (Part III.C)..... ....I-97

a DuPont has submitted a feasible operating plan I-99

1) DuPont's Operating Plan and Real-World Operations. I-100

2) Alleged "Missing Trains" and Local Service. I-102

3) Rerouted Traffic I-103

4) Yard Service I-104

5) Reciprocal Obligations With Other Carriers. ....: I-105

6) TIH shipments I-106

7) DuPont's RTC simulation I-106

8) Other operating matters I-106

b NS use of Multirail is unsupported, and is otherwise infeasible and unrealistic, and therefore the Board should not accept NS's operating plan I-107

1) The Board should reject NS's operating plan evidence, because NS has presented it without the MultiRail program..... I-107

2) Because NS has failed to support its operating plan, the Board should accept DuPont's operating plan, with the corrections DuPont has made on Rebuttal I-108

3) NS presentation of its operating plan evidence without MultiRail prevents the Board from restating it. I-113

4) Any attempt to evaluate NS's MultiRail evidence without the MultiRail program will unnecessarily delay this proceeding and be prejudicial to DuPont. I-114

c. The NS RTC simulation is filled with errors I-117

5. Operating Expenses (Part III D) I-118

a Locomotive lease costs I-119

b Locomotive maintenance expense I-120

c Fuel consumption..... I-121

d Operating personnel I-121

e General and administrative I-122

f Maintenance of way I-126

g. Insurance I-127

h. Ad valorem tax..... I-127

6 Non-Road Property Investment (Part III.E) I-128

7. Road Property Investment (Part III F) I-128

a. Land I-129

b Roadbed Preparation..... I-131

c PTC Installation I-132

d Partially-Owned Lines I-133

8. DCF Analysis (Part III.G)..... I-134

a. Cost of capital I-134

b Inflation indices for land..... I-137

9. Results of SAC Analysis (Part III.H)..... I-138

a. Interest schedule on debt I-138

b. Bonus depreciation I-139

c. DRR capital structure..... I-140

d. Index of operating expenses I-142

e. MMM calculations..... I-143

D CONCLUSION.... ....I-146

I. COUNSEL'S ARGUMENT AND SUMMARY OF EVIDENCE

Pursuant to the procedural schedule served by the Surface Transportation Board ("Board" or "STB") in this docket on March 8, 2013, E.I du Pont de Nemours and Company ("DuPont") hereby submits its Rebuttal Evidence and Argument on both market dominance and stand-alone costs ("SAC"). DuPont submitted Opening Evidence and Argument on April 30, 2012 This Rebuttal responds to the Reply Evidence and Argument submitted by Norfolk Southern Railway Company ("NS") on November 30, 2012 [1]

A. OVERVIEW AND SUMMARY

DuPont's Rebuttal Evidence establishes both that (1) NS possesses market dominance over each of the 138 issue movements involving 26 issue commodities, and (2) the challenged rates are unreasonably high when measured by a properly-applied stand-alone cost test. Despite the unprecedented vitriol, scorn, and derision that NS heaps upon DuPont's Opening Evidence, DuPont's Rebuttal shows that NS's exaggerated rhetoric is simply an attempt to conceal the infeasible, unsupported, and unrealistic nature of its Reply Evidence in an effort to defend the indefensible, namely, NS's extraordinarily unreasonable rates

NS launches its assault on DuPont's market dominance evidence by attempting to rewrite the Board's market dominance guidelines and over 30 years of precedent. NS does so by urging the Board to apply a simplistic two-part test that asks only (1) whether a truck or transload alternative can be, or ever has been, used to transport the issue commodity, regardless of volume or circumstances of such transportation; and, if so, (2) whether the alternative rate is no more than 20% above the challenged rate. If the answer to both questions is "yes," NS asserts that this conclusively demonstrates the absence of market dominance. NS's fabricated market dominance

[1] Throughout DuPont's Rebuttal Evidence, all text within single brackets is {CONFIDENTIAL} and all text within double brackets is {{HIGHLY CONFIDENTIAL}} pursuant to the Protective Order adopted in the Board's decision served on January 11, 2011 in this proceeding

standard allows it to totally ignore DuPont's compelling evidence that trucks transport the issue commodities at short distances, for low volumes, for expedited shipments, or when there is no rail alternative. It also enables NS to distract the Board's attention from the fact that truck and transload alternative rates for nearly all of the issue movements were well above the challenged NS rates until NS increased its rates by high double and triple digit percentages over just two years. In other words, after exercising its market power to the point that many truck and transload rates are within its self-proclaimed 20% threshold for market dominance, NS now proclaims that its rates are effectively constrained by those alternatives. NS also misconstrues precedent concerning customer requirements for rail service; the principle that a competing mode need not be capable of handling all of an issue movement, and the statutory requirement that the Board determine market dominance for the bottleneck movement to which the challenged rates apply and not the entire through movement which includes a non-jurisdictional contract rate In short, when the Board conducts a proper market dominance assessment in accordance with its market dominance guidelines and subsequent precedent, the facts unequivocally prove NS's market dominance over all of the issue movements

NS reserves most of its hyperbolic rhetoric for DuPont's SAC evidence, and especially its operating plan for the DRR Indeed, NS contends that DuPont's operating plan is so "irreparably deficient" that NS was required to create a new operating plan from scratch rather than attempt to correct the alleged flaws in DuPont's plan. In reality, however, NS realized that it could not achieve its desired SAC results using DuPont's operating plan, which DuPont developed based upon the approach used in every SAC case over the past decade, and therefore, NS needed to conjure a reason to deviate from that approach.

In order to justify its deviation from DuPont's operating plan, NS grossly mischaracterizes it as an "automated" methodology that is "untethered" to the traffic that DuPont selected. NS then proceeds to propose an alternative operating plan based upon the MultiRail computer program, which has never before been used in a SAC case decided by the Board, and which NS even failed to include as part of its Reply Evidence, despite the fact that the software is essential for the Board to review, comprehend, validate, and modify NS's evidence. In other words, the NS operating plan is unsupported.

But problems with the NS operating plan do not stop there. Contrary to NS's characterizations of the DuPont operating plan, it is NS's MultiRail-based operating plan that is "untethered" to the SARR's traffic. DuPont developed its plan based upon the real-world NS operations by operating the same trains in the same fashion with identical consists and routes (except for a few internally rerouted trains), and accepted the NS's real-world trip plan, train service plans, and car blocking plans. In contrast, NS conjured brand new trains with different consists traversing routes that have no connection to its real world operations, rejecting NS's own existing operations based upon decades of its own experience in favor of a made-for-litigation operating plan.

By untethering its operating plan for the DRR from its real world operations, NS has thus made it impossible for the Board and its staff to benchmark that operating plan against real-world conditions. If the Board were to adopt the NS plan, it would become a prisoner of software and of the claims of experts without any means to measure those claims against real-world railroad operations.

The NS assault on DuPont's operating plan is predicated upon numerous incorrect, misrepresented, and/or overblown allegations that are intended to vastly inflate the DRR's operating and investment requirements, including the following:

- Although NS claims that DuPont omitted over 60,000 trains needed to handle the DRR's traffic, DuPont shows that it inadvertently omitted less than 6,900 trains (out of a total of over 185,000 trains on the DRR system), and that those omissions were due to a combination of flawed NS train event data and a coding error by DuPont. On Rebuttal, DuPont has added the missing 6,900 trains.

- NS's criticism of the DRR's yard service is unsupported. It is based largely upon outputs from the MultiRail program and NS's erroneous addition of over 60,000 trains to the DRR. DuPont's Rebuttal RTC simulation proves the adequacy of its yards.

- NS wrongly accuses DuPont of ignoring the DRR's reciprocal obligations to connecting rail carriers, such as fueling and inspection of locomotives and running repairs

- NS wrongly claims that DuPont failed to provide complete service for traffic on rerouted trains DuPont shows that the allegation of incomplete service is just ordinary cross-over traffic for which the residual NS completes the movement. Indeed, some of NS's examples are not even of rerouted traffic at all.

- NS wrongly asserts that the DRR is not capable of tracking TIH traffic and lacks the appropriate personnel to handle TIH shipments In its Rebuttal, DuPont shows that most of NS's claims are simply incorrect, DuPont, however, does accept NS's criticism that the DRR's TIH trains cannot operate above 50 mph, and makes that adjustment in its Rebuttal RTC simulation.

- NS claims that DuPont failed to stop certain local trains at shipper facilities and/or provided inadequate dwell times for switching activities at those locations. DuPont, however, stopped trains at every location that could be identified from the traffic data that NS produced in discovery, and any failure to identify some locations is attributable to flaws in that data. On Rebuttal, DuPont has added local stops even though it still has grave reservations about the accuracy of NS's data. DuPont, however, continues to use the dwell times from its Opening Evidence

- NS criticizes DuPont's RTC Model for having incorrect grades NS, however, completely overstates the magnitude of this error and its effect upon the RTC simulation, which caused just 14 out of 7,210 trains to stall. Moreover, NS fails to mention that this error occurred because DuPont used grade information from RTC simulations that NS itself produced in discovery.

- NS disingenuously argues that the Board should ban so-called "leapfrog" traffic, which is simply cross-over traffic that exits and reenters the DRR system, as "gamesmanship" that would "render the SAC process and test meaningless." DuPont, however, demonstrates

> that leapfrog traffic is fully consistent with the objectives of cross-over traffic, and shows that NS's "gamesmanship" claim is fabricated and totally unrealistic Indeed, DuPont shows that NS's own RTC simulation contains the same kind of "leapfrog" traffic for which NS so bitterly criticizes DuPont. But perhaps most significantly, DuPont demonstrates, through numerous examples on both NS and other Class I railroads, that "leapfrog" movements are a regular part of everyday railroading.

In the few instances where DuPont has recognized a valid NS criticism of the DRR operating plan, it has made adjustments in its Rebuttal Evidence to correct those errors. In most cases, however, DuPont has rejected NS's criticisms, and has continued to rely upon its Opening Evidence.

NS's attempt to inflate the DRR's costs extend to its calculation of operating costs and road property investment Most of NS's operating cost units are derived directly from its RTC simulation, which is based upon NS's flawed and unsupported operating plan. NS, however, also incorrectly inflates the unit costs for locomotives, locomotive maintenance expenses, fuel consumption, and operating personnel, among others. NS more than triples DuPont's G&A staffing levels by duplicating functions, arguing that the DRR G&A costs should be compared to those of other large Class I railroads. But DuPont shows that its G&A staffing is comparable to that of current and past Class I railroads similar in size and revenue to the DRR, such as the CNW, the NW, the ICG, and the SOO With respect to maintenance of way, DuPont demonstrates that the NS's MOW plan applies practices that are 30 to40 years old and incorrectly treats the DRR as a 100 year old railroad, with all of the maintenance problems inherent in an aging system, instead of the brand new railroad that it would be

With respect to road property investment, NS wrongly accuses DuPont of valuing land in 2009 instead of 2007, when the land would be purchased. In its Rebuttal, DuPont demonstrates that NS's appraisers grossly overstated land values by applying a highly mechanized approach that ignored basic appraisal principles. With respect to roadbed construction costs, NS

improperly disregards DuPont's real world evidence, based upon the Trestle Hollow Project, even though that project involved construction in more difficult terrain than what the DRR would encounter on most of the lines that it is replacing. DuPont also shows that NS wrongly states that the technology was not available to install PTC on the DRR in 2009, and thus the DRR would not need to install a CTC system first and then overlay PTC in 2015. NS inappropriately attempts to add millions of dollars in road property investment by contending that the DRR must acquire ownership interests, calculated as replacement costs, in Conrail, the BRC, the IHB, and the TRRA in order to operate over those railroads via trackage rights. Furthermore, even if NS were correct, its use of replacement costs to approximate the actual cost to acquire an equity stake in the entities in question is misguided and results is a gross overstatement of the acquisition costs. Furthermore, the DRR would be entitled to receive revenues as an owner.

Finally, NS artificially increases the DRR's costs through the DCF and MMM analyses Contrary to precedent, NS attempts to inject equity flotation costs into the cost of capital. NS also objects to the DRR's use of bonus depreciation, even though that would be an impermissible barrier to entry. NS next proposes a modification to the MMM calculations to assign the cost of PTC installation solely to TIH traffic. But there is no basis for doing so, especially since PTC will be the sole signal system for all traffic on the DRR from the start of operation.

The foregoing is a brief summary of just some of the issues addressed in DuPont's-Rebuttal Evidence. This summary shows the lengths to which NS has gone to devise ways to drastically defend its unreasonable rate levels. From fabricating a new market dominance standard to an unprecedented vitriolic assault upon DuPont's SAC evidence, NS has disputed more issues than perhaps any prior SAC defendant. But NS's Reply Evidence is not the "conservative" analysis that NS claims rather, it is simply an exercise in devising ways to

inflate the DRR's stand-alone costs, often in direct contradiction to its own real-world experience and consistent Board precedent. DuPont's Rebuttal exposes NS's inaccurate and misleading descriptions of DuPont's evidence, erroneous statements, and fabrications, and demonstrates that NS's own reply evidence is infeasible, unsupported and unrealistic For all of these reasons, the Board should find that it has jurisdiction over all of the challenged rates and that those rates are unreasonable.

B. THE EVIDENCE SHOWS THAT NS POSSESSES MARKET DOMINANCE OVER EACH OF THE ISSUE MOVEMENTS

Of the 138 issue movements covering 26 issue commodities, NS has contested its market dominance over 99 movements covering 20 commodities NS has not contested its market dominance over any movements of chlorine, bio-propanediol, difluoroethane, glycolic acid, monomethyl formamide, and titanium tetrachloride. In addition, for the other 20 commodities, NS has not necessarily contested market dominance for every issue movement of a commodity. Therefore, DuPont has conclusively established NS's market dominance over the 39 uncontested movements.

NS has not contested its quantitative market dominance over any issue movement, but instead has contested only its qualitative market dominance. For each of the contested movements, NS contends that there is either an effective truck or rail-truck transload alternative to NS rail service, or in some cases both In addition, for the two Muriatic Acid movements, NS also contends that there is effective intramodal competition In this Rebuttal, DuPont continues to contend that NS possesses market dominance over all 138 issue movements.

1. Quantitative Market Dominance.

Although NS concedes that it possesses quantitative market dominance because all of the challenged rates have R/VC ratios in excess of 180%, the parties do not agree on the precise

calculation of the R/VC for many case lanes. Specifically, they do not agree on the following two traffic and operating characteristics: (a) loaded miles, and (2) tons per car.

On Opening, DuPont used the predominant route for each movement as the basis for loaded miles. Since then, the Board has issued a decision in M&G Polymers that rejected the predominant route approach in favor of the weighted average approach used by NS. Therefore, DuPont adopts that approach on Rebuttal.

However, NS has not consistently applied its weighted average approach. NS admits that some of its traffic data contain mileage anomalies, and NS has attempted to correct for those anomalies "by requiring a route to account for at least 10% of a lane's traffic" in order to be included in the calculation of weighted average miles. NS Reply II-A-6, note 9. But NS has not consistently applied its own 10% rule to twelve of the issue movements, which DuPont has identified in Rebuttal Exhibit II-A-17. Therefore, on Rebuttal, DuPont corrects the NS Reply by applying the 10% rule to those twelve movements.

The parties also disagree on the tons per car for those lanes where there were no movements, and thus no waybill data, in 2009 or 2010. Although NS states that it calculated the average tons per car for these movements based on car type and commodity, there is a discrepancy between the values displayed in Table II-A-1 of its Reply and the values used in its work papers. Nor has NS provided the source for either set of values. Because DuPont is unable to determine the source of NS's Reply tons per car, DuPont continues to use the weighted average ton approach that it used in Opening. The results are summarized in Rebuttal Exhibit II-A-14.

2. Qualitative Market Dominance.

The NS Reply Evidence on market dominance is a potpourri of allegations—much of it inaccurate, overstated, or mischaracterized—built around a fundamentally flawed market

dominance standard, misinterpretations of Board precedent, irrelevant examples of truck usage, and proposed transportation alternatives that demonstrate a fundamental lack of familiarity or experience with many of the issue commodities NS builds its case around just two principal allegations of fact: whether DuPont has shipped an issue commodity by truck in the past and how much it would cost DuPont to use trucks compared with rail, after NS's double- and triple-digit rate increases, for the issue movements. If a truck has ever been used and a truck or transload rate is within 20% of the challenged NS rate, NS concludes that effective competition exists NS either discounts or ignores portions of DuPont's Opening Evidence concerning the infeasibility of using truck or transload alternatives for issue commodities or issue movements. Nor does NS give much, if any, consideration to the circumstances in which DuPont has used trucks in the past and whether those circumstances are comparable to the issue movements. These omissions leave gaping holes in the NS market dominance analysis that, when filled by DuPont's evidence, clearly demonstrate the existence of market dominance

NS relies on the testimony of a single witness, Gordon Heisler, for all of its market dominance evidence. Mr. Heisler does not claim, nor does he appear, to have prior experience with most of the issue commodities Although Mr. Heisler's Verification identifies experience with ethanol, mineral products and crude oil, the only issue commodity that is even mentioned is polymers, which would encompass polyethylene It is hard to believe, therefore, that Mr. Heisler could testify knowledgeably about each issue commodity, especially when DuPont itself relied upon 17 different witnesses in its opening market dominance testimony. Mr. Heisler's sole task, however, appears to have been to review DuPont's logistics contracts to determine if he could craft a lower-priced truck or transload alternative for the issue movements, consistent with NS's myopic focus on alternative transportation rates. But, Mr. Heisler's inexperience with many of

the actual issue commodities has caused him to propose transportation alternatives that are not feasible, rates that are not applicable, and carriers that cannot handle the issue commodity. DuPont has detailed those errors in the commodity discussions in Part II B.2

In an effort to compensate for its omissions, NS misrepresents Board precedent and engages in deliberate misdirection by accusing DuPont of doing precisely the same thing NS wrongly accuses DuPont of citing a single precedent as conclusive of the market dominance determination, and then does the exact same thing, Specifically, NS cites to the ICC's holding in Aluminum, 367 I C C. at 483-84, that effective intermodal competition can exist even if a competing mode is not capable of handling substantially all or even a majority of the subject traffic, without attempting to demonstrate the existence of any of the factors that are essential for that holding to apply. DuPont, in contrast, has linked each precedent it cites to the facts of individual commodities and movements, and has presented a myriad of factual and legal evidence to provide the Board with a holistic foundation for finding market dominance.

Next, NS points to isolated examples from its own internal documents to prove that trucks provide effective competition. But most of the examples do not concern the issue commodities, and to the extent they show anything at all, they reinforce DuPont's claims that trucks are mostly competitive over short distances and for expedited movements The most relevant example of truck competition presented by NS is suspect, as having been created for this litigation, because of the timing and circumstances surrounding it.

NS also argues that DuPont's contracts with motor carriers contain "favorable" terms that demonstrate the effectiveness of truck competition This argument, however, fails for two essential reasons If NS truly competed in the same sphere as trucks for the issue commodities, then one would expect NS to be participating in the same bid process by which trucks compete

against each other and that DuPont's contracts with NS would contain many of the same "favorable" terms and conditions. Neither is true. Rather, trucks compete mostly with each other to transport the issue commodities (1) over distances of a few hundred miles, (2) to serve non-rail customers, and (3) for expedited shipments to rail-served customers. There is very little overlap in truck and rail markets for transportation of the issue commodities.

NS casually dismisses some of DuPont's most compelling evidence of market dominance, which are the double- and triple-digit NS rate increases over just two years from 2009-2011. Those rate increases demonstrate that, as soon as the most recent contracts with DuPont expired, NS immediately exercised its market power Indeed, it is the aggressiveness of the NS rate increases that both (1) prompted DuPont to challenge the NS rates, and (2) resulted in lower truck rates for many of the issue movements. Thus, the fact that NS can point to lower truck rates after such unprecedented rate hikes does not prove that trucks are effective competitors, but rather that trucks played no role at all in constraining NS's pricing. NS nevertheless claims that its rate increases simply brought the DuPont rates up to "market" levels upon expiration of legacy contracts. The facts, however, do not even come close to explaining the magnitude of the NS rate increases Moreover, NS fails to differentiate between competitive "markets" and monopoly "markets" when it refers to "market" rates

NS also denigrates DuPont's evidence of customer and supplier transportation requirements. NS's claim that DuPont has not presented any evidence of such requirements ignores both the sales and purchase contract evidence submitted by DuPont and the testimony of DuPont witnesses who engage directly with these customers and suppliers in the ordinary course of business and whose job it is to know exactly what are their needs. Although NS acknowledges the contract evidence submitted by DuPont, it assumes that DuPont can

unilaterally change the contract requirements upon the expiration of each contract. NS also discounts those requirements if a contract also contains provisions for truck delivery or a customer has ever received even a single truck delivery. But, this ignores the fact that trucks are used for expedited shipments, which does not give DuPont latitude to use trucks as the primary mode of delivery for all shipments

Much of the foregoing discussion is rendered moot, however, because the alternatives that NS has proposed for most of the issue movements would violate the Board's holding in DMIR that intermodal competition concerns only those "alternatives between the points to which the rate applies." NS has proposed whole route alternatives even though the challenged NS rate applies only to a segment of a joint-line movement. NS argues that the governing statutes, the real-world impact of competition, and prior ICC and Board decisions belie the DMIR holding On rebuttal, DuPont shows that the plain meaning of the statute demonstrates the correctness of the DMIR holding, and that the NS position is contrary to precedent, impractical, and would produce absurd results

Finally, NS attacks the Board's recently-proposed "Limit Price Methodology" ("LPM"). DuPont demonstrates that the LPM is legally permissible, is economically justified, and would establish a presumption of market dominance for 77 of the 99 contested movements.

DuPont addresses the details of the foregoing qualitative market dominance subjects in the following subparts:

- Part a details the over-simplistic and unduly narrow market dominance standard advocated by NS and the absurd results that it would generate.
- Part b. contrasts the holistic approach to market dominance taken by DuPont with NS's myopic focus on rates and its misrepresentations of precedent
- Part c shows how even NS's own evidence demonstrates the non-overlapping spheres in which truck and rail transportation of the issue commodities occur.

- Part d. reviews and critiques the few examples of alleged truck competition that NS has presented and shows how even those examples are consistent with DuPont's evidence that trucks serve only a narrow subset of movements for the issue commodities.
- Part e. responds to NS's claim that its extraordinary rate increases from 2009-2011 were justified "market" increases upon expiration of a legacy contract.
- Part f addresses the NS charge that DuPont has not demonstrated that its customers or suppliers for any of the contested movements require rail transportation
- Part g. responds to NS's criticism of the DMIR decision.
- Part h. responds to NS's criticism of the Limit Price Methodology

a. NS has proposed an over-simplistic two-part test of market dominance that would produce absurd results.

NS posits a two-part market dominance standard that is overly simplistic, is contrary to Board precedent, and would generate absurd results. Specifically, the NS standard asks just two questions. (1) Is the transportation alternative physically feasible, and (2) Is the alternative transportation rate no more than 20% above the through rail rate? If the answer to both questions is "yes," NS argues that the Board should conclude that the alternative provides effective competition. This standard would create a "heads I win, tails you lose" scenario benefitting the railroad, which is particularly ironic because that is precisely what NS has accused DuPont of proposing.[2] NS Reply I-23 to -24, NS Reply II-B-94.

[2] NS is only able to accuse DuPont of this inconsistency by paraphrasing DuPont's Opening Evidence out of context At pages I-23 to -24 of its Reply Evidence, NS states

> In DuPont's view, where the cost of alternative transportation is more than 10% above NS s rail rates, that is supposed "conclusive" proof that NS is market dominant *See e g*. DuPont Opening I-14 to I-16 But when NS's rail rates are equivalent to or higher than truck rates, that supposedly proves market dominance too *See id* at II-B-118 (declaring that lanes where direct trucking costs less than 10% more than the cost of rail transportation must be lanes where "NS has priced up to the higher cost truck alternative") This illogical heads I win, tails you lose style of argumentation lacks any merit

In fact, DuPont argued that "a 10% rate disparity after a substantial rate increase was sufficient to demonstrate a lack of effective competition " Dup. Op Narr I-15 (underline added) NS's omission of the underlined phrase is significant because that phrase eliminates the alleged inconsistency in DuPont's argument

1) The NS standard ignores three of the five specifically-enumerated market dominance factors.

The NS standard myopically focuses on whether truck alternatives are physically feasible and similarly priced, as if those two factors alone establish the existence of effective competition. But trucks can be physically feasible and similarly priced and still not constitute effective competition. Indeed, the NS position is belied by the market dominance guidelines, which contemplate that trucks can be physically feasible and similarly priced, but still not be an effective competitive constraint upon rail rates if the circumstances in which trucks are used are different from the circumstances of the issue movement.

In Market Dominance Determinations, 365 I C C at 133, the ICC identified five types of evidence from which "[e]ffective competition from motor carriage may be deduced":

> (1) the amount of the product in question *that is transported by motor carrier* where rail alternatives are available,
>
> (2) the amount of the product *that is transported by motor carrier* under transportation circumstances (*e g.*, shipment size and distance) similar to rail;
>
> (3) the amount of the product *that is transported using motor carrier* by shippers with similar needs (distributional, inventory, et cetera) as the shipper protesting the rate;
>
> (4) physical characteristics of the product in question that may preclude transportation by motor carrier; and
>
> (5) the transportation costs of the rail and motor carrier alternatives

(italics added). The first three types of evidence, as illustrated by the italicized phrases, contemplate that motor carriers actually transport the issue commodity in the real world. Only the fourth type of evidence considers the possibility that motor carriers are not even a physically feasible alternative and only the fifth type considers the price of the alternative transportation. Thus, NS is flatly wrong when it suggests that market dominance is merely a question of whether

trucks can be used, and if so, are truck rates similar to or below the challenged rail rates The NS position considers only the fourth and fifth types of evidence, without any consideration of the first three.

While physical feasibility and lower alternative transportation rates are relevant factors in the market dominance analysis, they must be considered holistically with other factors. One such factor is whether there has been "any diversion after a reasonable time following a rate increase." Special Procedures, 353 I C.C at 929. See also, FMC, 4 S.T.B at 718 ("the fact that [carrier] matches prices set by alternatives with significantly higher costs, while maintaining a dominant market share, is not enough to demonstrate effective competition for the traffic at issue"). Two other relevant factors include the amount of the issue commodity that is transported by the alternative when rail service is available and under transportation circumstances similar to rail. Market Dominance Determinations, 365 I C C at 133. Therefore, the Board must weigh evidence of lower alternative transportation rates against the magnitude of recent NS rate increases and the volume of traffic that actually moves via the lower-priced transportation alternative either for the issue movement or in similar circumstances where rail alternatives are available.

2) The NS market dominance standard would produce absurd results.

NS urges the Board to conclude that "when the cost of alternative transportation is less than or reasonably comparable to the cost of rail transportation, the alternative transportation is effective competition unless the complainant presents evidence that some non-cost-related factor prevents it from being so." NS Reply I-24; II-B-94 to -95. In other words, so long as trucks are physically feasible, NS argues that they must provide effective competition whenever the

challenged rail rate is greater than the truck rate This market dominance standard would produce absurd results.

Specifically, NS's position would allow railroads to insulate themselves from a market dominance determination simply by exercising their market power to the greatest extent possible. For example, the NS position concedes that a truck rate that is at least 20% above the challenged rail rate would not be an effective competitive constraint, which would require the Board to find that the railroad possesses market dominance in those situations Indeed, NS has not contested its market dominance over any issue movement where this fact exists based upon NS's own reply evidence.[3] However, if that same railroad were to increase its rate to match or exceed the truck rate, regardless of the magnitude of that increase, NS would conclude that there is no market dominance over that very same movement. Indeed, the higher above the truck rate the more insulated the rail rate will be from regulatory challenge, because that will demonstrate an even greater constraint upon rail pricing. In other words, if a railroad intends to exercise its market power to increase a rate, it should ensure that it increases its rate to a level that exceeds the lowest-truck rate in order to avoid a market dominance determination. This NS market dominance standard is absurd on its face, because the more market power a railroad exerts the less likely it is to be found market dominant.

In this proceeding, DuPont has demonstrated that NS has engaged in setting the challenged rates based precisely upon this unsupportable market dominance standard. DuPont Opening Exhibit II-B-3 contains the NS rate history for every issue movement, except where the movements are too recent to have a rate history. For the vast majority of the issue movements, NS has increased its rates over just a brief two year period by double- and triple-digit

[3] DuPont does not concede the accuracy of all the NS reply evidence on alternative transportation rates DuPont has addressed its disagreements with the NS evidence in its discussion of individual issue movements in Part II B 2

percentages. As a result, truck rates that historically were much higher than rail rates suddenly have become comparable to, or even much lower than, the challenged rail rates. While this may create the appearance of a rate constraint, that constraint is illusory because it is based upon a comparison of rates after NS has exercised its market power. Thus, the constraint cannot be considered evidence of "effective competition," as required by the statute 49 U.S.C. § 10707(a).

By NS's logic, in 2009, NS would have possessed market dominance over most of the contested issue movements because of significantly higher truck rates. However, by increasing its rail rates by double-and triple-digit percentages over the following two years, the rail rates now equal or exceed the truck rates for nearly every contested movement, which NS contends is proof that it lacks market dominance. In other words, NS claims that it no longer possesses market dominance because it already has exercised its market power to the point that trucks have become a similar or lower-priced alternative. The inconvenient truth underlying NS's logic is that the only reason NS can point to comparable or lower truck rates as evidence of effective competition is because NS itself has created that situation through its own enormous rate increases, which by NS's own logic were possible only because NS possessed market dominance. This is a true "heads I win, tails you lose" argument that favors NS.

b. NS fundamentally misrepresents and misinterprets both DuPont's Opening Evidence and the Board's market dominance precedent.

NS cites multiple ICC and STB decisions, without any context, for the proposition that truck competition is effective. NS Reply II-B-13 to 16. NS would simply have the Board conclude that, because trucks provided effective competition in those cited cases, they must provide effective competition for the issue DuPont traffic. Although both parties have cited to STB precedent that concludes trucks were, or were not, effective competitors, only DuPont has attempted to demonstrate the relevance of its cited precedent to the issue movements. NS,

however, denigrates that evidence as an "attempt to reduce the Board's precedents to simplistic formulas whereby DuPont can establish jurisdiction by presenting one or two facts that were considered in a previous case .." NS Reply II-B-18. NS also unfairly accuses DuPont of "systemically mischaracteriz[ing] the Board's market dominance jurisprudence." NS Reply II-B-17 In fact, NS has mischaracterized DuPont's evidence and argument and frequently cited Board precedent as dispositive of issues without any consideration of whether the facts underlying that precedent have any similarity to the facts in this proceeding. Thus, it is NS who *fundamentally misrepresents Board precedent.*

1) DuPont has taken a far more holistic approach in its market dominance evidence than NS.

NS egregiously accuses DuPont of "ignor[ing] the Board's practice of considering multiple factors before each market dominance determination and making a decision based on the record as a whole," and that "[i]nstead, DuPont pretends that any piece of evidence cited in a previous decision finding that a railroad possessed market dominance is individually sufficient to support a market dominance finding here " NS Reply II-B-17 DuPont, however, has taken a very holistic approach, whereas NS has not.

The evidence of DuPont's holistic approach can be found in its Opening Evidence on the last page of each commodity-specific section See Dup Op. Ev Parts II B 2.a -z. On those pages, DuPont summarizes in bullet points each of the multiple facts that, when considered together, establish the market dominance of NS over the issue movements. Those facts cover a broad range of Board precedent. Even if a single fact standing alone is not sufficient to prove market dominance, the collective weight of DuPont's evidence clearly does so.

In contrast, NS advocates a very narrow and overly simplistic approach that would ignore most of DuPont's evidence even though that evidence is highly relevant based upon Board

precedent. NS would have the Board consider just two facts: (1) Is the alternative transportation (*e.g.* truck and/or transloading) physically feasible (*e.g.* has it ever been used to transport the issue commodity), and (2) Is the alternative transportation rate similar to (*e.g.* up to 20% more), or lower than, the challenged rail rate? Although both factors are relevant to the market dominance determination, they constitute just two of the five explicitly identified factors in Market Dominance Determinations, 365 I.C.C. at 133, from which "[e]ffective competition from motor carriage may be deduced"

> (1) the amount of the product in question that is transported by motor carrier where rail alternatives are available,
>
> (2) the amount of the product that is transported by motor carrier under transportation circumstances (e.g., shipment size and distance) similar to rail,
>
> (3) the amount of the product that is transported using motor carrier by shippers with similar needs (distributional, inventory, et cetera) as the shipper protesting the rate;
>
> (4) physical characteristics of the product in question that may preclude transportation by motor carrier, and
>
> (5) the transportation costs of the rail and motor carrier alternatives.

Moreover, the agency made absolutely clear that it also would consider other types of evidence beyond just those five factors.

DuPont has considered all five of these market dominance factors in its evidence and incorporated additional factors from Board precedent. First, like NS, DuPont considered whether a transportation alternative is physically feasible. There does not appear to be much dispute over this factor between DuPont and NS, because NS has not proposed any transportation alternative that DuPont claims is physically impossible or has never been used for

the issue commodity (except for truck-to-rail transloading of titanium dioxide and sulfuric acid) DuPont, however, does assert that trucks have never been used for some of the issue movements

Second, like NS, DuPont considered the rates of the transportation alternatives relative to the challenged rail rates For some issue movements, NS and DuPont estimated similar rates for the transportation alternatives, whereas there are varying degrees of discrepancy for other issue movements. DuPont addresses the more significant discrepancies in its discussion of individual lanes in Part II.B.2 of this Rebuttal Evidence. DuPont and NS disagree over how much above the challenged rate an alternative transportation rate can be and still be considered an effective competitive constraint. NS uses a flat 20% threshold without citing any precedent for its choice NS Reply II-B-107 to -108 [4] In contrast, DuPont cited to the Board's recent decision in DuPont (Plastics), slip op at 7, in which the Board found market dominance where there was a 10% rate disparity after a substantial rail rate increase. Because NS has increased nearly every issue rate by double- and triple-digit percentages over the course of two years or less immediately preceding DuPont's Complaint, DuPont adopted a 10% threshold. See Dup. Op Narr. I-14 to -16 and Op Ex II-B-3 NS accuses DuPont of misstating the holding in DuPont (Plastics) because the Board's market dominance determination in that decision was based upon multiple factors. NS Reply II-B-107 But that does not undermine DuPont's reliance upon this precedent, which even NS concedes did apply a 10% threshold, because DuPont also presents evidence of other relevant factors. Indeed, NS's logic would preclude both parties from relying upon any

[4] NS cites only to USDOT comments submitted over 35 years ago in Special Procedures, 353 I C C. at 881, which proposed that effective competition exists whenever the alternative rate is 120% or less of the rail rate But the USDOT comments were a rejection of the Board's approach and the Board did not adopt USDOT's suggestion Furthermore, because all rail and motor carrier rates were published in public tariffs back then, the rail tariff rates more accurately reflected market rates pursuant to which most rail traffic actually moved in contrast to rail tariffs for many commodities today that are used, if at all, for occasional movements or by shippers challenging the reasonableness of the rail rate. As several complainants in other rate cases have informed the Board, rail tariff rates typically reflect a substantial premium over the rates that are offered in contracts See Docket NOR 42123 M&G Letter to Chairman Elliott (dated March 22, 2011), Docket NOR 42121 Total Letter to Chairman Elliott (dated March 22, 2011)

Board precedent for any single point because every market dominance determination is predicated upon multiple factors. Contrary to NS's mischaracterizations, DuPont's evidence does not rely solely upon rate comparisons, but includes evidence of other market dominance factors to complement its rate evidence in holistic fashion.

Third, unlike NS, DuPont has considered the amount of the issue commodities that is transported by motor carrier where rail alternatives are available. NS simply counts the number of shipments when DuPont has used trucks to transport an issue commodity and asserts that it need show nothing more than a similar or lower truck rate to establish the existence of effective competition. In response to this NS evidence, DuPont has shown that the overwhelming majority of its truck shipments of the issue commodities are to locations without rail service, which significantly undermines the significance of NS's claims.[5]

Fourth, unlike NS, DuPont has presented evidence as to the amount of the issue commodities that is transported by motor carrier under transportation circumstances (e.g., shipment size and distance) similar to rail. In particular, DuPont has shown that the issue movements cover distances that are far longer than Board precedent has considered trucks to be competitive with rail. Dup. Op. Narr. I-24, -25 to -27, -28 n.28. DuPont also has shown that, when trucks have been used for the issue movements, they were only a very small portion of the total volume transported, which is consistent with DuPont's testimony that trucks are only used in the following four scenarios: (1) to serve non-rail customers; (2) over short distances; (3) to deliver small volumes; and (4) when expedited transit is required. Dup. Op. Narr. I-10. In contrast, NS focuses solely upon whether trucks have ever been used at any distance to serve any

[5] DuPont addresses this evidence, where pertinent, in its discussion of individual commodities in Part II.B.2.

customer, without regard for the circumstances in which such use occurred and whether those circumstances also apply to the issue movements.

Fifth, unlike NS, DuPont has presented evidence as to the fifth market dominance factor, which is the amount of product that is transported via motor carrier by shippers with similar needs as DuPont where such evidence was available. It is difficult for DuPont to present evidence based upon the needs of other shippers, most of which are competitors, and there is a dearth of meaningful public information for DuPont to tap. Furthermore, for some of the issue commodities, DuPont is the only domestic producer or one of just a few producers. Nevertheless, DuPont was able to present certain facts for commodities such as polyethylene (to demonstrate the polymer industry's substantial reliance upon rail cars) and titanium dioxide (to show that no producers engage in truck-to-rail transloading).

Finally, DuPont has incorporated into its evidence the following additional market dominance factors that have evolved in individual cases subsequent to Market Dominance Determinations:

- Safety considerations in the transportation of hazardous materials are relevant to determining the feasibility of transportation alternatives. Gen. Elec. Co. v. Balt. & Ohio R.R., No. 38125S, 1984 ICC LEXIS 206, at *4-5 (ICC served Oct. 12, 1984) (finding market dominance over a methyl chloride movement because "any significant diversion of traffic to motor carriers would result in substantial highway movement, loading, and unloading of a hazardous commodity.") Therefore, DuPont has argued that the Board should not allow lower alternative transportation rates to preclude a finding of market dominance, thereby encouraging shippers to transport more hazardous materials by truck. See Dup. Op. Narr. I-12.

- In addition to comparing alternative transportation rates with the challenged rail rates, the Board considers the costs of converting a facility to enable use of the alternative mode. Int'l Minerals & Chems. Corp. v. Burlington N., Inc., 1986 ICC LEXIS 300, *11 (May 12, 1986). Because many of the issue DuPont facilities are designed for rail as the primary transportation mode and thus cannot handle significant truck volumes, DuPont would have to spend considerable sums of money to enable it to use truck alternatives. Therefore, it is improper to find effective competition solely on the basis of a lower transportation rate. Dup. Op. Narr. I-29 to -38.

- Where DuPont is the supplier, a contractual requirement to deliver product to its customer by rail "makes a switch to trucks highly infeasible from an economic standpoint due to the risk of losing its customer or incurring breach-of-contract liability." DuPont (Nitrobenzene), slip op. at 6. Conversely, where DuPont is the purchaser, it has no right to insist on motor carrier transportation if the supply contract requires rail. Dayton Power & Light Co. v. Louisville & Nash. R.R., 1 I.C.C.2d 375, 382 (1985). For many of the issue movements, DuPont has presented evidence of such contractual requirements. Dup. Op. Narr. I-47 to -50.

- A similar or lower alternative transportation rate is not an effective competitive constraint where the alternative transportation has higher costs than rail. DuPont (Plastics), slip at 7-8 ("A carrier possessing market power might set its rates so high that it would begin to lose business to a higher-cost alternative (such as a trucking company). As the Board has previously noted, while this may create an 'outer limit' constraint, it does not necessarily mean that effective competition is present."). See also, FMC, 4 S.T.B. at 718 ("the fact that [carrier] matches prices set by alternatives with significantly higher costs, while maintaining a dominant market share, is not enough to demonstrate effective competition for the traffic at issue."). The Board has long recognized that "the cost-competitiveness of truck transportation decreases with increasing distance." Consolidated Papers, 7 I.C.C.2d at 337; see also, General Electric, 1984 ICC LEXIS 206, at *5. DuPont has presented evidence of extremely aggressive NS rate increases for issue movements at distances between 300 and 1500 miles. Dup. Op. Narr. I-22 to -27.

- Comparable or lower rates for alternative transportation have been found to constitute evidence of effective competition only when railroads have reduced their rates to meet the competitive threat, not increased them. See e.g., Consolidated Papers, 7 I.C.C.2d at 337-38, FMC, 4 S.T.B. at 713-14, Allied Chem. Corp. v. Ann Arbor R.R. Sys., 1 I.C.C.2d 492, 506-07 (1985). Because nearly all of the similar or lower alternative transportation rates for the DuPont issue movements are the result of aggressive NS rate increases, DuPont argued that is the antithesis of effective competition. Dup. Op. Narr. I-27 to -29.

Although every factor is not necessarily present or relevant to every issue movement, DuPont has presented evidence of market dominance that is predicated upon multiple factors for each issue movement. The foregoing demonstrates that DuPont, not NS, has taken a holistic approach that considers multiple factors in determining market dominance. NS's claim that DuPont ignores the Board's consideration of multiple factors simply is not credible. Nor is it credible for NS to claim that its approach is holistic, when NS has advocated a two-part, over-simplified test that is based solely on two of the five factors in Market Dominance Determinations.

2) DuPont has properly defined "effective competition."

NS accuses DuPont of misstating the very definition of "effective competition." NS Reply II-B-18 That definition is "if a carrier raises the rate for such traffic, then some or all of that traffic will be lost to other carriers or modes." Market Dominance Determinations at 129 It is difficult to comprehend how DuPont could misstate a definition that is a direct quote from Board precedent in the first place. In fact, DuPont was quoting the D.C. Circuit in CF Indus., Inc v STB, 255 F.3d 816, 821 (D.C. Cir. 2001), which in turn was quoting Market Dominance Determinations. See Dup. Op Narr 1-3. Therefore, if DuPont was misstating the definition, then so was the D.C. Circuit.

NS does not like this definition because it fears that it would open the door to "gaming" by complainants who would simply refuse to use lower rate transportation alternatives in order to establish market dominance. NS Reply II-B-18 to -19. But this is not a new definition and there is no evidence that it has led to such "gaming." Indeed, for the 3-5 years it currently takes to complete a SAC rate case, it would be extremely detrimental for a complainant to spend millions of dollars in litigation and deliberately forego a much lower-priced alternative just to establish market dominance, without any assurance of recovering the excess money at the end of the case The "tariff premium" that complainants must pay while pursuing a rate case, in addition to substantial litigation costs, has been a significant concern among complainants in other recent SAC cases, who have identified rate premiums ranging from $60,000 to $110,000 per week [6] This means that a complainant would have to risk tens of millions of dollars to "game" the market dominance determination. If successful, the complainant does not get a reduced rail rate, but only the opportunity to challenge that rate through another costly and time consuming

[6] See Docket NOR 42123, M&G Letter to Chairman Elliott (dated March 22, 2011), Docket NOR 42121, Total Letter to Chairman Elliott (dated March 22, 2011)

process while continuing to pay the tariff premium. Therefore, "gaming" the market dominance process would be a high stakes gamble because, even if successful, it does not entitle the complainant to recover any of the tariff premium.

Furthermore, it would not be difficult to prove that any "gaming" has occurred because there surely would be examples of other shippers making extensive use of the alleged alternative transportation under similar circumstances if that alternative were as competitive as the railroad alleges. Because evidence of shippers using alternative transportation under conditions similar to the issue movement is one of the five explicitly enumerated market dominance factors in Market Dominance Determinations, at 133, the market dominance standard itself has a built-in safeguard against gaming

NS quotes an alternative definition of effective competition that it contends is the "recognized" definition. "Effective competition for a firm providing a good or service means that there must be pressures on that firm to perform up to standards and at reasonable prices, or lose desirable business." NS Reply II-B-19, quoting Market Dominance Determinations at 129. DuPont does not object to that definition, nor does DuPont see much difference between the two definitions. This alternative definition also contemplates the loss of desirable business to a competitive mode.

In any event, NS has taken DuPont's definition way too literally, indeed more literally than even DuPont has applied it. Even if NS had lost some of the issue traffic to alternative transportation, that would not necessarily prove the existence of effective competition. The Board held in DuPont (Plastics), slip op. at 7-8, that, if a carrier with market power set its rates so high that it lost business to a higher-cost alternative, that would not necessarily mean that effective competition is present. Since DuPont has invoked that holding as one of its main

evidentiary points, clearly DuPont itself has not given the challenged definition of "effective competition" the meaning that NS fears so much. See Dup. Op. Narr I-22 to -24

Finally, NS accuses DuPont of mischaracterizing the law when it claims that competition cannot be effective unless shippers are "able to respond quickly to changes in transportation charges." NS Reply II-B-20, quoting Dup. Op. Narr. I-7 (citing Special Procedures at 929). NS claims that this is old precedent and does not represent current law.

NS claims that this is not current law based upon just two Board decisions. In Southwest R R. Car Parts Co. v. Missouri Pac R.R Co., STB Docket No 40073, 1998 STB LEXIS 71, *2 (served Feb 20, 1998), the Board stated, "The fact that it may take some time for a shipper to exercise its competitive alternatives does not preclude a finding of market dominance " This statement, however, is *dicta* that appears in a general description of the market dominance standards without any attribution to prior precedent, without any explanation, and without any reference to the facts of that case.

The second cited case is FMC, 4 S.T.B. at 712-13, where the Board found effective competition because the shipper could build a truck-loading facility to take advantage of truck competition But, DuPont has not claimed that Special Procedures means that market dominance cannot exist if DuPont must construct additional facilities before it can use a transportation alternative. In fact, DuPont has presented evidence of the need for, and cost of, such facilities in its opening evidence. To the extent that NS seeks to rely upon similar or lower alternative transportation rates to demonstrate effective competition, however, Special Procedures remains relevant because, either DuPont must be able to take advantage of the alternative transportation immediately or, if not, the cost and time to make the additional investment must be offset against any rate savings. Int'l Minerals & Chems Corp. v Burlington N., Inc., 1986 ICC LEXIS 300,

*11 (May 12, 1986). That infrastructure cost also must be part of the Board's determination of whether NS has set its rates based upon that of a much higher-cost alternative, thus rendering that alternative an ineffective competitive constraint. See DuPont (Plastics), slip op. at 7-8.

In the final analysis, the debate that NS tries to conjure over the definition of "effective competition" is much ado about nothing. The different definitions are mostly semantics and DuPont's evidence comports to both definitions. Moreover, the evidence presented in this case extends far beyond the question of whether DuPont has diverted any of the issue traffic to alternative transportation. That additional evidence ultimately will be part of the Board's final market dominance decision.

3) NS has misapplied the principle that a competing mode need not be capable of handling all of the issue traffic.

Whenever DuPont has presented evidence of infrastructure or other limits upon its ability to use trucks for an issue movement, NS cites to the proposition first expressed in Aluminum, 367 ICC at 483-84, that effective intermodal competition can exist even if a competing mode is not capable of handling substantially all or even a majority of the subject traffic.[7] While the principle may be correct, specific facts must be present for it to apply. But NS fails to acknowledge this requirement, much less actually discuss any of the facts upon which the principle is based. Instead, NS merely cites to the principle without attempting to explain why it should apply to any of the issue traffic.

The ICC enunciated this principle in Aluminum to explain how it was able to find effective truck competition even though less than 10 percent of the issue traffic actually moved by truck. NS, however, omits from its discussion of this principle the actual facts that the ICC

[7] NS Reply II-B-13. NS more frequently cites to DuPont (Chlorine) and Amstar Corp. v. Great Alabama Southern Railroad, Docket No. 38239S (served Nov. 10, 1987), for this proposition. See NS Reply II-B-13, -101, -105 to -106, -136 to -137, -144 to -145, -153, -174, -187. However, DuPont (Chlorine) cites to Amstar, which in turn cites to Aluminum, which is the original source of this statement.

identified to enable it to apply the principle in order to find effective competition in that case. Specifically, the ICC applied this principle in the context of very specific evidence that widespread use of trucks was feasible because (1) trucks had accounted for a third of aluminum traffic nationwide as recently as 5 years earlier, and (2) the railroad share of aluminum traffic had decreased by over 20% Id. at 483. The ICC concluded that these facts reflected a "national trend away from rail to motor carriers for aluminum shipments," which was sufficient to overcome the low truck market share for just the issue traffic Id. There is no such evidence in this proceeding of a "national trend" away from rail to motor carriage for any of the issue commodities that would counter-balance the significance of the low truck market share for the issue traffic.

This more complete interpretation of the Aluminum decision has been affirmed in subsequent agency decisions that declined to find market dominance based upon the Aluminum principle In Dayton Power & Light Co. v Louisville & Nashville Railroad, 1 I.C.C.2d 375, 383 (1985), the ICC clarified that there are limits to the principle based upon the facts of the Aluminum case:

> [I]n *Aluminum* widespread use of motor carriage was clearly feasible since (1) trucks had accounted for practically a third of all primary aluminum traffic nationwide in the past and (2) the use of motor carriage to transport aluminum was steadily increasing

Similarly, in Amstar Corp. v. Great Alabama Southern Railroad, Docket No 38239S, 1987 ICC LEXIS 65, at *21-22 (served Nov. 10, 1987), the ICC observed:

> As we recognized in Aluminum I, supra, effective intermodal [sic] competition can exist even if a competing mode is not capable of handling substantially all or even a majority of the subject traffic (367 I C.C. at 483-484) and we must look at potential competition as well as actual or historical competition (id. at 481). Indeed, in Aluminum I we found effective intermodal [sic] competition even though less than 10 percent of the subject traffic actually moved by

> truck. However, widespread use of motor carriage was feasible there since, (1) trucks had accounted for practically a third of primary aluminum traffic nationwide in the past; and (2) the use of motor carriage to transport aluminum was once again increasing (id. at 483-484). (underline added)

By the time of the DuPont (Plastics) decision, the Board was citing Aluminum for a proposition that imposes significant limits upon the principle espoused by NS:

> Evidence that a small volume of the issue traffic moves on an alternate mode does not, by itself, mean that there is effective competition. There must be "considerable competitive pressures" resulting from handling of a "meaningful portion" of the total volume for there to be effective intermodal competition.

DuPont (Plastics), slip op. at 7 (citing Aluminum, 367 I.C.C. at 483-84).

Thus, NS cannot simply make its case by quoting the Aluminum principle; it must make a similar factual showing that there is a trend away from rail to trucks for the issue commodities, or some equivalent showing that, despite the low truck volumes in the issue lanes, trucks exert "considerable competitive pressures" resulting from handling a "meaningful portion" of the issue commodities. Because NS has not attempted to make that showing in order to justify applying the Aluminum principle to any of the issue traffic, it has not rebutted DuPont's evidence that trucks have transported only very small volumes, if any, of the issue movements.

It also would be absurd to apply the Aluminum holding to individual movements, as NS attempts to do throughout its Reply Evidence.[8] Indeed, that is not even how the ICC applied this holding in the Aluminum decision. This would require the Board to determine for each issue movement how many rail cars it would be necessary to convert to trucks in order to exert effective competition. This is particularly illogical for carload traffic, which typically moves in smaller volumes. For example, as illustrated by NS Reply Exhibit II-B-5, most of the contested

[8] See supra note 7.

issue movements average fewer than a hundred rail cars per year and many are under 30 cars Diverting only a portion of the rail volumes on a single lane to trucks would be an insignificant loss of traffic to NS Indeed, diverting even 100% of the carloads on the smallest volume lanes would be insignificant Only by aggregating its issue movement volumes and diverting nearly all of it to trucks can carload shippers, like DuPont, even hope to threaten enough rail volume to get a railroad's attention But such aggregated volumes pose the very costly infrastructure problems that DuPont has identified in its evidence when there is inadequate capacity to convert so much rail traffic to trucks. See Dup. Op. Narr I-29 to -38.

A simple example illustrates this problem Assume that truck and rail rates to transport the same volume of a commodity are equal and that trucks are a physically viable alternative. Also, assume that there are 10 issue movements that share truck loading facilities at the same origin and that the annual volume of each movement is 10 rail cars, for a total of 100 rail cars. Furthermore, assume that there is sufficient capacity at the origin to convert just 10 of these rail cars to trucks annually and that the expansion of that capacity is not cost-effective. An individual lane analysis would conclude that there is adequate truck loading capacity to handle 100% of the volume in each lane by truck. But in the aggregate, there really is only sufficient capacity to convert 10% of the total rail volume to trucks. The loss of volume on any single lane will not exert competitive pressure on NS as to the other lanes, and may in fact be too small to exert competitive pressure even on the one lane that can be converted to trucks Moreover, the Board would have to arbitrarily choose which of the ten issue movements are subject to effective truck competition and which are not. DuPont submits that, in this situation, the Board cannot find that any of the issue movements have an effective competitive alternative to rail

Therefore, NS cannot rely upon Aluminum to dismiss DuPont's infrastructure costs for increased trucking by claiming that each issue movement individually can easily be converted to trucks without acquiring additional infrastructure E.g., NS Reply II-B-101 (making the general argument and urging the Board to apply that principle whenever DuPont has asserted the need for additional infrastructure) Furthermore, it is essential that the Board consider DuPont's ability to exert "considerable competitive pressures" resulting from handling a "meaningful portion" of the issue commodities in the aggregate, not on a lane-by-lane basis

c. Trucks compete for short distance hauls, low volumes, expedited shipments, and when there is no rail service.

Throughout its Reply Evidence, NS echoes the theme that, if DuPont ever used trucks for an issue commodity or issue movement, regardless how infrequent or under what circumstances, the only other relevant factor is the truck rate relative to the challenged rail rate NS then proceeds to identify instances where DuPont has used trucks for an issue movement, or if there is no such truck history, for the same issue commodity. This position ignores all of DuPont's evidence of the limited role that trucks have in transporting the issue commodities.

DuPont has acknowledged a role for trucks in the transportation of many, although not all, of the issue commodities. DuPont submitted a detailed 5-year history of every bulk truck shipment it has made of an issue commodity in its Opening Evidence. However, DuPont also presented specific evidence as to why trucks are not effective competitors for each of the issue movements Fundamentally, DuPont has explained that the role of trucks in transporting the issue commodities is limited to four scenarios: (1) to serve customers without rail access; (2) to serve customers within a few hundred miles; (3) to deliver orders for volumes that are less than the capacity of a rail car, and (4) to provide expedited service to rail customers when necessary

1) NS emphasizes DuPont's truck shipment history without considering whether the circumstances of those shipments are comparable to the issue movements.

NS grossly misrepresents the competitiveness of trucks by focusing primarily upon the absolute number of trucks that DuPont has used for some of the issue commodities in the past, without any consideration of the circumstances of those truck shipments It is not enough for NS simply to count the number of times DuPont has used trucks to transport the issue commodity in order to demonstrate the competitiveness of trucks; NS must demonstrate that such usage occurred in circumstances similar to the issue movements and where rail transportation was also an option. Market Dominance Determinations, 365 I.C.C at 133

The NS truck shipment evidence is misleading at best. At page II-B-23, Table II-B-1 of NS's Reply, NS shows the number of DuPont truck shipments by commodity over the 5-year period from 2006-10. The total truck count is overstated by 14 4% due to errors in the NS truck counts for various commodities [9] When aggregated over 5 years, the absolute number of trucks may seem significant, but most of the truck shipments are small when averaged across all 5 years More importantly, NS makes no attempt to break down those truck shipments by distance, the volumes shipped to or from individual locations, or the rail accessibility of the origins and destinations

Instead, NS asserts that "[t]rucks have several advantages over rail transportation that enable them to compete effectively" for the issue movements. NS Reply II-B-24 The only two

[9] The corrected truck counts are as follows Aniline oil, {{ }}; Difluoroethane {{ }}; Dimethyl Ether {{ }}, Dimethyl Formamide {{ }}, Dimethyl Sulfate {{ }}, Flammable Waste, {{ }}, Glycolic Acid {{ }}, Lime {{ }}; Methylamine Anhydrous {{ }}, Methylamine Aqueous {{ }}, Monomethyl Formamide {{ }}, Oleum {{ }}, Petroleum Coke {{ }}, Polyethylene {{ }}, Propanediol Bio {{ }}, Sodium Caustic {{ }}; Sodium Methylate {{ }}, Spent Sulfuric Acid {{ }}, Sulfuric Acid, {{ }}; Sulfur Trioxide, {{ }}, Titanium Dioxide {{ }}; Titanium Tetrachloride {{ }}, and Zircon Sand, {{ }}. For each of these commodities, NS only should have counted records with the "Bill Type" of "Linehaul," and omitted duplicate records, by document number and bill type Also, for Lime, only shipments originating at Danville were of the same type of Lime as the issue movement, which moves in completely different equipment due to product integrity issues See Dup Op, Narr II-B-98

alleged advantages of trucks over rail, however, are speed and reduced loading and unloading costs Although speed is a definite advantage, DuPont already uses trucks when time is of the essence. The issue movements are not movements that require faster service than rail When faster service is essential. trucks and rail do not compete, because rail would never even be considered Therefore, the speed advantage of trucks is an immaterial consideration in the market dominance determination for the issue movements

The second alleged advantage of trucks, reduced loading and unloading costs, is a phantom. The alleged advantage can exist only if the truck driver performs all the loading and unloading, instead of an employee of the shipper and receiver. But, NS itself acknowledges that truck driver loading and unloading is not common for hazardous materials Id Furthermore. NS assumes that truck drivers will be allowed free range through origin and destination facilities without any supervision. Finally. even for non-hazmat shipments, NS ignores the additional work for the truck receiver associated with four times as many trucks. the need to schedule truck loadings and deliveries, and the need to make preparations to load and unload a truck immediately upon arrival, as opposed to a rail car that does not need to be scheduled and can be loaded and unloaded at the convenience of the shipper or receiver

NS also inappropriately dismisses DuPont's concern that 4-5 trucks per rail car means 4-5 times more risk of an accidental release of a hazardous commodity. NS Reply II-B-30. NS goes so far as to suggest that the rail cars are more dangerous because of their higher volumes But NS ignores the fact that trucks travel through more major population centers than railroads and over the same roads and highways as ordinary citizens and many other vehicles that are separately controlled and operated. NS also ignores the fact that most releases of hazardous materials occur during hook-ups for loading and unloading, not during the transportation itself,

and that trucks require 4-5 times more hook-ups at both the origin and destination.[10] Furthermore, NS contends that a marginal increase in loadings and unloadings for small volume rail movements is insignificant. But that argument ignores the forest for the trees by failing to consider the aggregate impact upon safety and risk.[11] Finally, NS suggests that the best test of how much risk DuPont is willing to tolerate is the number of trucks that DuPont has shipped in the past. DuPont submits, instead, that the relevant question is how many trucks DuPont has shipped to rail-served customers under circumstances similar to the issue movements. The answer will be far fewer than the total truck count presented by NS

Finally, NS faults DuPont's analysis of the 2007 Commodity Flow Survey ("CFS"), at pages I-10 to -12 of DuPont's Opening Evidence, because the 59 mile average distance of hazardous materials shipments in the CFS is distorted by the fact that over 70% of the hazardous material truck shipments in the CFS is comprised of gasoline, diesel, and fuel oil movements, which average less than 43 miles. NS Reply II-B-25 to -29. But NS attributes a meaning to this data that DuPont never intended. Specifically, NS accuses DuPont of claiming that trucking hazardous materials at distances beyond the CFS average is not competitive. Id. at II-B-29. But, DuPont never asserted that trucks could only compete for the issue movements at the average CFS distance of 59 miles for hazardous materials. Rather, DuPont referenced the CFS to make the following two points: "(1) trucks compete with rail almost exclusively at distances of just a few hundred miles, and (2) shippers attempt to minimize truck shipments of hazardous materials over long distances." Dup. Op. Narr. I-11. If the Board considers only the "Basic Chemicals"

[10] See Hazardous Materials: Cargo Tank Motor Vehicle Loading and Unloading Operations, 76 Fed. Reg. 13,313 (proposed March 11, 2011) (to be codified at 49 C.F.R. pts. 172, 177), which is a rulemaking prompted by concerns over the number of hazardous material incidents caused by human error and equipment failures during motor carrier cargo tank loading and unloading operations.

[11] This argument suffers from the same flawed logic that NS uses to contend that there is adequate truck capacity to handle small volume movements individually even if there is insufficient capacity in the aggregate because a competing mode need not be capable of handling all of the issue traffic. See Part I.A.2.b.(3), above.

category in the CFS, which excludes gasoline, diesel, and fuel oil, the average truck shipment is only 129 miles compared to an average rail shipment of 842 miles [12] This is consistent with DuPont's statements in its Opening Evidence that trucks compete with rail primarily at distances of just a few hundred miles.

2) NS incorrectly asserts that DuPont's leverage over motor carriers is evidence of effective competition.

At pages II-B-34 to -40 of its Reply Evidence, NS rolls off a string of allegations about DuPont's ability to use trucks without connecting those allegations to any relevant market dominance standards. All that these allegations show are that DuPont has contracts with multiple motor carriers, DuPont controls a large volume of business, and DuPont owns some of its own truck equipment From these facts, NS argues that DuPont possesses market power over motor carriers that it uses to leverage favorable contract rates and terms Even if this were true, which it is not, DuPont's leverage over motor carriers would reveal absolutely nothing about the market dominance of NS over the issue movements

NS's suggestion that DuPont exercises market power over motor carriers is a red-herring Although DuPont is a large shipper, it is only one of many large and small shippers that purchase truck transportation. DuPont's size and traffic volumes may allow it to obtain favorable contract rates and terms because its business is highly attractive and multiple motor carriers compete for its business. That is very unlike the market dominance that NS possesses because NS is the only rail option. No other rail carriers or trucks compete for most of DuPont's rail business handled by NS

[12] NS Reply WP "2007 Commodity Flow Survey," Table 7, p 25 Although the CFS breaks out truck shipments into "For-Hire" and "Private" categories, DuPont submits that the Board should not limit its review of the CFS to just "For-Hire" shipments, because NS itself relies extensively upon DuPont s private carrier, Sentinel, for a third (e.g., 27 of 82) of the direct truck alternatives in NS Reply Exhibit II-B-2

Even if DuPont possesses substantial leverage over motor carriers as NS claims, that does not translate into leverage over NS for the issue movements. DuPont's rail contracts do not contain any of the so-called "favorable terms" that NS claims DuPont has secured in virtually every motor carrier contract. NS Reply II-B-35. Unlike trucks, rail carriers do not bid on DuPont's business, and DuPont certainly does not receive "multiple competitive responses" for the issue movements Id. at II-B-36 If trucks truly were a direct competitor of NS, one would expect NS to be bidding on the same traffic as trucks at the same time, and for DuPont's rail contracts to have many of the same "favorable" terms as its truck contracts. This does not occur because trucks and rail do not compete in the same spheres.

Trucks compete primarily with each other to handle shipments that would not otherwise move by rail For example, most of DuPont's truck traffic is to or from locations without rail service A smaller subset of DuPont's truck traffic is for expedited movements to rail customers, which is a scenario in which rail would not even be considered. In addition, less than rail car volumes would be trucked to rail customers, because rail once again would not even be considered In these scenarios, the existence of multiple truck competitors in a highly-contestable marketplace explains why DuPont may obtain favorable truck contract terms. The fact that DuPont cannot obtain similar terms in its rail contracts is indicative of the fact that rail and trucks do not compete for the same traffic.

The truck and rail spheres overlap in only one small area DuPont might consider truck as a competitive alternative to rail for distances of a few hundred miles. Even in those limited situations, however, other factors such as customer/supplier requirements, hazardous characteristics, product integrity, infrastructure requirements, and capacity constraints often limit the ability of trucks to compete against rail In fact, truck capacity and infrastructure are major

concerns because DuPont cannot convert rail volumes to truck if that would displace truck service to customers without rail access.

NS's arguments ultimately prove too much. At page II-B-36, NS asserts, "[t]he fact that DuPont was able to secure these [favorable contract] conditions [from motor carriers] demonstrates the significant leverage that it has in the transportation marketplace, and the fact that motor carriers agreed to them demonstrates their interest in obtaining a share of DuPont's business." If this is truly a standard of market dominance that NS seeks to invoke, then it should concede the issue right now, because the fact that NS has not agreed to any of these "favorable" contract conditions must demonstrate its lack of interest in obtaining a share of DuPont's business. According to NS itself, "[e]ffective competition for a firm providing a good or service means that there must be pressures on that firm to perform up to standards and at reasonable prices, or lose desirable business." NS Reply II-B-19, quoting Market Dominance Determinations at 129 (underline added). Applying its own logic, NS must not find DuPont's business to be very desirable because it will not agree to the same contract terms as the motor carriers with which it allegedly competes

Another objective of NS's focus upon DuPont's ability to use trucks appears to be to show that there is "ample" truck capacity to handle the issue movements. NS Reply II-B-34, -40 (using the term "ample supply" of trucks in the opening and closing paragraphs of the section). Although NS presents evidence of the absolute number of trucks and trailers that DuPont and various commercial carriers allegedly possess, that evidence says nothing about whether that number is "ample" for the volume of rail business that DuPont would have to convert to trucks. In fact, one of NS's own workpapers shows truck utilization at 95% and forecasts a climb to

100%, while also forecasting driver shortages "[13] Although capacity is a legitimate concern with shifting rail volumes to truck, DuPont has chosen not to argue over truck capacity for most of the issue movements. Where DuPont has made truck capacity an issue, it discusses the facts by individual commodity in Part II B 2

Finally, NS may be trying to contend that the alternative truck rates that it alleges DuPont can receive for many of the issue movements, in Part II.B 2 d of its Reply Evidence, are the product of DuPont leverage rather than NS market dominance The fact of the matter, however, is that those truck rates only recently fell below the rail rates after NS imposed substantial double- and triple-digit rate increases over a very short two year period from 2009-11 [14] Whatever leverage DuPont possesses over motor carriers, based on the facts alleged by NS, DuPont also possessed before these NS rate increases Therefore, that leverage cannot explain why there are so many issue movements with alternative truck rates that are lower than rail rates, even at distances above 500 miles, only after the NS rate increases. The explanation lies solely in the market dominance of NS.

d. NS's own evidence confirms the limits of truck transportation.

At pages II-B-31 to -33 of its Reply Evidence, NS presents examples from its experiences that supposedly demonstrate the effectiveness of truck competition. Those examples are scant, inapposite, and/or actually confirm DuPont's arguments about the limits of truck competition.

NS first offers evidence that it regularly considers truck competition when setting rates for truckable commodities. Id. at II-B-32 The NS evidence is based upon two documents to show that NS monitors truck rates. But the fact that NS monitors truck rates also would be expected of a railroad that is trying to set prices to match the rates of a higher cost competitor.

[13] NS Reply WP "FTR Trucking information pdf" (see pages 1 and 3 of the FTR Freight Focus Trucking Update)

[14] See Dup Op Ex II-B-3

The two documents provided by NS suggest that NS is in fact trying to do just that {{[redacted]}} The FTR trucking industry report attached to that e-mail is of greater interest, because the graph of "Truckload Rates" shows declining truck rates through the second half of 2009. Indeed, all of the graphs in the FTR report show negative year-over-year changes for 2009 This was around the time that NS was imposing substantial double- and triple-digit rate increases upon most of the issue movements That is inconsistent with true competition, where competitors must respond to both rate increases and decreases

Another pertinent factor concerning the foregoing documents is their scarcity. Neither document was produced to DuPont in discovery because both are dated after the close of discovery However, if truck competition is "regularly considered" by NS, as it claims, one would expect NS to have produced similar documents for the multi-year period covered by discovery It did not.[15] This dearth of evidence seriously undermines NS's assertion

On page II-B-33, NS describes three examples of shippers using trucking options as negotiating leverage. None of these examples is supported by any documentation, pertains to any of the issue commodities, or contains sufficient details to compare with the issue movements. {{[redacted]}}. DuPont already has stated that, for expedited shipments, truck will always prevail over rail regardless of the rate The {{[redacted]}} example lacks

[15] NS produced only a handful of e-mails concerning trucking, but these e-mails discuss only {{[redacted]}} truck shipments, which do not involve an issue commodity, and whether one {{[redacted]}} buyer would be open to receiving truck shipments from its supplier

any information, except that the customer threatened to use trucks. Without more, such as whether NS won or lost the business, the significance of this example is lost. {{[redacted]}} If this is the best evidence of truck competition that NS can offer, it falls far short of demonstrating effective competition for the issue movements

Although NS does document one example of it responding to truck competition for a shipment of caustic soda, which is an issue commodity, that example reinforces DuPont's argument that trucks are directly competitive with rail primarily at short distances NS Reply II-B-33 {{[redacted]}}.

The last example provided by NS concerns one of the issue movements, and has all the signs of NS attempting to create evidence for this case. {{[redacted]}}

[16] See Dup Op Exs II-B-1 and -3

This NS example, however, does not end with the conversion of this lane to trucks {{[redacted]}}[18] This has all the ingredients of NS manipulating the facts to create evidence for this case.

At best, NS has presented very meager examples of truck competition. To the extent they show much of anything, they are consistent with DuPont's claims that trucks are mostly competitive over short distances and for expedited movements. The most significant example of truck competition presented by NS is suspect, as having been created for this litigation, because of the timing and circumstances surrounding it. In short, contrary to NS's claims, these examples hardly demonstrate that trucks effectively compete with rail for any of the issue commodities.

[17] {{[redacted]}}

[18] {{[redacted]}}

e. The magnitude of NS rate increases over just two years, from 2009 to 2011, exemplifies its market dominance.

NS does not dispute the magnitude of its recent rate increases for the issue movements, as presented in DuPont Opening Exhibit II-B-3 Rather, NS attempts to justify those enormous rate increases as market-based adjustments that occurred upon the expiration of a below-market legacy contract NS Reply II-B-92 Specifically, NS offers the following justifications for its large rate increases:

1 {[redacted]} Id. at II-B-92 to -93.

2 During the term of the expired contract, trucking costs increased significantly Id. at II-B-93.

3. Tariff rates are higher than contract rates because "contracts offer valuable certainty to both railroads and shippers " Id.

Each of these arguments is exaggerated and cannot explain or justify the magnitude of the NS rate increases.

First, in Rebuttal Exhibit II-B-1, DuPont debunks NS's unsupported allegation that its rate increases merely reflected a "market" adjustment upon expiration of a legacy contract {[redacted]}. During the term of the expired contract, {[redacted]}[19] The NS URCS Phase III weighted average cost for the contested issue traffic during this same period increased by {[redacted]}.[20] Moreover, much of that increase is attributable to the acquisition premium that NS paid to acquire its portion of Conrail, not to any increase in actual costs.[21] But even including the Conrail acquisition premium, {[redacted]} lagged the

[19] Dup Reb. Ex II-B-1, at 1.

[20] Dup Reb Ex II-B-1, Attachment 1, column (8)

[21] Dup Reb Ex. II-B-1, at 2

NS cost increases by just {[redacted]} on average,[22] which hardly justifies the high double- and triple-digit rate increases imposed upon most of the issue movements. Exhibit II-B-1 also presents this evidence for each issue commodity. In Part II B.2, DuPont discusses this evidence, in the context of each individual commodity, where the NS rate increases from 2009-11 far exceeded the portion of NS's cost increases {[redacted]}

Second, DuPont also had legacy contracts with other Class I railroads for the joint line issue movements in Complaint Exhibit B that paralleled the term of the NS legacy contract. As DuPont Opening Exhibit II-B-5 shows, {{[redacted]}}.[23] Therefore, NS's attempt to justify its rate increases based upon the expired legacy contract simply does not hold water.

Third, NS's attempt to justify its rate increases on the basis of a rise in marginal trucking costs during the legacy contract term also is not credible. For starters, the NS focus on trucking costs is a red-herring. Increasing rail rates to match the rates of a higher cost alternative is evidence only of an "outer limit" constraint, not of an effective competitive constraint. DuPont (Plastics), STB Docket No. 42099, slip. op. at 7-8. Thus, the relevance of trucking cost changes is dubious at best. At worst, NS's attempt to justify its rate increases on the basis of trucking costs is compelling evidence that NS is setting rates to match those of higher-cost trucking

[22] Dup. Reb. Ex. II-B-1, Attachment, column (9)

[23] {{[redacted]}}

alternatives, which is tantamount to a confession of market dominance. Furthermore, even accepting as both relevant and accurate NS's evidence that trucking costs increased by 63% between 1996 and 2011, that rate of increase would have exceeded the legacy contract escalator by no more than {[redacted]}, which doesn't come close to the rate increases imposed by NS upon most of the issue movements, from 2009-11, after the contract expired

Fourth, NS's contention that DuPont's contract rates {[redacted]} is not supported by any evidence [24] In response to DuPont's request for any work papers to support this claim, NS produced only a spreadsheet to show the difference between {[redacted]}[25] That spreadsheet says nothing about other rates in the chemical transportation market. Rather, it is simply a reiteration of the same issue that DuPont already has refuted in the first point above Moreover, NS likely has exercised the same market power over most other chemical shippers.

Fifth, the greater certainty provided by contracts over tariffs cannot explain the magnitude of the NS rate increases. This is especially true when the issue traffic is captive to rail because even a contract volume commitment has little value when the commodity otherwise would move by rail anyway {[redacted]} [26] Although NS had the ability to identify differences between the expired legacy contract and the tariff to justify the higher tariff rates, it summarily referred only to "{[redacted]}." This

[24] NS Reply II-B-93

[25] See {[redacted]}

[26] See Dup Reb WP folder "NS Contract Volume Commitment"

meager assertion falls far short of attributing its substantial rate increases to anything other than market dominance.

Thus, although NS offers a host of reasons to justify its enormous double- and triple-digit rate increases over just a brief two year period from 2009-2011, those reasons either are not credible or they do not come close to justifying the magnitude of the NS rate increases. Rather, those increases are emblematic of NS's market dominance because they demonstrate the ability of NS to significantly increase its rates without a loss of the issue traffic

f. Customer and supplier requirements for rail service preclude the use of alternatives to rail transportation.

At pages I-47 to -40 of its Opening Evidence, DuPont summarized both the legal argument and facts for finding market dominance over issue movements where DuPont's customer or supplier requires rail transportation Although NS does not take issue with the legal precedent, it claims that DuPont's evidence is inadequate to establish market dominance. NS Reply II-B-98 to -100 The NS arguments are unconvincing and inaccurate.

First, NS claims that DuPont has presented evidence of customer requirements for only a handful of issue movements and that "NS is not challenging...market dominance on any lane where [DuPont] demonstrated a true customer requirement for rail deliveries." Id. at II-B-98 Although NS does not explicitly state why the DuPont evidence in other lanes is inadequate, the reason appears to be a lack of testimonial evidence from the customers and suppliers themselves NS completely ignores the fact that DuPont's own witnesses are people who engage directly with these customers and suppliers in the ordinary course of business and whose job it is to know exactly what are their needs NS's failure to give any credence to that testimony is particularly hypocritical because NS relies upon its company witnesses to identify "customer-specific requirements" in the development of dwell time estimates at customer locations as part of its

SAC evidence. See NS Reply III-C-233 Furthermore, numerous court and agency decisions have long-recognized the extensive use of rail cars for storage purposes.[27]

Second, NS improperly dismisses DuPont's evidence based upon customer and supplier contract requirements for rail delivery NS Reply II-B-99. NS attempts to create an exception for contracts that may have a short duration, are on the verge of expiring, or can be terminated on short notice. But all contracts eventually expire, including those contracts in Board precedent finding contract requirements to be relevant evidence of market dominance. See, e.g., DuPont (Nitrobenzene), STB Docket No. 42101, slip op. at 6 (served June 30,2008); Dayton P&L, 1 I.C C 2d at 382 NS also incorrectly assumes that DuPont unilaterally can change the rail requirements once its current contracts expire Just because NS can unilaterally impose contract terms on its customers does not mean that DuPont has the same ability.

Third, NS accuses DuPont of exaggerating the importance of its contract requirements because many of the contracts with rail requirements also reference truck shipments NS Reply II-B-99 to -100. But, DuPont never alleged that the contracts absolutely forbade truck shipments under all circumstances. Such a prohibition would be foolish and impractical because exceptions are needed for a variety of circumstances. DuPont explicitly acknowledged and explained the purpose of truck references where they exist in a contract [28] Furthermore, all of the contracts that NS cites as referencing both trucks and rail pertain solely to issue movements of a single commodity, anhydrous methylamines, which DuPont itself identified and explained at pages II-

[27] E.g., Turner, Dennis & Lowry Lumber Co. v. Chi., Milwaukee & St. Paul Ry., 271 U S 259, 262 (1926) (recognizing that rail cars are sometimes employed "as a place of storage, either at destination or at reconsignment points"), Ill. Cent. R.R. v. Tex. E. Transmission Corp., 533 F 2d 272, 274 (5th Cir. 1976) (stating that rail cars may be used "for storage after the shipment has reached a destination"), Car Serv. Compensation – Basic Per Diem Charges, 358 ICC 716, 762 (1977) (Railroad parties contend that "[p]rivate cars spend much of their time being used for storage rather than movement") Joint Line Cancellation on Soda Ash by Union Pac. R.R., 365 ICC 951, 959 (1982) (UP states that "private cars are often used for storage at destination.") Allied Corp. v. Union Pac. R.R., 1 ICC2d 480, 481 (1985) (noting that private car ownership "offers several advantages," including storage); S. Pac. Transp. Co. – Exemption – Waiver of Undercharges, ICC Docket No 40201, 1989 MCC Lexis 204 (April 10, 1989) (railroad contract amended "to permit storage of the commodity in rail cars on leased track at the destination")

[28] E.g., Dup Op Narr. II-B-111 to -112 (AHMs), -159 (Titanium Dioxide)

B-111 to -112 of its Opening Evidence Contracts also may cover more than one location, some of which do not have rail access Finally, the small volume of trucks on nearly every lane with a contract rail requirement is consistent with that requirement.[29] NS makes no attempt to rebut the foregoing evidence

Fourth, NS claims that its most compelling evidence is the fact that customers who require rail delivery in their contracts actually have received deliveries via truck. NS Reply II-B-100. But that fact is not so compelling given that customers need trucks for expedited deliveries and when they do not have rail access DuPont's opening evidence notes many instances where DuPont had to use trucks for expedited transportation.[30] DuPont also noted that certain customer facilities use a commodity in different areas of a large facility, only one of which has rail access.[31] In addition, throughout its opening evidence, DuPont refers to the low number of trucks in the issue lanes where there is a contract requirement or a customer need for rail transportation.

Finally, of particular note, the NS truck count for every single issue movement referenced on page II-B-100 is grossly overstated As discussed in Parts II.B.2.1 and r. of this Rebuttal, a mistake in how NS counted anhydrous methylamine and titanium dioxide truck shipments caused it to over count the number of truck shipments made by DuPont. Instead of {{ }} trucks in Lane {{ }} in 2010 and 2011, as counted by NS, there were only {{ }} trucks[32] Instead of {{ }} truck shipments of titanium dioxide on Lanes {{ }}, respectively, there were only {{ }} truck shipments across the entire 5 year

[29] See Dup Op. Narr I-47 to -50 (summarizing the truck volumes for each lane in which DuPont contends that a customer or supplier requires rail transportation)

[30] E.g., Dup Op Narr II-B-40, -99, -150 and -171

[31] E.g., Dup Op Narr II-B-61, -111, and -159

[32] These truck shipments do involved dimethylamine anhydrous, which is not the same type of methylamine that moves on this case lane. See supra p II-B-97 note 218

period of data from 2006-11 [33] When averaged over five years, these are hardly the extraordinary numbers that NS would have the Board believe

g. The Board must apply its DMIR holding to this case.

At pages I-12 to 14 of its Opening Evidence, DuPont asserted that alternative transportation for the joint line issue movements must be between the origin or destination served by NS and the interchange point with the connecting carrier based upon the statute and precedent in the DMIR[34] and Bottleneck[35] decisions NS raises three main points in opposition to this argument: the governing statutes,[36] the real-world impact of competition,[37] and prior agency decisions.[38] Even a moderate level of scrutiny, however, reveals that NS's position must be rejected [39]

1) The statute requires the Board to consider whether effective competition exists for the transportation to which the challenged rate applies.

The first NS argument is that DuPont has misread the statute and that the statute actually supports NS's position. But, NS has selectively quoted from the statute and legislative history to reach this conclusion and disregards the clear statements of Congressional intent and Board precedent.

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[33] Most of those truck shipments occurred during a plant shutdown at Edgemoor in 2010, and the customer in Lane {{[redacted]}} also is one that can receive only trucks at one portion of its facility Dup Op Narr I-49

[34] Minn. Power, Inc. v. Duluth, Missabe & Iron Range Ry., 4 S.T.B. 64 (1999) ("DMIR I"), reconsideration decision at 4 S.T.B. 288 (1999) ("DMIR II")

[35] Cent. Power & Light Co. v. S. Pac. Transp., 1 S.T.B. 1059 (1996) ("Bottleneck I"), clarified at 2 S.T.B. 235 (1997) ("Bottleneck II"), aff'd sub nom. MidAmerican Energy Co. v. STB, 169 F.3d 1099 (8th Cir. 1999)

[36] See NS Reply II-B-59, -62, and -67 to -75

[37] See NS Reply II-B-60 to -67, and -72

[38] See NS Reply II-62 and -75 to -90.

[39] Nevertheless, recognizing the highly contentious nature of this issue, DuPont presented evidence of market dominance based upon both the bottleneck segment and the through routing of joint line movements See Dup. Op. Narr. I-16 n.20, I-19 n.24

a) NS selectively quotes from the statute and legislative history.

NS claims that its position is supported by the governing statutes. Specifically, NS notes that 49 U.S.C § 10707(b) uses the word "shall" in reference to intermodal competition See, e.g., NS Reply II-B-59, -68 From this observation, NS makes the uncontroversial assertion that "the Board must make a jurisdictional market dominance finding for every rate challenge .. " Id. at 68 (underline in original) DuPont, however, has not argued that the Board need not make a market dominance determination for any issue movement; rather, the pertinent question is whether that determination should be made for the "whole-route" through rail movement or just the bottleneck segment covered by the challenged rate. NS's over-zealous focus on the word "shall" in its statutory quotations ignores a crucial point: simply considering whether effective intermodal competition exists is distinctly different from finding that such competition actually exists DuPont agrees that a proper market dominance evaluation involves determining whether effective intermodal competition exists, and this is exactly what DuPont has done for every issue movement

NS incorrectly asserts that DuPont believes "the Board is not allowed to consider any competitive alternative for a Rule 11 rate that does not deliver the commodity in a railcar at the precise point where NS would interchange the traffic in rail service " NS Reply II-B-67 (underline in original). NS does not cite to the DuPont Opening for this assertion because DuPont made no such statement. DuPont's Opening Evidence reveals that DuPont evaluated whether effective intermodal competition exists for every lane. Where the NS transportation covered by the challenged rate ends or begins at an interchange with another railroad, DuPont searched for transload locations at or within a reasonable distance of the interchange For several such lanes that begin or end at an interchange, DuPont found possible transload locations at or

near the interchange and evaluated the competitive effectiveness of those alternatives to the challenged NS transportation. See, e.g., Dup. Op. Narr. II-B-49 (Lanes B-99 and B-100), II-B-54 to -55 (Lane B-125), II-B-89 to -91 (Lanes B-9 and B-29).

Moreover, even when there are no existing facilities to complete the alternative transportation at the issue movement origin or destination, the defendant railroad is always free to propose construction of additional infrastructure to facilitate claimed effective transportation alternatives. The use of newly-constructed infrastructure could provide effective competition to a challenged tariff that covers transportation starting or ending at an interchange or transfer to another mode of transportation. As the Board well knows, proposal of new infrastructure is not unusual in market dominance determinations. See, e.g., FMC, 4 S.T.B. at 715 (defendant UP proposed pipeline construction); West Texas Utilities, 1 S.T.B. at 650-651 (defendant BN proposed rail line construction to competing railroad); Seminole Elec. Coop. v. CSX Transp., Inc., S.T.B. Docket No. 42110 (at pages II-24 to -50 of its Reply Evidence filed January 19, 2010, defendant CSXT proposed replacing rail service with combined rail, ocean barge, river barge, and conveyor belt transportation, which would require construction of new barge unloading facility, conveyor belt, and floating crane.). There was nothing preventing NS from making a similar effort for DuPont's traffic. Cf. DMIR II, 4 S.T.B. at 293 (rejecting railroad's assertion that the Board foreclosed the possibility of effective competition, and stating that the railroad "is not foreclosed from attempting to show that potential motor carrier competition from Keenan to Laskin effectively constrains the rate at issue")

In support of its position, NS has selectively quoted from the market dominance statute, ignoring use of the word "whether" and other key parts of the statute. See, e.g., NS Reply II-B-67 to -68. The full first sentence of 49 U.S.C. § 10707(b) reads.

> When a rate for transportation by a rail carrier providing transportation subject to the jurisdiction of the Board under this part is challenged as being unreasonably high, the Board shall determine whether the rail carrier proposing the rate has market dominance over the transportation to which the rate applies.

Crucially, the sentence clearly is limited to "a rate" established by "a rail carrier providing transportation subject to the jurisdiction of the Board." Thus, the rate must be a tariff rate and the rail carrier must be providing common carriage service. When such a challenge is made, the Board then determines "whether" the rail carrier "proposing the rate"—meaning the tariff rate—has market dominance over "the transportation to which the rate applies"— meaning the tariff rate transportation

Where DuPont has challenged an NS tariff from Point A to Point B, and DuPont has a contract rate with another railroad from Point B to Point C, the "transportation" to which the NS rate "applies" is simply the Point A to B movement. The market dominance inquiry applies to the common carriage governed by the challenged tariff rate No other transportation can be inferred from the plain language of the statute. Given this lack of ambiguity, the Board must enforce the statute as written. "[I]n interpreting a statute a court should always turn to one cardinal canon before all others. We have stated time and again that courts must presume that a legislature says in a statute what it means and means in a statute what it says there." Conn. Nat'l Bank v. Germain, 503 U S. 249, 253-254 (1992) Thus, because the NS tariff does not apply to any other transportation, the market dominance analysis covers only the A-B movement

NS also ignores 49 U S C § 10701, which further supports DuPont's position The language of that statute reads:

> If the Board determines, under section 10707 of this title, that a rail carrier has market dominance over the transportation to which a particular rate applies, the rate established by such carrier for such transportation must be reasonable

49 U S.C. § 10701(d)(1). Again, the plain language of the statute makes clear that the term "transportation" in § 10701(d), just as in § 10707, applies to the service provided under the challenged tariff. No other transportation is mentioned or implied "Where the statute speaks to the direct question at issue, we afford no deference to the agency's interpretation of it and 'must give effect to the unambiguously expressed intent of Congress.'" North Carolina v. EPA, 531 F 3d 896, 906 (D.C. Cir. 2008) (internal citation omitted).

Finally, NS's position would create an unwarranted dichotomy between the Board's evaluation of quantitative and qualitative market dominance. Under 49 U S.C. § 10707(d)(1)(A), the Board is directed to find that the "carrier establishing the challenged rate" does not have market dominance over "the transportation to which the rate applies" if the carrier can prove that the challenged rate results in an R/VC percentage less than 180%. The phrase "the transportation to which the rate applies" is precisely the same language that Congress used in 49 U.S.C § 10707(b) to describe qualitative market dominance. If, as NS contends, this phrase refers to all possible movement of the commodity in any "whole-route" in which the challenged tariff plays a part, then the R/VC calculation would require evaluating the variable costs of non-party railroads, motor carriers, and any water carriers that a shipper might use in combination with a challenged rail rate. Of course, parties to rate cases do not calculate the quantitative market dominance in this way, revealing yet again that NS is incorrect in its effort to re-write the plain statutory language governing market dominance.

b) The Board must enforce the plain meaning of the statute.

The Board must enforce the plain meaning of the statute as written "It is elementary that the meaning of a statute must, in the first instance, be sought in the language in which the act is framed, and if that is plain, and if the law is within the constitutional authority of the law-making

body which passed it, the sole function of the courts is to enforce it according to its terms." Caminetti v. United States, 242 U.S. 470, 485 (1917). To interpret the statute in a way that ignores the plain meaning would be unreasonable. Shays v. FEC, 337 F.Supp 2d 28, 51 (D.C. Cir. 2004). See also Chevron USA, Inc. v. Natural Res. Def. Council, Inc., 467 U.S. 837, 843 (1984).

Even if the Board were to find some merit in one of NS's policy-oriented arguments, the Board must enforce the statute as written. "All the policy reasons in the world cannot justify reading a substantive provision out of a statute." North Carolina v. EPA, 531 F.3d 896, 910 (D.C. Cir. 2008). An agency cannot ignore a statute's plain language "simply because the agency thinks it leads to undesirable consequences in some applications." Friends of the Earth, Inc. v. EPA, 446 F.3d 140, 145 (D.C. Cir. 2006).

NS's response to the plain statutory language is two-fold. First, NS claims that its interpretation of market dominance is necessary because Congress did not define market dominance to be:

> competition from other rail carriers or modes of transportation for the transportation to which a rate applies and only for that transportation

NS Reply II-B-74 (emphasis in original). The folly of NS's position is obvious. Congress has already fully defined market dominance in § 10707(a), but NS wants Congress to add an extra phrase to simply say "and only this." Where a term is already defined, there is no need for the phrase proposed by NS, which could be used for every definition in every statute in the entire U.S. Code. If Congress had drafted the statute in accord with the NS proposal, then parties in unrelated disputes over other parts of the Interstate Commerce Act, and, indeed, the entire U.S. Code, could make similar arguments—contending that the definitions drafted by Congress are open to interpretation unless they have the magic language "and only this" appended at the end.

The Board should reject NS's attempt to inject a "magic language" requirement to definitions drafted by Congress.

Second, NS cites to the legislative history. NS Reply II-B-73. As an initial matter, resort to legislative history is unnecessary because the statutory language is abundantly clear "When the words of a statute are unambiguous, then ..'judicial inquiry is complete.'" Conn Nat'l Bank, 503 U.S. at 254 (internal citation omitted) See also Gatewood v Wash. Healthcare Corp., 933 F.2d 1037, 1040-1041 (D.C Cir. 1991) (enforcing plain language of statute despite uncertainty in legislative history).

Even considering the legislative history, however, reveals that NS presents partial quotations in a highly misleading manner NS claims that the original market dominance definition was simply "the absence of effective competition", and that the phrase "transportation to which a rate applies" was added to the statute only as clarifying language "to mak|e| clear that it is the proponent carrier or carriers proposing the rate that must have market dominance." NS Reply II-B-73. NS claims this language cannot be interpreted to limit the market dominance analysis to alternatives only for the challenged tariff transportation.

A closer look at the cited materials reveals that this legislative history actually undercuts NS's argument The original market dominance definition was not simply "the absence of effective competition", but, instead, the following:

> "Market dominance" means with respect to a carrier subject to this Act, the ability to charge as a consequence of the absence of effective competition, from the carriers or from other modes of transportation, a rate that unreasonably exceeds the cost of providing the service involved

Special Procedures for Making Findings of Market Dominance as Required by the Railroad Revitalization Act and Regulatory Reform Act of 1976. 353 ICC 873, 941 (1976). This early draft confirms that, contrary to the inference suggested by the NS Reply, Congress only intended

the market dominance inquiry to apply to the transportation covered by the tariff rate being challenged Market dominance was defined in this draft as being the ability of "a carrier subject to this Act" to charge "a rate that unreasonably exceeds the cost of providing the service involved " The definition clearly does not encompass the "whole-route" rate, or the tariff rate in conjunction with other transportation providers participating, by contract, in a whole-route transportation movement. It is unequivocally limited to the ability of the defendant railroad to charge a rate unreasonably exceeding its costs for "the service involved."

NS also contends that the addition of the language "for the traffic to which a rate applies" was only intended "to mak[e] clear that it is the proponent carrier or carriers proposing the rate that must have market dominance." NS Reply II-B-73. Again, NS has omitted part of the relevant passage, which is:

> The Commerce Committee and the staff redrafted the market dominance provision into the form in which it appeared in section 103 of S 2718 reported by the Committee to the Senate on November 26, 1975 This version continued to reject the DOT concept of rate flexibility embodied in the no-suspend zone proposal, and responded to ICC concerns by defining market dominance in terms of "an absence of effective competition for the traffic to which a rate applies from other carriers or modes of transportation," and by making clear that it is the proponent carrier or carriers proposing the rate which must have market dominance

Special Procedures, 353 ICC at 942-943 (internal footnotes omitted) (emphasis added). In contrast to NS's contention, the phrase "for the traffic to which a rate applies" was added in response to unspecified "ICC concerns." Furthermore, some undefined aspect of the new definition was similarly intended to respond to a second ICC concern "by making clear that it is the proponent carrier or carriers proposing the rate which must have market dominance." The latter is not the reason for the former, as NS contends; they are separate responses to different ICC concerns.

One of the goals of Special Procedures was to define the relevant market for the purposes of the market dominance determination After reviewing comments from railroads, shippers, the Department of Justice, the Department of Transportation, and others, the ICC decided to focus on the part of the statute that defines market dominance as "an absence of effective competition from other carriers or modes of transportation for the traffic or movement to which the rate applies." 353 I C.C. at 904. The ICC concluded that.

> the appropriate market is the market for transportation services which directly compete with the service outlined in the tariff under consideration. Limiting consideration to direct carrier competition is consistent with the express language of the legislative definition, and is essential to making practical determinations in a short time period

353 I C.C. at 904. The ICC rejected numerous requests to consider a broader definition of the market at issue because the statute is limited to the "the traffic or movement to which the rate applies." Id.

In conclusion, the ICC stated.

> There is no language in the legislation which would warrant the extension of the phrase "the traffic or movement to which the rate applies" beyond transportation services which are comparable to that described in the issue tariff

Id. at 905. In short, NS's attempt to parse the statutory language and the legislative history necessarily fails, and even backfires, upon close inspection.

c) Segregation of market dominance and rate reasonableness is not supported by the statute.

The NS position would impermissibly separate the market dominance analysis from the rate reasonableness analysis, so that the market dominance phase would include the challenged rate in conjunction with any contract rates that might be used, while the rate reasonableness phase would include only the challenged rate. Segregating the analysis in this manner would

mean that different rates are the subject of the two main parts of a rate case, thus resulting in untold problems and complications.

The plain language of the governing statutes prohibits divorcing market dominance from rate reasonableness. Congress has plainly stated that, when the Board determines that "a rail carrier has market dominance over the transportation to which a particular rate applies", then the rate established "by such carrier for such transportation must be reasonable." 49 U.S.C § 10701(d)(1) (emphasis added). As clearly mandated in this language, the market dominance analysis and the rate reasonableness analysis must cover the same transportation. In other words, Congress does not allow the Board to evaluate market dominance for an A-to-C movement in order to determine if rate reasonableness jurisdiction exists over an A-to-B movement.

The Board has previously rejected the exact same segregation argument advanced here by NS. See DMIR II, 4 S.T.B. at 292 See also Atchison, Topeka & Santa Fe Ry. v. ICC, 580 F 2d 623, 634 (D C. Cir. 1978) ("As a matter of strict logic, the phrase 'for the traffic or movement to which a rate applies' would seem to exclude from consideration competition that manifests itself in the form of 'traffic' or 'movement' *other* than that to which the rate in question applies.") (emphasis original).

Not only is NS seeking to separate the market dominance and rate reasonableness portions of the case, but the NS position would require separation of qualitative market dominance from quantitative market dominance NS would have the Board evaluate qualitative market dominance on the basis of transportation involving a combination of the challenged tariff and separate contract movements, but NS would have the Board evaluate quantitative market dominance based only on the transportation under the challenged tariff See NS Reply Part II A and Reply Exhibit II-A-3 (calculating R/VC ratios for quantitative market dominance based only

on the transportation under the challenged tariff) There is no support in the statute or precedent for this type of divergent treatment of the two elements of market dominance

In fact, the quantitative market dominance provision in 49 U.S.C. § 10707(d)(1)(A) uses the same language ("transportation to which the rate applies") as the qualitative market dominance provision of 49 U S C. § 10707(a). Hence, qualitative market dominance should be evaluated for the same segment as quantitative market dominance. NS has not presented any rational basis for interpreting these two identical statutory phrases differently

d) The Board cannot consider the contract service and rate because they are outside its jurisdiction.

The Board does not have jurisdiction over rail transportation pursuant to a contract 49 U S.C. § 10709. Given that rail contracts are "beyond" the Board's "regulatory purview," the Board does not "consider the movement prior to the interchange point for rate complaint purposes." including evaluation of market dominance DMIR II, 4 S T B. at 293. See also Rail Transportation Contracts Under 49 U S.C 10709, S T B. Ex Parte 676, slip op at 2 (served Jan. 22, 2010) ("Congress expressly removed all matters and disputes arising from rail transportation contracts from the Board's jurisdiction in section 10709(c)"). This same jurisdictional bar forms the underpinnings of the Bottleneck doctrine, as described by the Board:

> Plainly we are without rate reasonableness jurisdiction over the rates of any rail transportation provided by contract. Regulation of the entire through route - even if the contract rate were simply treated as a given that cannot be changed - would indirectly result in review of the contract rate, and Congress has declared the rates for that portion of the through-route service to be beyond our reasonableness jurisdiction

Bottleneck I, 1 S T.B. at 1074. Therefore, the Board can only evaluate market dominance within the scope of its statutory jurisdiction, which does not include portions of a through movement that are under contract

NS attempts to avoid this holding by narrowly focusing upon just the issue of geographic competition;[40] but, the Bottleneck holdings are not predicated upon geographic competition Although the Board referred to "geographic competition" to support its conclusion in DMIR, it also cited to the Bottleneck decision in tandem. See DMIR, 4 S.T.B. at 292 ("The position advocated by DMIR is contrary to both our *Bottleneck* and *Product and Geographic II* decisions.") The Board also held that the governing statutes mandate this result Id Thus, the Board has clearly and unequivocally applied this jurisdictional limitation to its market dominance review See DMIR II, 4 S T B. at 292 n 13 ("For a separately challengeable bottleneck-segment rate, transportation alternatives between the 'same origin and destination points' (*Product and Geographic Competition II* at 10, 12) must necessarily refer to those between the interchange point at which the bottleneck carrier obtains the traffic and the point of delivery.")

2) NS's claims about the "real-world" impact of competition are based on hyperbole and ignore "real-world" implementation problems.

The second major point made by NS is that "real-world" evidence shows that whole-route alternatives act as effective competition for NS's bottleneck tariff rates. See NS Reply II-B-60 to -67, and -72. The various aspects of NS's "real-world" argument do not withstand scrutiny.

a) The NS position is contrary to precedent.

In an argument supported by its witness Mark Burton, NS asserts that, in the "real world", shippers are only concerned with "the ultimate total costs of transportation as a whole—

[40] See, e.g., NS Reply II-B-62 and 75-78

not the costs of individual segments." NS Reply II-B-66 (emphasis in original).[41] Consequently, according to NS, the market dominance inquiry should focus on the cost of the whole route, not the cost of the tariff rate being challenged NS Reply II-B-66 to -67. The NS position is contrary to precedent

As stated by the D.C Circuit

> The Great Northern holding—and the broader principle that the reasonableness of rates is to be assessed on a through basis—was based on an understanding that "[t]he shipper's only interest is that the charge shall be reasonable as a whole." This is no longer the case By permitting a shipper to enter into contracts that are beyond review of the Board, the Staggers Act entitles a contracting shipper to—as FMC puts it—"the benefit of its bargain." Were its position to prevail, Union Pacific would be in a position to recover for itself the "benefit" of FMC's bargain with CSX, as it could set a rate that allowed it to obtain the difference between a reasonable through rate and the FMC-CSX contract price

Union Pac. R.R. v. S T.B., 202 F.3d 337, 342 (D C. Cir 2000) (internal citations omitted; underline added) ("Union Pacific") The foregoing rationale applies equally to the market dominance and rate reasonableness portions of a bottleneck rate challenge.

Through its "whole-route" competition argument, NS seeks to immunize its rates from Board review whenever DuPont has successfully obtained a favorable contract for the transportation beyond the interchange point with NS In other words, NS seeks to raise its rates so that it recovers for itself the benefits obtained by DuPont This fact can be illustrated by a simple example. NS's basic market dominance position has been that market dominance cannot exist if (1) the alternative mode is physically feasible, and (2) the through rate of the alternative mode is no more than 20% greater than the through rail rate. Let's assume that the through rail rate from point A to C is $10,000, of which $5,000 is the challenged rate from point A to B and

[41] NS uses the term "costs" here, but, from the context, it appears that NS is actually referring to the transportation rates charged (which may be considered "costs" incurred by the shippers to engage in their businesses), not the costs of the carriers to provide the relevant transportation services

$5,000 is a contract rate from point B to C. Next, assume that a physically feasible direct truck alternative from point A to C is $12,000. Because the alternative rate is not greater than 20% of the through rail rate, NS would conclude that there is no market dominance. Although the through rate differential is 20%, NS could increase its rate by $2,000, or 40%, before a lower truck rate might threaten the loss of traffic [42] In other words, NS could take for itself at least a portion of the competitive bargain negotiated by DuPont in its bottleneck contracts by increasing its rate up to the point where the through rail rate appears to be competitive with the direct truck rate, thus immunizing its exercise of market power from challenge through the market dominance determination even before the Board can consider rate reasonableness

Similarly, if DuPont were to successfully obtain a reduction in its B-to-C contract rate from the afore-mentioned $5,000 per car to $3,000, then NS's position would enable NS to raise its tariff rate to $9,000 (which would raise the through rate up to the level of the $12,000 direct truck rate), and such a dramatic increase would be completely immunized from Board review by NS's interpretation of market dominance. NS could take for itself the benefit of any favorable contract rate that DuPont obtains for the B-to-C movement

As part of its Opening Evidence, DuPont showed that this is exactly what NS is trying to do. The history of NS rates and connecting railroad rates, for all but a handful of issue movements, showed that NS's rates on joint-line movements increased dramatically (generally high double digits or even triple digits in cumulative percent gain) over just two years, from 2009-11, while the connecting carriers' rates have gone up only slightly (single digits or low double digits in cumulative percent gain) or even decreased in some lanes. See DuPont Op. Ex. II-B-3; Dup. Op. Wp. "Case Lane Rate History." As a consequence of those NS rate increases,

[42] This percentage will increase or decrease depending upon the proportion of the challenged rate to the through rate This example uses an even split between the rail carriers in order to avoid biasing the result in either direction

alternative transportation rates that were well above NS's 20% threshold before NS increased its rates are now similar to, or even below, the through rail rate today, thus creating the illusion of effective competition after NS already has exercised its market power to take for itself the benefits of DuPont's negotiated contract bargain

NS's attempt to immunize its rates from review even though it is the sole carrier transporting products between Points A and B, and even where no effective competition exists between Points A and B, has enabled NS to raise its rates so high as to absorb much, if not all, of the competitive benefit achieved by DuPont with its contract service from Point B to Point C under the "one lump" theory W. Res., Inc. v. STB., 109 F.3d 782, 784 (D.C. Cir. 1997) (the one-lump theory is "the proposition that there is only one monopoly rent to be gained from the sale of an end product") (internal quotation omitted). See also Kansas City S. —Control—The Kansas City S. Ry., 7 S.T.B. 933, 949 (2004). NS is attempting to force a quasi-vertical integration with the connecting carrier contract transportation service provided to DuPont and, consequently, create and then take monopoly profits for the entire A-B-C transportation.

This is what the court in Union Pacific said the carrier may not do. Like UP before it, NS seeks to take for itself the benefit of DuPont's contractual bargain with non-party railroads. By claiming lack of market dominance, NS seeks to completely insulate its rate from Board review; thus, preserving for itself all the benefits of competition and contract service on the non-bottleneck segment by raising the NS bottleneck rate. Cf. FMC Wyo. v. Union Pac. R.R., 2 S.T.B. 766, 771 (1997) ("there are substantial benefits that derive from a transportation contract that another carrier should not be able to negate").

This would eviscerate the Bottleneck contract exception. Bottleneck II, 2 S.T.B. at 245 ("because we lack jurisdiction to review the reasonableness of the terms associated with the

portion of the movement covered by the [non-bottleneck] contract, the rate provided by the bottleneck carrier in these circumstances...would be separately challengeable on rate reasonableness grounds") See also MidAmerican Energy Co. v STB, 169 F.3d 1099, 1107 (8th Cir. 1999) (court states that "the Board's decisions explicitly provide...three potential avenues of recourse" including the option for bottleneck shippers to "obtain contracts for service over the competitive segments of rail"). NS's position would impermissibly give NS the differential *pricing profits for an entire movement consisting of a captive tariff rate segment and a* competitive contract segment, thus erasing the benefits of the Bottleneck contract exception. Cf. Bottleneck II, 2 S.T.B. at 246 (noting that the AAR proposal would "impermissibly allow the bottleneck carriers to avoid competition").

b) NS's proposal would be impractical and cause confusion.

NS asserts that competition to a challenged tariff rate occurs when a shipper uses direct truck or truck-rail transportation to substitute for a whole route consisting of the challenged tariff rate and a contract rate See, e.g. NS Reply II-B-60 to -61 and -72. In effect, NS wants to completely separate and segregate the market dominance and rate reasonableness phases of the case, so that they apply to completely different transportation movements. This is a recipe for confusion and chaos.

As an example, NS points to Lane B-6, which covers NS transportation of Anhydrous Methylamines ("AHM") from Belle, WV to the interchange at E. St. Louis, IL.[43] See NS Reply II-B-72. There are seven other lanes for which the NS transportation is identical; transportation of AHM from Belle to E. St. Louis is also covered by Lanes B-10, B-11, B-14, B-36, B-39, B-40, and B-43. See Dup. Op. Narr. II-B-103. At E. St. Louis, the AHM can be interchanged to

[43] Although the Third Amended Complaint states that interchange is in Kansas City, the more common interchange point for Lane B-6 is E. St. Louis, as both DuPont and NS have stated. See Dup. Op. Narr. II-B-103 and NS Reply II-B-145.

BNSF (Lanes B-10, B-36, B-40, or B-43) or interchanged to UP (Lanes B-6, B-11, B-14, or B-39).[44] Under NS's plan, the Board would evaluate market dominance separately for each of these lanes, even though the NS transportation under the challenged tariff ends at E. St. Louis for every lane. In NS's view, its market dominance over the Belle to E. St. Louis movement could exist some of the time, but not exist at other times, depending upon what happens to the AHM after the NS transportation ends. In other words, at the end of this proceeding, there could be a prescribed rate some of the time for NS movements from Belle to E. St. Louis, but not at other times. Such a scenario would not only create implementation problems, it would also impermissibly cause the Board's jurisdiction to extend to contract transportation movements.[45]

The situation for Titanium Dioxide would be even more complicated in NS's world. NS transports Titanium Dioxide for DuPont from Edge Moor, DE to Chicago over a total of seven lanes. See Lanes A-11, B-51, B-57, B-58, B-63, B-65, and B-68.[46] At Chicago, the Titanium Dioxide can be delivered directly by NS to DuPont's customer (Lane A-11), interchanged to Canadian National Railway (Lanes B-51, B-58, and B-68), interchanged to BNSF (Lane B-57), or interchanged to Union Pacific (Lanes B-63 and B-65). The A-11 destination is a Chicago transload facility known as Superior Carriers, at which the Titanium Dioxide is transloaded to trucks and then transported to a wide range of DuPont's customers in a multi-state area. See NS Reply II-B-130 to -131. DuPont pays the transload and trucking expense for these movements.

[44] In Lane B-14, the AHM is further interchanged to the Louisiana & North West Railroad in McNeil, AR.

[45] Another example involves transportation of Dimethyl Formamide ("DMF"), for which there are three issue movements: Lanes B-4, B-21, and B-35. All three issue movements have the same NS bottleneck rate from Belle, WV to E. St. Louis, IL. However, NS has only challenged market dominance for Lane B-35. Under NS's view, it is theoretically possible that the Board could find the same rate for the same NS movement unreasonable on Lanes B-4 and B-21, but reasonable due to an asserted lack of market dominance on Lane B-35.

[46] NS has not challenged market dominance for three of the seven Edgemoor-Chicago movements of Titanium Dioxide. See Lanes B-57, B-63, and B-65.

NS has provided a market dominance analysis of all recent DuPont customers served from the Superior Carriers transload facility See NS Reply WP "Lane A11 Analysis xls," see also NS Reply II-B-131. NS alleges that the combined rail-truck movement from Edge Moor to Chicago to the DuPont customers can be entirely replaced by direct truck transportation from Edge Moor to all 19 DuPont customers served from the Superior Carriers facility. In support of its position, NS has estimated the direct truck rate for each of these 19 movements. See NS Reply WP "Lane A11 Analysis.xls."

In NS's view, the Board can and should evaluate each of these 19 movements separately If the Board went down this path, it is entirely possible that market dominance could exist for some of the 19 movements, but not others. The direct truck alternative rates that have been proposed by NS range from a {{ }} savings compared to the whole-route rail (tariff) plus truck (contract) transportation rate to a {{ }} increase Id Because NS contends that shippers only care about the "cost competitiveness of a freight shipment as a whole,"[47] NS is plainly arguing that the Board should find market dominance for only some of the customers served through the Superior facility in Lane A-11, not all of the them.

Within just Lane A-11, then, a prescribed rate could exist for some NS transportation from Edge Moor to the Superior facility in Chicago, but NS would have rate freedom for other movements to the same exact facility This is a recipe for disaster, and implementation would be impossible. DuPont does not even know the ultimate customer destination of the Titanium Dioxide when a rail car departs Edge Moor for the Superior facility. Moreover, the Titanium Dioxide in a single rail car could be destined to four different DuPont customer facilities after transloading at Superior occurs [48] Some of the four customer facilities could be considered

[47] See NS Reply II-B-62

[48] A single truck can transport approximately one-fourth of the amount in a single rail car.

subject to effective competition, while others could be subject to a Board-prescribed rate. Of course, if DuPont does not know the ultimate destination of Titanium Dioxide (or if the commodity in the rail car is destined to more than one customer), there would be no way to know what rate NS should charge for the Edge Moor-Chicago movement NS's position is a formula for chaos.

The whole concept of market dominance is based on the view that a railroad keeps its rate at a reasonable level when it is subject to effective competition However, if neither DuPont nor NS knows the customer facility to which the Titanium Dioxide is destined, then how or why is NS to know that it is subject to effective competition and, therefore, should set its rate for that rail car at the prescribed level? Yet, this is exactly the sort of existential abyss to which NS's arguments ultimately lead

3) Precedent supports DuPont's position.

In an effort to buttress its argument, NS cites to a few ICC and Board decisions, but the purported support either pre-dates the Bottleneck decisions and/or did not directly address the relevant issue. Precedent that is directly on point confirms that the market dominance inquiry should be enforced as written in the statute that the determination of whether "effective competition" exists under 49 U.S.C. § 10707 requires evaluating possible alternatives to the transportation covered by the challenged tariff.

a) The precedent cited by NS does not support its position.

NS asserts that the ICC previously "held that direct whole-route competitive alternatives.. are intermodal competition." NS Reply II-B-78 In support of this assertion, NS cites to Dayton P&L, 1 I.C C. 2d 375 (1985), and CF Industries, Inc. v. Koch Pipeline Co., 4 S T B. 637, 638 (2000). But neither case actually held that whole route competitive alternatives constitute intermodal competition for contract exception rates under the Bottleneck decisions

The Dayton P&L case was decided over a decade before the Bottleneck decisions. Because the rail transportation at issue was over a single rail carrier and ended at a barge transload facility, it did not directly implicate the Bottleneck contract exception as the challenged NS Rule 11 rates do.

The CF Industries case was a pipeline case involving transportation from production facilities in Louisiana to storage terminals throughout the Midwest. The defendant proposed barge transportation to different destination storage terminals from the pipeline destination terminals (except for Palmyra, which was served by both pipeline and barge) and contended that the ability of retailers, which purchase ammonia from storage terminals, to purchase from either the pipeline-served issue destination or the barge-served alternative destination constituted effective competition. Although this is not intermodal competition, the parties' evidence, and hence the Board's decision, addressed it as such.

Ultimately, it was not necessary for the Board to address whether this alternative was intermodal competition because it did not affect the final market dominance determination. The Board found that effective intermodal competition existed for only one pipeline destination point – Palmyra, Missouri. CF Industries, 4 S.T.B. at 647-648. Crucially, the effective barge competition ended at the same exact destination as the issue pipeline movement to Palmyra, which made it the only issue movement that truly had an intermodal alternative between the same origin and destination. Id. at 647 ("CF's Palmyra storage terminal ... can directly receive AA from both Koch's pipeline and barge"). For all of the other issue movements, the Board rejected the defendant's evidence of a competitive alternative as unpersuasive. That determination was true regardless whether it was labeled "intermodal" or "geographic" competition.

Because both Dayton P&L and CF Industries were contested when the agency also considered geographic competition, the need to strictly distinguish intermodal from geographic competition was not so important because of the extent to which geographic competition and intermodal competition can overlap See, e.g., DMIR II, 4 S.T.B. at 292 n 13 (rejecting relevance of pre-Bottleneck decision regarding product and geographic competition because "[t]hat decision. which was issued long before the *Bottleneck* decisions, did not need to distinguish cases in which a rate must necessarily be confined to the bottleneck segment of a through movement"). It is much more important to recognize that distinction today because now the Board only considers intermodal competition in its market dominance assessment

Finally, the fact that the complainants in both cases failed to raise an issue does not show that NS is correct regarding the interpretation of 49 U S C §§ 10701 and 10707. Neither the ICC nor the Board makes the parties' arguments for them, and DuPont is not bound by the concessions or litigation strategy chosen by parties from prior cases. The failure of other parties to object to consideration of transportation alternatives that are not actual substitutes for "the transportation to which the rate applies" does not prevent DuPont from raising this issue Proceedings before the Board are adversarial in nature Otter Tail Power Co. v. Burlington Northern & Santa Fe Railway, S T B Docket No 42071, slip op. at 2 (served Dec 13, 2004). Each party is the master of its own litigation strategy. and arguments not raised are waived. See, e g., BNSF Ry. v STB. 453 F.3d 473, 479 (D.C. Cir. 2006) The Board does not make the arguments for the parties. but only responds to the arguments made. Cf. United States v Mitchell, 518 F.3d 740. 749 (10th Cir. 2008) ("Ours is an adversarial system of justice The presumption, therefore. is to hold the parties responsible for raising their own defenses."); United States v. Rivas-Macias, 537 F.3d 1271, 1281 (10th Cir. 2008) ("Absent extraordinary

circumstances, our adversarial system of justice imposes an abiding duty on each party to take the legal steps necessary to protect his or her own defenses"), citing Cotto v United States, 993 F.2d 274, 278 (1st Cir 1993) [49]

b) The attempt to distinguish DMIR is unpersuasive.

NS unsuccessfully attempts to lessen the impact of the Board's DMIR precedent, but the only result of NS's argument on this issue is to emphasize the holding of DMIR. DMIR involved a challenge by Minnesota Power, Inc ("MPI") to a Dakota, Missabe, and Iron Range Railway Company ("DMIR") tariff rate from the Keenan, Minnesota interchange point to MPI's Laskin Energy Center ("LEC") at Colby, Minnesota. DMIR, 4 S.T.B. 64 The coal that was interchanged to DMIR at Colby originated on BNSF from the Powder River Basin ("PRB") pursuant to a contract between BNSF and MPI. See DMIR II, 4 S.T.B. at 291.

On the issue of market dominance, DMIR claimed that effective competition was provided by BNSF rail service from the PRB to Cohasset, Minnesota (site of another MPI facility) to enable transloading to truck for final transportation to LEC. DMIR, 4 S.T.B. at 66 The Board rejected this claim in ruling on a motion to compel, finding that it violates the fundamental principle that intermodal competition concerns only those "alternatives between the points to which the rate applies", meaning the Keenan to LEC transportation. Id

DMIR sought reconsideration, but the Board again rejected DMIR's position, finding that "evidence as to a trucking alternative from any point other than Keenan may not be considered." DMIR II, 4 S T B. at 292.[50] The Board stated that the position advocated by DMIR was contrary

[49] NS also cites to a variety of cases regarding the meaning of the term "geographic competition" See, e.g., NS Reply II-B-75 to -78. These cases are irrelevant to the real issue at play – the meaning of 49 USC §§ 10701(d)(1) and 10707(h), and whether consideration of "effective competition" to transportation under the challenged rate should include alternatives extending beyond the challenged tariff transportation

[50] The fact that DMIR sought reconsideration of the Board's initial decision belies NS's attempts to describe the holding in that decision as dicta. NS Reply II-B-81 to -82 Clearly that holding was central to the outcome or the defendant would not have sought reconsideration

to the Bottleneck and the Product and Geographic II[51] decisions. Id. "[I]n addressing the market dominance issues in this 'bottleneck' rate case, we ..consider evidence of truck competition only for the bottleneck-segment portion of the through movement." Id. at 288-289 (internal citations omitted)

It would have been difficult for the Board to have been any more clear in its two decisions on this issue, but NS claims that the Board did not mean what it said. NS bizarrely argues that DMIR is somehow distinctive because the railroad there could have posited appropriate alternative transportation for just the transportation covered by the challenged tariff. NS Reply II-B-82. Of course, there is nothing stopping NS from doing the same in this case.

NS also claims that the Board should have "justified" its decision in light of Dayton P&L. NS Reply II-B-83 to -84 But the DP&L case did not involve a bottleneck rate in combination with a contract rate, did not involve interchange between two railroads using Rule 11 rates. was contested when geographic competition was permissible in the market dominance analysis (thus rendering the distinction between geographic and intermodal competition less important). and occurred a decade before the Bottleneck decisions. As such. the circumstances were so different. and the legal landscape had changed so dramatically, that there was nothing to justify Cf DMIR II, 4 S.T.B at 292 n.13 (rejecting relevance of pre-Bottleneck decision regarding product and geographic competition because "[t]hat decision...which was issued long before the *Bottleneck* decisions, did not need to distinguish cases in which a rate must necessarily be confined to the bottleneck segment of a through movement").

NS also claims that the Board should have used notice and comment rulemaking if the Board intended to change the definition of "geographic competition" NS Reply II-B-84 to -87.

[51] Market Dominance Determinations, 3 S.T.B. 937 (1998), *petitions for reconsideration and clarification denied*, 4 S.T.B. 269 (1999)

This argument is largely irrelevant. The key issue is not what the phrase "geographic competition" means, but the correct application of the plain language in the governing statutes, 49 U.S.C. §§ 10701 and 10707, as well as adherence to the judicially-approved Bottleneck cases. Regardless of the term used when a railroad claims that effective competition exists due to an alternative that replaces both transportation under the challenged tariff and also transportation under a separate contract, this claim must be rejected as improper under the statute, under the Bottleneck decisions, under the DMIR decisions, and under the myriad other sources cited herein

In addition, NS asserts that the Board misinterpreted the statute in DMIR NS Reply II-B-87 to -91. With this final argument, NS has come full circle – from the initial support of DMIR as rightly-decided, but distinctive[52] to skepticism[53] and finally to opposition.[54] This final argument about the propriety of the DMIR decisions is nothing more than a continuation of NS's fixation on the term "geographic competition" and a rehash of NS's prior assertions in trying to avoid the plain language of the market dominance statute. DuPont has already refuted all of NS's arguments on these points earlier in this Rebuttal

h. The Limit Price Methodology confirms the extent of NS's market dominance.

In M&G Polymers USA, LLC v. CSX Transportation, Inc., Docket No. NOR 42123 (served Sept 27, 2012) ("M&G Decision"), the Board proposed a new quantitative methodology, termed the "Limit Price Methodology" ("LPM"), that would supplement the market dominance determination. That decision, however, was only a preliminary decision, subject to the Board's evaluation of comments submitted by multiple parties on November 28, 2012. Before the Board

[52] NS Reply II-B-82

[53] NS Reply II-B-83 to -87.

[54] NS Reply II-B-87 to -91

could issue a final decision on the LPM, however, M&G and CSXT entered into a settlement agreement and the case was dismissed. Therefore, it is uncertain whether the Board intends to apply the LPM in future cases, and if so, whether the LPM would take a different form from that proposed in the M&G Decision

Whereas NS has objected to the LPM as unlawful and economically unsound.[55] DuPont believes that the LPM is both lawful and economically justified, but not in the form proposed in the M&G Decision. As detailed in Part II.B.3.b , DuPont contends that the LPM should only be used to presume the *absence*, but not the *existence*, of effective competition, because there is no single point that can rationally be used as a fulcrum for both conclusions, and it is the very high level of the RSAM that makes it a conservative threshold for presuming the existence of effective competition when the LP R/VC ratio is greater. In contrast, anytime that there is a transportation alternative with an LP R/VC ratio below the RSAM ratio, a railroad could confidently set rates at the RSAM ratio and be immunized from a regulatory challenge. The practical effect would be to set a rail rate floor at the RSAM ratio whenever there is a transportation alternative with an LP R/VC ratio below the RSAM ratio Such a result would be contrary to the statute Therefore, the Board should continue to determine the *existence* of effective competition solely based upon traditional qualitative market dominance factors

In addition to its substantive attack on the LPM, which DuPont addresses in Part II.B.3, NS contends that the LPM is unlawful because it was not adopted through a formal notice and comment rulemaking and it improperly substitutes a quantitative test for the qualitative market dominance determination. DuPont demonstrates why both of those arguments are incorrect in the following subsections

[55] NS Reply II-B-40 to -57

Finally, in Part II.B.3.d., DuPont presents evidence that, even accepting all of the NS alternative rate calculations, the LPM establishes a presumption of market dominance for 77 of the 99 contested issue movements.

1) The Board's adoption of the LPM is procedurally sound.

The Board is within its authority to adopt the LPM in this proceeding. NS claims that the LPM modifies the Board's existing and longstanding rules on qualitative market dominance, which were adopted through notice and comment rulemaking by the ICC in Market Dominance Determinations, 365 I.C.C. 118 (1981), and thus can only be adopted through notice and comment rulemaking. NS Reply II-B-46 to -49. That simply is not accurate. The Board is not required to engage in notice and comment rulemaking for the following reasons

First, the LPM does not modify Market Dominance Determinations. In that decision, the ICC stressed that it was adopting non-exhaustive guidelines for the types of evidence that it would consider in a qualitative market dominance analysis. Notably, the ICC specifically stated that other types of evidence would be permitted and could be considered. Id. at 133 ("Other types of evidence on the feasibility or nonfeasibility of motor carriage as an alternative to rail will also be considered.") While the Board may not ignore or otherwise disregard the factors that it has stated it will consider,[56] it is not precluded from considering other factors in individual adjudications. Nor has the Board repealed or deviated from any of the explicitly enumerated market dominance factors. They continue to play significant roles in determining the practical feasibility of alternative transportation options and in rebutting the preliminary conclusions of the LPM. The LPM is merely a lens through which the Board will evaluate the various market dominance factors.

[56] APS, 742 F.2d at 650.

Second, the LPM does not reverse Market Dominance Determinations on the use of rebuttable presumptions. The contrary claim by NS rests on the theory that, since the ICC repealed four specific types of rebuttable presumptions from market dominance consideration in a rulemaking, then any future use of a rebuttable presumption is an "amendment" of the prior ICC decision and similarly requires adoption in a rulemaking proceeding. But, a decision to repeal a rule previously adopted by notice and comment rulemaking is not procedurally in the same posture as a decision adopting a rule by notice and comment rulemaking in the first place. In the latter scenario, the Board may only modify or repeal the rule by another notice and comment rulemaking. In the former situation, once the Board has repealed such a rule, it is writing on a blank slate thereafter as if the repealed rule had never existed. This effectively restores to the agency its discretion to adopt future rules on the same subject matter either via rulemaking or adjudication. See SEC v. Chenery Corp., 332 U.S. 194, 203 (1947) ("the choice made between proceeding by general rule or by individual, *ad hoc* litigation is one that lies primarily in the informed discretion of the administrative agency.").

Furthermore, the LPM is distinct from the rebuttable presumptions adopted in Special Procedures, 353 I.C.C. 875 (1976), and repealed in Market Dominance Determinations. The ICC never stated that it was deciding never to use any rebuttable presumption ever again in a market dominance decision. Instead, the ICC merely repealed the four specific rebuttable presumptions that it previously had adopted by formal rulemaking in Special Procedures. Because those presumptions had been adopted via notice and comment rulemaking, the ICC could only repeal them via the same process. That did not preclude the agency from ever adopting new and different presumptions in a future adjudicatory proceeding.

NS also has suggested that the LPM requires a notice and comment rulemaking because it is sufficiently similar to a rebuttable presumption based upon R/VC ratios that the ICC repealed in Market Dominance Determinations. That presumption, which was based *solely* upon the R/VC ratio of the challenged rate, was repealed because it was inconsistent with the statute after the Staggers Act. Market Dominance Determinations at 121-22 (the statutory 180% threshold was above the 160% rebuttable presumption). The ICC acknowledged, however, that it could have chosen to just raise the level of the rebuttable presumption, but chose not to do so for other reasons. Id. at 122. Furthermore, the ICC stated that its new market dominance guidelines "will encourage submission of more accurate costing information which may include *price-cost ratios* and lead to more appropriate market dominance determinations." Id. (italics added). The LPM is not a pure R/VC presumption. Rather, it compares the R/VC ratio that the alternative transportation rate would yield on the issue movement if priced similarly and then compares that LP R/VC ratio to the RSAM ratio. Because the LPM is not the same measure as a presumption based solely upon the R/VC ratio of the issue movement, it is not inconsistent with, or a reversal of, Market Dominance Determinations.

Third, because the LPM is not a legislative rule, notice and comment rulemaking is not required. Under well-established precedent, a rebuttable presumption is not a legislative rule because it leaves an agency with discretion. Catawba County v. EPA, 571 F.3d 20, 34 (D.C. Cir. 2009), Alliance for Bio-Integrity v. Shalala, 116 F. Supp. 2d 166, 172-173 (D.C. Cir. 2000); Nat'l Ass'n of Broadcasters v. FCC, 569 F.3d 416, 425 (D.C. Cir. 2009). "An agency pronouncement is not deemed a binding regulation merely because it may have some substantive impact, as long as it leaves the administrator free to exercise his informed discretion. . . Presumptions, so long as rebuttable, leave such freedom." Panhandle Producers & Royalty Owners Ass'n v. Econ.

Regulatory Admin., 822 F.2d 1105, 1110 (D.C. Cir. 1987) (internal citation and quotation omitted). Cf. Stanley v. Illinois, 405 U.S. 645, 657-658 (1972) (due process prevents state from using an unrebuttable presumption).

Moreover, an agency may develop and rely upon a rebuttable presumption in the course of an adjudication. Am. Forest & Paper Ass'n v. FERC, 550 F.3d 1179, 1183 (D.C. Cir. 2008) (indicating that FERC could have adopted rebuttable presumption either in adjudication or rulemaking), NLRB v. Baptist Hosp., Inc., 442 U.S. 773, 788-789 (1979) (describing case where rebuttable presumption first used), Rice v. NTSB, 745 F.2d 1037, 1039 (6th Cir. 1984) (describing custom by which NTSB views FAA's recommended punishment as a rebuttable presumption), Republic Aviation Corp. v. NLRB, 324 U.S. 793, 803-805 (1945) (describing an adjudicatory proceeding where a rebuttable presumption was first adopted). Thus, there clearly is no procedural barrier to the Board's application of the LPM to this case.

2) The LPM supplements, but does not replace, a traditional market dominance analysis.

Much of NS's objection to the LPM is predicated upon an inaccurate contention that the LPM uses R/VC ratios to replace the traditional qualitative market dominance analysis. But the Board has not eliminated any of the qualitative market dominance guidelines. It still will consider all the same factors as it always has considered, both independent of the LPM (when determining practical feasibility) and to rebut the presumptions of the LPM (when determining economic feasibility). M&G Decision at 14-15.

The Board has identified three steps in the qualitative market dominance analysis, only one of which contains a quantitative assessment. Id. at 14 ("a threshold feasibility analysis, a comparison of the limit price to the defendant's variable costs of providing the service at issue, and a consideration of intangible factors").

The first step is to determine whether modal alternatives are feasible as a practical matter. M&G Decision at 12 ("The preliminary step is to determine the feasibility of any theoretical transportation alternatives that could be used for the issue traffic (considering both intramodal and intermodal alternatives)") This first step requires consideration of all the traditional qualitative market dominance factors described in Market Dominance Determinations If there are no practical feasible alternatives, the Board can definitively conclude that market dominance exists without resort to the second and third steps. If practical alternatives exist, however, the Board will proceed to the next step.

The second step is to determine whether modal alternatives are economically feasible Id ("whether feasible alternatives exert effective competitive pressure on [railroad's] pricing..") This is where the Board will apply the quantitative element of the LPM announced in the M&G Decision. Id at 13-14. By comparing the LP R/VC ratio with the defendant's 4-year average RSAM ratio, the Board will reach a preliminary conclusion as to whether a practical feasible modal alternative also is an economically feasible effective competitive constraint As discussed in Part II.B 3, the Board should only use this quantitative element of the LPM to conclude that a transportation alternative is *not* an effective constraint when the LP R/VC ratio is greater than the RSAM ratio, because the opposite conclusion when the LP R/VC ratio is below the RSAM is unlawful, arbitrary and capricious. The preliminary conclusion generated by this second step is then subject to rebuttal in the third step

The third step is to consider whether any intangible features of the alternative transportation are sufficient to overcome the preliminary conclusion reached in the second step Id at 14 ("Finally, when appropriate, we will consider whether the alternative has any intangible features sufficient to overcome the applicable preliminary conclusion."). This step appears to

require consideration of the traditional qualitative market dominance factors described in Market Dominance Determinations. DuPont believes, however, that the Board has described this third step too narrowly by reference only to intangible features of the alternative transportation. There also may be significant intangible features of rail transportation that outweigh those of any alternative transportation, and to ignore those would be arbitrary, capricious, and inconsistent with Market Dominance Determinations. Therefore, the Board should clarify that this third step will consider and balance the intangible features of both the alternative transportation and rail transportation

Despite NS's contrary suggestion, there is nothing inappropriate in the Board's decision to use a quantitative analysis to inform its qualitative market dominance determination. In CF Industries, Inc v STB, 255 F.3d 816, 822 (D C. Cir. 2001), the DC Circuit affirmed the Board's use of a quantitative analysis in conjunction with qualitative market dominance considerations.

> While the Board's market dominance guidelines contemplate the use of...qualitative considerations, they do not exclude the application of quantitative analysis as well.

In that case, the Court also noted that the Board's quantitative methodology was merely a part of its overall market dominance evaluation, which entailed many non-quantitative factors Id at 822 n 8.

As noted in the foregoing description of the qualitative market dominance analysis under the LPM, the Board has not supplanted a traditional market dominance analysis with a purely quantitative approach. Rather the quantitative element of the LPM supplements the traditional factors and the rebuttal element of the LPM also incorporates those factors There is nothing unlawful with this approach

C. THE EVIDENCE SHOWS THAT THE CHALLENGED RATES ARE UNREASONABLY HIGH

Consistent with Board guidelines, DuPont submitted its complete case-in-chief in its Opening Evidence. DuPont's evidence presented a SARR – the "DuPont Railroad" or "DRR" – that operated over a system of approximately 8,000 miles in length in the eastern part of the United States, moving largely over the same routes, and in the same manner, as NS does today. In its evidence, DuPont explained in detail the procedures that it had used, which were consistent with the rules, principles and precedent that the Board had enunciated in past SAC cases, and "support[ed] the feasibility of all components of its design and cost estimates." FMC, 4 S.T.B. at 723. DuPont's evidence showed that the challenged NS rates are extraordinarily high – higher by far than the rates produced by the Board's SAC procedures

In its Reply, NS presents a vitriolic, scornful, and derisive attack on DuPont's Opening Evidence – an over-the-top rhetorical approach from beginning to end. But NS's exaggerated rhetoric is designed not to illuminate but to conceal – to hide the fact that DuPont's evidence does in fact present a SARR that is fully supported and feasible, and to mask the lack of substance and serious deficiencies of NS's own SARR. In particular, NS's hyperbolic oratory is intended to obscure the fact that the entire basis for NS's own operating plan – its use of an untested and unnecessary "MultiRail" program to develop an operating plan that is utterly divorced from real-world NS operations – is utterly unsupported.

In this Rebuttal, DuPont shows that its own Opening Evidence is feasible, fully supported, and based on the data that NS provided in discovery, and that NS's Reply evidence is not. Where appropriate, and fully consistent with the Board's guidelines for the proper scope of rebuttal evidence, DuPont supplies corrective evidence in response to legitimate NS criticisms.

DuPont respectfully requests the Board to credit the evidence that it has submitted, and to rule that the NS's rates at issue in this proceeding are unreasonable under the law.

1. The Proper Scope of Rebuttal Evidence

In a number of its past decisions, the Board has enunciated principles to guide complainants as to the parameters of permissible rebuttal evidence in rate reasonableness cases before the Board. These decisions include in particular General Procedures and Duke/NS, but helpful discussions exist in other cases, including PSCo/Xcel, Duke/CSXT, CP&L, Otter Tail, and WTA/Basin.

Under this precedent, rebuttal must be supported. See Duke/NS, 7 S.T.B. at 637. Moreover, a complainant cannot alter opening evidence that the defendant has not challenged, PSCo/Xcel, 7 S.T.B. at 643-644, and Otter Tail, slip op. at 4, nor can it significantly redesign its SARR or alter the core assumptions upon which its case-in-chief is based. See Duke/NS, 7 S.T.B. at 100 and 133; Duke/CSXT, 7 S.T.B. at 450; PSCo/Xcel, 7 S.T.B. at 643-44; and FMC, 4 S.T.B. at 790.

If a railroad does challenge a portion of the shipper's opening evidence, then the shipper can accept the railroad reply or assert that its own opening evidence is superior. Duke/NS, 7 S.T.B. 100-101. However, the Board has also made clear in Duke/NS that, in certain circumstances, the shipper can also "refine its evidence to address issues raised by the railroad regarding its opening evidence." Id. Specifically, in such cases, the options open to the shipper are:

> (a) if the railroad has identified flaws in the shipper's opening evidence but has not provided substitute evidence, the shipper can supply "corrective evidence" with support; or,
>
> (b) if the railroad has identified flaws in the shipper's opening evidence and the railroad has provided substitute evidence, the shipper can show that the railroad's substitute

> evidence is "unsupported, infeasible or unrealistic," and then supply "corrective evidence" with support

Duke/NS, 7 S.T.B. at 100-101, 141, 175 and 190. In the second case, "infeasible" evidence is evidence that would not work; "unsupported" evidence is evidence for which there is no proof that it would work, and "unrealistic" evidence is evidence that is (a) not what the defendant railroad itself does in a comparable situation, (b) what other railroads generally do in that situation, or (c) otherwise constitutes needless "gold-plating." Duke/NS, 7 S.T.B. at 101, n.19.

However, the Board has also indicated that, even where it is permissible for the complainant to supply corrective evidence, the shipper cannot use just any new supporting evidence on rebuttal, because the railroad would not have had an opportunity to respond. See, e.g., Duke/NS, 7 S.T.B. at 138, Otter Tail, slip op. at 4, WFA/Basin, slip op. at 68-69, General Procedures, 5 S.T.B. at 446. The Board has determined that acceptable corrective evidence can include: (a) any evidence submitted in the opening or reply[57], (b) any documents or information produced in discovery[58]; (c) STB precedent[59]; (d) real-world practices of the defendant railroad[60]; and (e) certain other types of evidence, such as what other real-world railroads do.[61]

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[57] See, e.g., PSCo/Xcel, 7 S.T.B. at 637, WFA/Basin, slip op. at 71.

[58] See, e.g., WFA/Basin, slip op. at 48, I-MC, 4 S.T.B. at 814 (STB re-states locomotive and car repair costs based on discovery documents cited by complainant). The Board has held that the complainant is entitled to rely on information received in discovery, and the railroad cannot impeach its own discovery documents. PSCo/Xcel, 7 S.T.B. at 683.

[59] See, e.g., CP&L, 7 S.T.B. at 314, WFA/Basin, slip op. at 40 (car maintenance expense).

[60] See, e.g., Otter Tail, slip op. at C-4 (fuel consumption based on defendant's system average). Duke/NS, 7 S.T.B. at 191 (STB uses rebuttal for hook bolts where shipper shows that its rebuttal is based on defendant's standards) (see also CP&L, 7 S.T.B. at 328, same issue). Duke/NS, 7 S.T.B. at 194 (STB uses correction to reply evidence advanced by the complainant on rebuttal for communication system towers where shipper shows that its rebuttal exceeds the real-world practices of the defendant); WFA/Basin, slip op. at 48 (STB uses rebuttal evidence when complainant shows that defendant's contract for taxi expenses is the best evidence of record), WFA/Basin, slip op. at 93 (STB uses compaction ratio for subballast quantities advanced on rebuttal where complainant shows that it was based on defendant's source material).

[61] See, e.g., CP&L, 7 S.T.B. at 293 (STB adopts shipper's rebuttal evidence on dispatchers based on comparison with KCS), Duke/NS, 7 S.T.B. at 177 (STB uses rebuttal for yard drainage where shipper showed that elaborate drainage advanced by defendant on reply is not generally used by railroads) (see also CP&L, 7 S.T.B. at 314 for same issue). Occasionally, the Board has permitted certain other rebuttal, see, e.g., Duke/NS, 7 S.T.B. at 173 (evidence based on physical inspection of line).

If a shipper shows that the railroad's reply evidence is unsupported, infeasible or unrealistic on a particular SAC issue, then the Board may accept increases in the shipper's SARR cost on that issue when added by the shipper on rebuttal, regardless of

Moreover, in Duke/NS, the Board also warned potential defendants that they "may not take unfair advantage of weaknesses in the shipper's opening evidence by submitting reply evidence that is itself unsupported, infeasible, or unrealistic, or that presents criticism without appropriate evidence that can be used in the Board's SAC analysis." The Board concluded that, if the defendant railroad does present unsupported, infeasible or unrealistic evidence, or presents criticism without evidence that can be used by the Board, "the shipper may use rebuttal to correct deficiencies that have been identified." Duke/NS, 7 S.T.B. 100-101.

Finally, the Board has made clear that, when precedent exists on a particular SAC issue, the party seeking a deviation from precedent has the burden of proof. See, e.g., PSCo/Xcel, 7 S.T.B. at 644; WFA/Basin, slip op. at 53-54 and 68-69; Otter Tail, slip op. at C-16.

In presenting its rebuttal SAC evidence, DuPont has been mindful to adhere to the Board's guidelines on the proper role of rebuttal evidence. As will be discussed infra, there are crucial instances where NS has failed to provide the Board with information or programs to support its case, to which DuPont responds by showing that its own evidence is feasible and supported, or by supplying corrective evidence in accord with the principles in Duke/NS. In other instances, DuPont shows that NS's evidence is infeasible, unsupported, or unrealistic, and then either shows that its opening evidence in fact meets the Board's standards or supplies corrective evidence using the types of evidence approved by the Board on rebuttal.

2. Traffic and Revenues (Part III.A)

The DRR traffic group includes a broad range of commodities moving in intermodal, unit train, manifest (mixed general freight) and local trains. In its Opening Evidence, DuPont explained the procedures that it followed to identify and model this traffic under the principles

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support. See, e.g., WFA/Basin, slip op. at 100 (shipper's rebuttal showed that railroad's inclusion of 68 miles of SARR yard track was unnecessary. Board accepted shipper's addition of 05 miles of lay-up track without additional support).

enunciated in Coal Rate Guidelines and subsequent cases, in light of the nature and complexity of this case and the limitations of NS data produced in discovery. On Reply, NS scornfully attacks virtually every aspect of DuPont's Opening Evidence. Dup. Reb. III-A-1.

In its Rebuttal Evidence, DuPont summarizes the dollar value of the differences, briefly discusses the approach that each party used, and explains how DuPont's Opening and Rebuttal Evidence presents the best evidence of record. The disputes between the parties can be grouped into three topics: the DRR traffic group, forecasted traffic volumes, and stand-alone revenues. Each of these is discussed in turn below and in Part III.A of DuPont's Rebuttal Evidence.

a. The DRR traffic group

NS generally accepts DuPont's evidence on the DRR's traffic group for the purposes of determining the SARR traffic volumes and revenues, with two exceptions, the inclusion of duplicative waybill records for certain interline Triple Crown Services ("TCS") shipments, and the inclusion of so-called "leapfrog" cross-over traffic. The first is a minor waybill revenue accounting item that does not change the DRR traffic group; it merely corrects an inadvertent overstatement of DRR revenues for a small group of TCS shipments. DuPont accepts NS's criticism and adjusts its evidence accordingly. Dup. Reb. III-A-3 to 4. The second involves traffic that moves over more than one segment of the DRR, which the NS argues (in two separate places in its Reply Evidence) should be excluded.[62]

What NS terms "leapfrog" traffic,[63] is simply cross-over traffic that exits and reenters the DRR system. NS points, for example, to a movement that originates on the DRR in Chicago, moves to Chillicothe, OH, where it is interchanged with the residual NS, moves over the residual

[62] See NS Reply III-A-53 to 59. NS also discusses this traffic at NS Reply III-C-105 to 117. Although DuPont's evidence mirrors NS's Reply Evidence in discussing the issue of leapfrog traffic in both Parts III A and III C of its Rebuttal, this Counsel's Argument and Summary combines a summary of the facts and a discussion of the legal issues of the leapfrog issue in this one section.

[63] Allegedly because it "leap[s] over difficult or costly segments of the interior of the SARR network." See NS Reply III-A-54.

NS to PD Junction, WV, where it connects to the DRR for movement over the DRR to Petersburg, VA, where it is transported to its final destination at Norfolk again over the lines of the residual NS See NS Reply III-A-57 NS argues that this cross-over traffic introduces a "variant" of cross-over traffic that is "unprecedented" and a "distortion and abuse" of such traffic. See NS Reply III-A-54, 59.[64]

At the outset, NS's entire criticism of internal cross-over, or "leapfrog," traffic must be dismissed because NS has failed to model its SARR, or even a variant thereof, without the "leapfrog" traffic about which NS so vehemently complains Buried in a footnote, NS admits that it has not calculated the operating and investment expenses associated with "leapfrog" traffic and has not modeled a SARR without this traffic. Instead, NS suggests that the Board should disallow all "leapfrog" traffic in this case and should order the parties to conduct further analyses NS Reply III-A-55, n.50. Aside from the fact that it is ludicrous for NS to vehemently complain about the inclusion of "leapfrog" traffic and then fail to model even an alternate SARR without it, thus saddling DuPont with the consequences of NS's failure of proof, such a course of action is flatly inconsistent with Board precedent and warrants rejection of NS's argument outright. In Duke/NS, 7 S.T.B at 101, the Board stated that a railroad may not "submit[] reply evidence that . presents criticism without appropriate evidence that can be used in the Board's SAC analysis." [Emphasis added] This is exactly what NS has done here, and its arguments should be rejected [65]

But beyond this fatal legal infirmity, NS is wrong that internal cross-over traffic should be excluded from DuPont's SAC analysis, for a variety of reasons

[64] DuPont Rebuttal Exhibit III-A-1 contains a discussion of the limitations of cross-over traffic that have been proposed in Ex Parte No 715, Rate Regulation Reforms, served July 25, 2012 (hereinafter EP715), and why the proposed limitations should not be imposed in this case, whether or not they are imposed for other future cases

[65] See also, AEPCO, 7 S T B at 225 (The Board has held that "[o]perating in an industry subject to regulatory oversights of rates charged on captive traffic, railroads have a responsibility to provide information needed by the Board.")

First of all, on a factual level, DuPont's experts show that this internal cross over traffic is common in railway operations in general, and exists in NS's real-world system in significant amounts. See Dup. Reb III-A-5 to 22. For example, in an even more complex real-world internal cross-over movement than the Chicago-to-Norfolk "leapfrog" example prominently cited by NS in its Reply Evidence and mentioned immediately above (where traffic enters and exits the DRR twice in its movement from origin to destination), the real-world NS originates a movement of sand in {{ [redacted] }}. See Dup. Reb. III-A-5 to 8, III-C-44 to 47 In this movement, NS two other carriers to serve as "leapfrog" carriers for intermediate segments. Dup Reb. III-A-5 to 8

DuPont's evidence cites several other real-world examples of movements that cross over between NS and its regional partners back and forth over the NS several times during the course of a single movement, involving tens of thousands of cars per year. Dup. Reb III-A-11 to 18. In fact, DuPont's Rebuttal shows that NS uses over a dozen different carriers for a variety of "leapfrog" movements on its own system Dup. Reb. III-A-5 to 6, 18 to 20 Clearly, "internal cross-over movements," under which traffic moves back and forth over one railroad and then one or more other railroads several times during the course of a movement, are a common part of real-world rail operations

Second, again on a factual level, the absurdity of NS's argument is clearly revealed by the fact that NS's own operating plan for the DRR includes internal cross-over "leapfrog" traffic

– except that NS's operating plan is less efficient than the NS's own real-world operations or DuPont's DRR operating plan [66] DuPont's evidence shows, for example, that the movement of sand from {{ }}, discussed above, is rerouted by NS in its own Reply Evidence over a route that is over sixty percent longer than the length of the real-world NS routing or DuPont's DRR routing, is an external reroute to the DRR in violation of SAC rules; and is routed over two non-DRR segments during the course of a movement – a "leapfrog" movement under NS's own definition. Dup. Reb. III-A-21 to 22, III-C-44 to 47. One can only conclude that, according to NS, when DuPont uses internal cross-over movements, such movements are an "unprecedented" "gambit" and "manipulation" that would "knock the legs out from under SAC principles and analysis" and that such "gamesmanship" would "render the SAC process and test meaningless " See NS Reply III-A-54, 59 for these and other exaggerated adjectives. Apparently, however, when an internal cross over movement occurs on NS's SARR, even when it results in a far longer and less efficient movement and imposes upon the residual NS operating costs that NS does not incur in the real world, it becomes part of NS's "complete and feasible operating plan for the DRR . " NS Reply III-C-154 The hypocrisy is breathtaking

The fact that NS's own SARR contains "leapfrog" movements suggests the fundamental reason why such movements appear in the DRR, no matter which party designs the SARR namely, the size and scope of the DRR As DuPont's evidence points out, no previous SARR has ever approached the size and scope of the DRR, which has over 8,000 route miles and serves 138 issue traffic origin-destination pairs Dup. Reb III-C-35 The DRR – whether it is hypothetically constructed by DuPont or by NS – is fundamentally an amalgam of 138 separate

[66] This leapfrog traffic is separate from the DuPont "leapfrog" traffic that NS criticizes but then refuses to model in the SARR

SARRs with many overlapping and non-overlapping segments across the eastern United States. Since the DRR focuses on the issue traffic – the core objective of the SARR analysis – there will inevitably be residual NS line segments needed to serve cross-over traffic. Id. The fact of the matter is that the end-points of the internal cross-over "leapfrog" segments (i.e., hypothetical interchange points between the DRR and the residual NS) are all on lines that serve the issue traffic. Dup. Reb. III-C-38 to 40, 49.

But there are numerous other problems with NS's "leapfrog" argument, in addition to the fact that it is simply inconsistent with the real-world operations of NS and other railroads; inconsistent with the NS's own SARR which itself contains internal cross over "leapfrog" segments; and is the inevitable result of the number and nature of the 138 different movements encompassed by DuPont's Complaint. Dup. Reb. III-C-35.

NS argues that the objectives of internal cross-over "leapfrog" traffic do not fulfill the purpose of cross-over traffic approved in Board precedent because "leapfrog" movements do not reduce the geographic scope of the SARR. Cross-over traffic, the NS insists, should be permitted only by allowing a SARR to interchange cross-over traffic with the incumbent carrier at the "geographic end-points" of a SARR network. NS Reply III-C-108 to 110. First, all interchange points between the DRR and the residual NS are geographic end-points of the DRR. Second, DuPont's Rebuttal Evidence shows that the use of internal cross-over traffic *does* reduce the scope of the SARR, and if DuPont were required to construct the "leapfrog" segments, it would add thousands of miles to the DRR. Dup. Reb. III-C-38. DuPont's evidence also shows that, in many prior SAC cases, traffic has been interchanged with the residual incumbent and other railroads at many places along the SAC route. Dup. Reb. III-C-38 to 39, and that the NS's "geographic end-point" argument is a red herring. Dup. Reb. III-C-40.

Additionally, NS argues that it receives a lower division than it deserves on internally rerouted traffic in some instances. See NS Reply III-C-111 to 112. But NS's argument improperly commingles the hypothetical world of the SARR's operations with the incumbent's real-world costs The Board has made it clear that the purpose of ATC is to divide the incumbent's revenue based on the incumbent's costs, and that the SARR's operations are irrelevant to this process. Dup. Reb. III-C-41.[67] See also, Dup Reb. III-A-24 to 25

NS also argues that DuPont's use of internal cross-over traffic circumvents the Board's rules for rerouting traffic. NS Reply III-C-112. But DuPont's evidence shows that NS has quoted the Board's decision in CP&L completely out of context When the predicate missing from NS's truncated quote is supplied, the situation addressed by the Board in CP&L (reroutes external to the SARR) does not exist in the case of the DRR,[68] and that the concern of the Board in CP&L, that the action of the complainant in that case involved improper revenue shifting, does not exist in the case of internal cross-over traffic on the DRR. Dup. Reb III-C-42 to 44.

Finally, NS argues that the use of internal cross-over traffic provides an opportunity for "gaming " But the fact of the matter is that the SARR must include all of the lines necessary to serve the issue traffic, no matter what the cost or density of those lines. Dup. Reb. III-C-49. Thus, there is no opportunity to game the fundamental contours of the SARR Moreover, as noted above, the end-points of internal cross-over "leapfrog" segments are all on lines that serve the issue traffic – DuPont has thus not used such traffic to "game" the SAC analysis. Dup. Reb III-C-48 to 49 [69]

[67] See, e.g. Major Issues at 34, WTA/Bpsin II at 13

[68] It is highly ironic that the NS operating plan does create impermissible external reroutes See, Dup Reb III-C-69.

[69] In a footnote, NS implies that DuPont s use of cross-over traffic implicates the concerns voiced by the Board in its decision in AEPCO and in its recent proposal in EP715. See NS Reply III-A-54 But DuPont's evidence shows that NS's attempt to paint DuPont's evidence with that brush is completely unavailing: See Dup Reb III-A-24 to 25.

b. Forecasted traffic volumes

NS challenges DuPont's use of average tons per car by commodity as a weighting factor, DuPont's use of NS's own forecasts for coal, and DuPont's use of a 5-year compound average growth rate (CAGR). DuPont accepts NS's weighting factors, because NS's procedures have minimal impact on the total DuPont rebuttal tonnages Dup Reb III-A-30 With respect to DuPont's use of NS internal forecasts for coal, DuPont accepts certain of NS's positions but rejects others. Dup. Reb. III-A-30 to 32. DuPont rejects NS's criticism of its compound annual growth rate procedure, because using a longer period of historical data produces more accurate results. Dup. Reb. III-A-34 to 35. Incorporation of NS's valid criticisms reduces the DRR forecasted tonnage volumes by over ten percent. Dup. Reb. III-A-36

c. Stand-alone revenue

NS challenges DuPont's calculation of revenues for the DRR on multiple grounds. Dup Reb III-A-37 DuPont has accepted four of these criticisms and has partially accepted another. Dup. Reb. III-A-67 However, by far the largest difference between the parties regarding the DRR's revenues involves NS's use of Original ATC to determine revenue divisions for cross over traffic In addition, DuPont rejects NS's assertion that there is an improper mismatch between fuel cost projections and fuel surcharge revenue projections.

1) Modified-ATC

DuPont strongly rejects the NS's use of Original ATC, which is wrong as a matter of both law and economics. As a matter of law, the Board properly adopted Modified ATC and has itself declared that to be its currently applicable methodology for allocating cross-over traffic revenue As a matter of both law and economics, DuPont's Rebuttal Evidence shows that Modified ATC is superior to both Original ATC and the Alternate ATC that the Board has

proposed in EP715, and that the use of Original ATC as NS argues would be arbitrary and capricious.

a) NS is incorrect as a matter of law that the Board must apply Original ATC to this case.

NS dedicates a lengthy portion of its Reply Evidence to DuPont's use of Modified ATC to determine cross-over traffic revenue divisions. NS Reply III-A-83 to 124 Despite its length, the NS argument boils down to assertions that, as a matter of law: (1) the Board improperly adopted Modified ATC in WFA/Basin II, and therefore, (2) the Board should apply the discredited Original ATC methodology in this proceeding. On rebuttal, DuPont continues to use Modified ATC because the Board properly adopted Modified ATC and has itself declared that to be its currently applicable methodology for allocating cross-over traffic revenue.

The adoption of Modified ATC in WFA/Basin II did not require a public rulemaking proceeding because Modified ATC was a refinement of Original ATC necessitated by the objectives of both ATC and Guidelines. Because administrative agencies are permitted, via adjudication, to refine their application of so-called "legislative" or "substantive" rules adopted in rulemaking proceedings, there was nothing improper about the Board's adoption of Modified ATC in the WFA/Basin II adjudication. The Board's action in WFA/Basin II was a reasonable clarification of an existing rule to accomplish the stated goals and intent of ATC, hence, it was a permissible interpretive rule

The APA does not apply to interpretive rules. procedural rules, policy statements, and certain other rule-related agency actions. 5 U S.C. § 553(b)(3)(A) Thus, the fundamental question is whether the.refinement of ATC in WFA/Basin II was an amendment of the ATC methodology adopted in Major Issues or an interpretation.

> A rule does not ..become an amendment merely because it supplies crisper and more detailed lines than the authority being

> interpreted. If that were so, no rule could pass as an interpretation of a legislative rule unless it were confined to parroting the rule or replacing the orginal vagueness with another

American Mining Congress, 995 F 2d at 1112 An interpretive rule can do more than simply paraphrase a legislative rule or statute "Indeed, a mere paraphrase would hardly be interpretive at all." Orengo, 11 F.3d at 195. Thus, "agencies possess the authority in some instances to clarify. .existing rules without issuing a new NPRM and engaging in a new round of notice and comment." Sprint Corporation v. FCC, 315 F.3d 369, 373 (D.C. Cir. 2003) "Especially in the course of an adjudication, the agency will give its understanding of the regulations with whose enforcement it is entrusted." Orengo, 11 F 3d at 195

The Board adopted Original ATC in the Major Issues proceeding, which followed notice and comment rulemaking procedures. The Board commenced Major Issues because the evolution and application of the Coal Rate Guidelines "have drifted away from what Congress intended in some important respects." Major Issues, slip op. at 3 The goal when allocating cross-over revenue, as stated by the Board, should be to "ensure that a truncated SAC analysis using cross-over traffic will approximate the outcome of a full SAC analysis." Id. at 24. The Board intended Original ATC to take account of the economies of scale, scope, and density, principles ignored by the prior Modified Straight Mileage Prorate method. Id. at 25. Thus, the fundamental objective of ATC was "to equitably distribute [cross-over] revenues in relation to the cost incurred to generate those revenues .." Id

In the first application of Original ATC in a specific case, however, the Board encountered a set of facts that it had not contemplated in Major Issues Specifically, the cross-over traffic in that case included "considerable traffic with total revenue either below or barely above variable cost," which had the practical effect of allocating revenue to the on-SARR segment that would be insufficient even to cover variable costs. WFA/Basin II, slip op at 14

This was an "illogical and unintended result," id., that was contrary to the fundamental ATC objective "to equitably distribute [cross-over] revenues in relation to the cost incurred to generate those revenues. ." Major Issues, slip op at 25. In order to avoid this unintended result and fulfill the fundamental objective of ATC, the Board declared that ATC should be applied to the allocation of total revenue contribution rather than total revenue, in order to ensure that each segment received sufficient revenue to at least cover its variable costs before applying ATC.[70] Id. ("This refinement is reasonable and consistent with our objective in Major Issues ") The actual ATC methodology adopted in Major Issues did not change, just the revenue to which it was applied

Because "notice is not required before every clarification or extension of an agency's principles to novel scenarios," it was appropriate for the Board to adopt Modified ATC to address this concern PPL Montana, LLC v Surface Transportation Board, 437 F 3d 1240, 1247 (D.C. Cir. 2006).

In refining application of ATC to fulfill the previously-stated intent and objectives, the Board's decision in WFA/Basin II is on solid ground Refinements to rules that are made to preserve consistency with the purpose of the rule are interpretive rules that do not require notice and comment rulemaking See, e g., Central Texas Telephone Co-Operative, Inc. v. FCC, 402 F.3d 205, 212-214 (D C Cir. 2005) (finding agency action to be an interpretive rule where agency justified action by reference to the "purpose" of the regulation at issue), Northern Indiana Public Service Company v Porter County Chapter of the Izaak Walton League of America, 423 U S. 12, 15 (1975) (affirming agency adjudication that "sensibly conform[ed] to the purpose and wording of the regulations"); Air Transport Association of America, Inc v. Federal Aviation

[70] As the Board has observed in EP715, "it had not contemplated this situation and that such a result (a revenue allocation below variable cost) 'would plainly conflict with our express purpose to find a non-biased, cost-based method '" EP715, slip op at 8 (quoting WFA/Basin II, slip op at 14)

Administration, 291 F.3d 49, 55-56 (D.C Cir 2002) (if the duties in the agency decision are "fairly encompassed" within an existing regulation, the decision is merely an interpretation), National Organization of Veteran's Advocates, Inc. v. Secretary of Veterans Affairs, 260 F.3d 1365, 1375-77 (Fed. Cir. 2001) (Agency's revision of a published regulation was an interpretive rule, and therefore exempt from APA requirements, because the revision was prompted by court decisions that had deviated from the agency's intent in originally issuing the regulation.). In WFA II, the Board did not create new duties; it simply ensured that ATC was applied consistent with its objective. Cf The Fertilizer Institute v. EPA, 935 F.2d 1306, 1308 (D C Cir 1991) (agency action is a legislative rule if agency intends to create new duties) (internal quotation omitted)

In short, the Board's refinement of ATC in WFA/Basin II was done in order to ensure that ATC fulfilled the Board's original intent, as described in Major Issues. The only difference between Original ATC and Modified ATC was the Board's interpretation that the ATC methodology should be applied to allocate total revenue contribution rather than total revenue. In all other respects, the ATC methodology itself remained unchanged Under established precedent, this was, at most, an interpretive rule exempt from APA procedures and an entirely permissible use of the Board's adjudicatory authority.

Moreover, there can be no doubt that the Board itself considers Modified ATC to be the currently applicable methodology for allocating cross-over traffic revenue. In EP715, slip op at 18 (served July 25, 2012), the Board twice referred to its "current modified ATC approach." [underline added] Furthermore, the Board clearly has determined that Original ATC created "an illogical and unintended result," WFA/Basin II at 14, that was contrary to the fundamental ATC objective "to equitably distribute [cross-over] revenues in relation to the cost incurred to generate

those revenues. .." Major Issues at 25 According to the Board, "[s]uch a result would plainly conflict with our express purpose to find a non-biased, cost-based method " WFA/Basin II, at 14, citing Major Issues at 32. Thus, even if NS has correctly identified a procedural defect in the adoption of Modified ATC, it nevertheless would be arbitrary and capricious for the Board to resort to the discredited Original ATC as a replacement

b) Modified ATC is superior to both Original and Alternate ATC.

In its Rebuttal Evidence, DuPont extensively analyzes both Original ATC and Alternate ATC, and shows that Modified ATC is superior to both. Dup. Reb. Part III.A 3.b iii As noted above, the reason that the Board switched from Original ATC to Modified ATC in WFA/Basin II was because the original ATC formula produced illogical results Specifically, the Board believed that divisions must at least cover the incumbent's cost of providing the service before any contribution can be allocated. That is still true, and thus Modified ATC is still superior to Original ATC. Dup. Reb. III-A-45 to 48 Although Alternate ATC will correct one of the flaws in Original ATC, it will still produce illogical, and therefore arbitrary and capricious, results. Dup Reb. III-A-49 to 52

In its Rebuttal Evidence, DuPont carefully reviews the critical flaws inherent in Original ATC, in that it produced illogical and biased results when applied to total revenue by allocating revenue to one segment that was insufficient to cover that segment's variable cost Dup. Reb. III-A-45 to 48 In addition, DuPont notes that Original ATC overstated the amount of revenue in excess of variable costs (the contribution) on several movements. Id. Modified ATC assures that the procedures for a SARR's revenue division conforms to bedrock economic principles by assuring that a movement's revenue at least covers each segment's variable cost prior to allocating revenues in excess of variable cost. Id. DuPont's Rebuttal Evidence also analyzes

Alternate ATC, and shows that Alternate ATC allocates far too much revenue to low density lines and strips the benefit of scale economies from high density lines, a result at odds with basic economics of railroading. Id. at III-A-49 to 52. DuPont's Rebuttal Evidence then carefully compares Original ATC, Modified ATC, and Alternate ATC under a variety of factual scenarios to show that both Original ATC and Alternate ATC produce economically absurd results, and that Modified ATC is far superior Id. at III-A-53 to 55. On the basis of this evidence, the Board should apply Modified ATC to DuPont's movements.

2) Forecasted Revenues

NS claims that DuPont's evidence is flawed in a number of areas, including the use of certain coal revenue calculation forecasts, the development of 2011 revenues for Triple Crown services, and the use of the RCAF index to project changes in the cost of fuel while using the EIA to project changes in fuel surcharge revenues DuPont accepts the first two criticisms, but strongly rejects NS's criticism of DuPont's procedures for forecasting the cost and the price of fuel.

DuPont's procedures are strongly supported by the Board's decision in AEPCO. In that decision, the Board used EIA data – as did DuPont in this case – to calculate fuel surcharge revenues, noting that AEPCO had used an acceptable method for "combining projections and revenues," and that it had produced a reasonably accurate estimate in that case.. AEPCO, slip op. at 27-28 NS argues that there was a "mismatch" between the two indices in AEPCO which the Board never addressed. But the Board specifically noted that AEPCO had acceptably "combin[ed] projections and revenues " DuPont's procedure applies the EIA forecast (as did the Board in AEPCO) to replicate NS's own fuel surcharge program. DuPont also uses the RCAF fuel component index (as forecasted by IHS Global Insight) to develop fuel costs. This is consistent with AEPCO, and more importantly, it is a recognition of the fact that NS's fuel

surcharge program revenues are divorced from NS's fuel costs in the real world. Specifically, NS's fuel surcharge program is not based on the locomotive fuel costs incurred by NS. Rather, it is based on the price of intermediate crude oil at a major trading hub. The disconnect NS claims DuPont created in its Opening Evidence is merely the disconnect NS created when it implemented and calibrated its own fuel surcharge program, which relies on a price index instead of a cost index Dup Reb. III-A-71 to 73 DuPont continues to apply the fuel surcharge procedures and indices accepted in AEPCO.

3. SAC Railroad System (Part III.B)

As noted in DuPont's Rebuttal, the DRR is an extensive system that replicates much of the NS from Chicago, IL east to Buffalo, NY, south to New Orleans, LA and includes track in New Jersey, Maryland, Tennessee and Missouri Dup. Reb. III-B-1. Although NS accepts the general scope and configuration of the DRR posited by DuPont, NS includes additional mainline, industry lead, and partially owned route miles, as well as additional interchange locations, sidings and yards.

In Part III.B of its Rebuttal, DuPont examines each of the changes to the DRR posited by NS In a few instances, such as additional tracks in some locations, certain modifications to some of DuPont's yards, track miles for certain intermodal facilities, and certain other facilities, DuPont has accepted NS's criticisms. See, e.g., Dup. Reb III-B-3, 14, 16-18. In Part III.B of its Rebuttal, DuPont rejects other changes advanced by NS, including NS's spacing of failed equipment detectors. Dup. Reb III-B-19 to 20 However, many of the changes advanced by NS are the result of NS's flawed operating plan, which DuPont addresses at length in Part III C of this Rebuttal Other changes and additions made by NS to the system described by DuPont in its Opening Evidence were the result of arguments advanced by NS in other sections of its Reply

Evidence, and DuPont has responded to these contentions in Part III D and Part III F of this Rebuttal

4. Operating Plan (Part III.C)

In Part III.C of its Reply, NS levels a broad and vitriolic attack on DuPont's operating plan, charging that the plan fails in virtually every respect. NS argues that DuPont's operating plan is simply an "automated" methodology that is "untethered" to the traffic that it selected. NS Reply III-C-8 to 9 NS maintains that DuPont failed to capture "tens of thousands" of trains that are necessary to provide complete on-SARR service and, in particular, failed to capture large numbers of local trains throughout the SARR system Id. at III-C-10 to 22. NS claims that DuPont failed to provide for uninterrupted train service for rerouted traffic that needs to be delivered along the current route. Id. at III-C-22 to 36. NS argues that DuPont provided a "flawed" yard service plan that produced "absurd" results, and one which leaves the DRR "woefully short" of yard crews and locomotives. Id. at III-C-36 to 52. NS asserts that DuPont failed to present a feasible operating plan in particular for general freight traffic Id. at III-C-52 to 68. NS contends that DuPont's operating plan fails to account for reciprocal obligations to connecting carriers in numerous respects, including the pre-blocking of cars, run-through locomotive service, distributive power, fueling, and running repairs. Id at III-C-68 to 91. NS's Reply argues that DuPont's operating plan fails to account for requirements of TIH service, including tracking, speeds, and personnel. Id at III-C-91 to 102.[71] And in a final volley, NS claims that DuPont's RTC Model is "meaningless," due to all of the flaws noted above, and because of numerous other errors in dwell time, grading, random outages, etc Id at III-C-117 to 153.

[71] NS also argues in its Reply, Part III C that "leapfrog" trains should be ignored in DuPont's operating plan, NS Reply III-C-102 to 117 a point addressed earlier in this pleading.

Having spent 116 pages of its Reply savaging DuPont's operating plan, alleging that it is "irreparably deficient,"[72] NS then spends 88 pages presenting an entirely new operating plan that NS developed using MultiRail, a program never previously accepted by the Board in SAC proceedings. This MultiRail-based NS operating plan involves the creation of entirely new DRR local, merchandise and, to some extent, automotive and intermodal trains, completely untethered from NS's real-world operations and shipment trip plans, assembled from blocks of cars removed from various NS trains at interchange points where the traffic first touches the DRR. Thus, NS's MultiRail-based operating plan provides no link between the real-world trains that move DRR traffic from the on-SARR points either to other on-SARR points or to off-SARR interchange points.

Consequently, NS's operating plan journeys to an unprecedented "never-never land," in which the SARR's operations bear no relationship to real-world operations Without this connection to the real world, the fundamental question as to whether such operations are feasible or infeasible, realistic or unrealistic, cannot be tested against how the traffic moves in the real world, leaving the Board and its staff entirely reliant on computer programs (and the experts that manipulate them) to carry out its statutory responsibilities.

As noted in Subsection C 1 above, in Rebuttal a complainant can show that its own opening evidence is superior; and/or can show that the railroads' substitute evidence is "unsupported, infeasible or unrealistic" and can, if necessary, provide corrective evidence with support, using certain defined categories of evidence. DuPont's Rebuttal Evidence shows that NS's over-the-top rhetorical and substantive attacks are utterly unfounded and in most cases

[72] NS Reply III-C-155

flatly wrong. In a few instances, DuPont accepts NS's criticisms and conforms its evidence, without the need to develop a completely new operating plan as NS has done.

In addition, DuPont's Rebuttal shows that NS's operating plan, constructed using outputs from the MultiRail program, is entirely unsupported. DuPont also shows that the NS Reply operating plan results in numerous cases of off-SARR (external) rerouted traffic, in violation of clear Board precedent. DuPont shows that NS has not demonstrated that its operating plan is capable of providing end-to-end service required by the DRR's customers, an essential factor for Board approval of a SARR operating plan. Finally, DuPont shows that, because NS has not filed the MultiRail program as part of its evidence, it impossible for the Board to verify or modify the inputs used by NS to produce the results or to test NS's assertions. Moreover, because NS has provided DuPont with just a read-only license to MultiRail, DuPont is constrained in its ability to fully verify or alter NS's MultiRail evidence. Thus, DuPont shows both that its operating plan is fully supported and feasible, and that NS's operating plan is utterly unsupported (because it cannot be tested or verified), unrealistic (because it bears no relationship to NS's real world operations), and infeasible (because it does not in fact work, is extremely inefficient, and violates clear Board standards for SARRs). NS's operating plan must therefore be rejected.

a. DuPont has submitted a feasible operating plan

"[W]here the shipper's opening evidence is feasible and supported, it is used in the Board's SAC analysis." Duke/NS, 7 S.T.B. at 100. Therefore, the Board will use the complainant's operating plan if it is feasible and supported, regardless whether the defendant's operating plan also may be feasible and supported. A shipper's operating plan need not be perfect, the Board has noted that, "[w]ere we to entertain only those rate complainants where the railroad could not poke holes in the operating plan devised by the shipper for its SARR, almost every rate challenge considered by this agency since the adoption of the SAC test would have

had to have been dismissed." PSCo/Xcel II, slip op. at 5. Thus, "[w]here the railroad has identified flaws in the shipper's evidence but has not provided evidence that can be used in the Board's SAC analysis, or where the shipper shows that the railroad's reply evidence is itself unsupported, infeasible or unrealistic, the shipper may supply corrective evidence." Duke/NS, 7 S.T.B. at 101.

In more than 65 pages of its Rebuttal, DuPont carefully addresses each of NS's criticisms of DuPont's operating plan, and shows that NS's criticisms, with their hyperinflated rhetoric, in the vast majority of instances are simply incorrect. In the few instances where NS's claims have merit, DuPont has adjusted its operations to take those few valid criticisms into account. In the text below, DuPont discusses the central parts of NS's criticism of DuPont's operating plan and summarizes the discussion in Part III.C of DuPont's Rebuttal Evidence.

I) DuPont's Operating Plan and Real-World Operations

In order to ensure that the operating plan is "capable of providing the service required by the SARR's customers," Duke/NS at 99, DuPont developed its operating plan based upon the real-world operations of NS. The Board has repeatedly held that,

> A core SAC principle is that the SARR must meet the transportation needs of the traffic it would serve. Thus, the proponent of a SARR may not assume a changed level of service to suit its proposed configuration and operating plan, unless it also presents evidence showing that the affected shippers, connecting carriers, and receivers would not object.[73]

As DuPont carefully explains in its Rebuttal, its operating plan specifically uses the same basic operating practices that NS uses in its real world operations; it operates the same trains as NS operates in its real world operations in the same basic fashion. The DRR trains are of identical consist (including loaded and empty cars), and, except for a handful of rerouted trains, follow the

[73] CP&L, 7 S.T.B. at 255, citing WTU, 1 S.T.B. at 667, McCarty Farms, 2 S.T.B. at 476; and FMC, 4 S.T.B. at 736.

identical routes (with identical pick-up and set-out locations along the way), as the corresponding NS trains. Dup. Reb III-C-3 to 7, III-C-53 to 54, and III-C-65 to 66

Nevertheless, in a one-paragraph, four-sentence opening section to its argument that DuPont did not submit a feasible operating plan, NS claims that DuPont's "automated" operating plan is "not tethered to the traffic that it selected." NS Reply III-C-9. DuPont rejects this charge categorically. DuPont's rebuttal plan links the traffic with the service that it requires DuPont used the same approach to developing its operating plan that has been used by all parties (complainants and railroads alike) in all rate reasonableness proceedings that have been decided in the last decade Dup. Reb III-C-66.

NS's assertion that DuPont's operating plan for the DRR cannot serve the needs of its customers without developing brand new trip plans, train service plans, and car blocking plans is a red-herring. By operating the DRR in the same manner as the real-world NS, the DRR effectively is using the same plans as the real-world NS Consequently, there is no need for DuPont to reinvent the wheel as NS attempts to do through the MultiRail program

NS's critique is particularly ironic, since (as discussed at length below and in DuPont's Rebuttal) it is NS's operating plan, based on its untested MultiRail software, that is completely "untethered" from the reality of NS's own operations and, therefore, the needs of NS customers both on and off the SARR, using arbitrary procedures. This fundamental flaw in NS's operating plan flies directly in the face of Board precedent that abjures litigants to base their operating plan on real-world operations. For example, in FMC, the agency rejected a shipper's operating plan because it did not utilize actual railroad practices regarding the length of trains, and consolidated multiple car shipments into unit train shipments. FMC, 4 S.T.B. at 736-737. Similarly, in Duke/CSXT, the Board rejected the shipper's operating plan that was "different from how CSXT

conducts its coal-hauling operations in the Central Appalachian Region ." and because it did not provide the same level of service that the incumbent provided to its customers. Duke/CSXT, 4 S T B. at 426. For the reasons exhaustively set out in DuPont's Rebuttal, the exact same situation exists with respect to NS's MultiRail-based operating plan Dup. Reb. III-C-65 to 108

Moreover, by untethering the operating plan for the DRR from NS's own operations. NS has made it impossible for the Board to test that operating plan against real-world conditions. If the Board accepts NS's gambit, which is directly contrary to the Board's consistent precedent, it will make it impossible for the Board in the future to be any more than the prisoner of software and of the claims of experts, "untethered" from real-world railway operations.

2) Alleged "Missing Trains" and Local Service

NS uses its most inflamed rhetoric in charging that DuPont improperly excluded over 60,000 trains from its train group, even including trains needed to provide complete on-SARR train service affecting the "vast majority of DuPont's own issue traffic " NS Reply III-C-10 to 22. The charge is absurd. In its Rebuttal, DuPont shows how the NS train even data confirms that the vast majority of these allegedly "missing" trains either do not touch the SARR in any location, are trains that would not operate over the DRR system (such as Amtrak trains. commuter trains, and foreign trains), or are trains that touch the SARR in only one location (indicating that the train does not move over the SARR at all, but simply comes to a point on the SARR, such as a yard, and either ceases movement or continues over a different line of the residual incumbent). Dup. Reb. III-C-22 to 26. In reviewing the NS's Reply, DuPont agrees that it inadvertently omitted about 6,900 of the 60,000 allegedly "missing" trains (which is a tiny proportion of the more than 185,000 trains on the DRR system), either because of flaws in NS's data or because of a coding error. and has added these trains to its Rebuttal train list Id. at III-C-

23 to 24, 26. Otherwise, DuPont utterly rejects NS's claims that there are "tens of thousands" of allegedly "missing" trains.

Additionally, NS claims that DuPont's operating plan failed to reflect consist changes of trains in local service NS Reply III-C-14 to 20 and NS Reply III-C-52 to 66 In its Rebuttal, DuPont shows that, due to the many flaws in NS's train event data, DuPont was required to make the assumption that the number of cars shown on each train reflected the average number of cars on the train over the route. Dup. Reb. III-C-60 to 62. NS took exception to this assumption, and stated that DuPont should have changed consist sizes on its trains As an initial matter, DuPont did in fact stop trains en route for road trains and certain local trains Dup. Reb III-C-61 to 62. More importantly, although NS trumpets DuPont's failure to stop local trains that operate in turn service as a fatal flaw in DuPont's operating plan, in reality the assumption has little impact on the RTC model Id at 67. However, based on NS's criticism, DuPont has revised its RTC model to reflect changes in consist sizes en route for local trains operating in turn service. Dup Reb III-C-61 to 62.

3) Rerouted Traffic

In its Opening evidence, DuPont rerouted some trains from their real-world route of operation to rationalize NS's system and to create a more efficient railroad.[74] These were all internal (i.e. on-SARR) reroutes in which the movement is originated by the DRR (or interline received by the DRR) at a location on the actual route of movement and then terminated by the DRR (or interline forwarded back to the incumbent carrier) at a location on the actual route of movement. In Reply, NS claims that DuPont's operating plan fails to provide uninterrupted train

[74] See Dup Op Narr III-C-17.

service for this rerouted traffic.[75] DuPont's Rebuttal shows that NS has confused rerouted traffic with cross-over traffic.[76]

Indeed, the first of two examples provided by NS is not even a rerouted movement at all. The DRR does not complete the service because it interchanges this traffic with the residual NS, along the actual route of movement, and the residual NS terminates the traffic. The DRR does not claim any revenue for route segments over which it does not operate. This is classic cross-over traffic, not a failure to provide uninterrupted service.

In the second of NS's two examples, which is a reroute, NS incorrectly claims that the DRR fails to complete service for traffic that originates or terminates on the original route of movement. But that traffic also is cross-over traffic that the residual NS originates or terminates in the SARR construct.

4) Yard Service

In its Reply, NS argues that DuPont's yard service plan produces "absurd results" and leaves the DRR "woefully short" of crews and locomotives. NS Reply III-C-36 to 51. In its Rebuttal Evidence, DuPont shows that the large majority of NS's criticisms are based on its flawed and unsupported MultiRail-based operating plan. DuPont also shows that, contrary to NS's allegations, its operating plan provides the elements necessary for train staging and other yard functions, in a few cases, DuPont has adjusted certain yard operations in response to valid NS criticisms, such as in the case of classification switching in certain yards. Dup. Reb. III-C-28 to 29, 121 to 128.

[75] NS Reply III-C-22 to -24.

[76] Dup. Reb. III-C-50 to -52.

5) Reciprocal Obligations With Other Carriers

In its Reply. NS charges that the DRR, in stepping into NS's shoes, has ignored the terms of NS's reciprocal obligations with other carriers. In its Rebuttal, DuPont shows that, for the most part, NS's claims are simply incorrect, and that the DRR's operating plan properly accounts for the DRR's reciprocal obligations with other carriers. including fueling and inspecting locomotives and running repairs. Dup. Reb III-C-27 to 33.

For example, NS argues in its Reply that DuPont incorrectly assumed that fueling and inspecting locomotives would be the responsibility of connecting carriers rather than the DRR NS Reply III-C-77 to 78. But in its Rebuttal, DuPont shows that the DRR's trains are fully fueled and serviced prior to departure from the originating yard, and that the average length of haul on the DRR is such that locomotives will have sufficient fuel for their runs all the way to destination Dup. Reb. III-C-31 to 32.

Similarly, NS argues that DuPont's operating plan fails to meet its reciprocity obligations to connecting carriers for running repairs. as required by the AAR interchange rules Reply at III-C-80. But in its Rebuttal. DuPont shows that NS has failed to mention that those same rules require the owning carrier to pay for any such repairs. Dup Reb. III-C-32 to 33. Since neither NS nor DuPont included the revenue, it is not appropriate to include the cost of the facilities or personnel required to make these reimbursable repairs Id at 33

In those few instances where the NS's arguments have merit. DuPont has adjusted its operations in Rebuttal to account for the proper handling of the traffic Thus, for example, DuPont determined that some NS interline service agreements with other carriers do not permit run-through power and that some additional classification switching is required to pre-block cars forwarded to connecting carriers. In those cases, DuPont has adjusted its RTC model and other evidence to reflect these adjustments. Dup. Reb. III-C-28 to 30

6) TIH shipments

In its Reply, NS argues that the DRR is not capable of tracking TIH traffic; and that DuPont does not have the appropriate personnel to handle TIH shipments. In its Rebuttal, DuPont shows that those claims are false. Dup Reb. III-C-33 to 35. DuPont does accept NS's valid criticism that DRR trains carrying TIH commodities were not limited in DuPont's Opening Evidence to a maximum speed of 50 miles per hour; accordingly, DuPont has specifically identified those trains in its RTC model and restricted their maximum speed Id at III-C-34.

7) DuPont's RTC simulation

In its Reply, NS charges that DuPont's RTC simulation is "meaningless," because of its deficient train service plan, alleged "missing" trains, and other matters discussed above. In addition, NS levels a variety of other claims, arguing among other things that DuPont used incorrect grade information In its Rebuttal, DuPont shows that half of the grade "errors" originated in NS's own RTC simulations provided in discovery, and that the effect of the "errors" are minimal Dup. Reb. III-C-54 to 55 In fact, NS treatment of this grade issue encapsulates the lack of credibility in NS's overblown rhetorical approach throughout its Reply Evidence Specifically, NS states in its Reply that correcting the grade inaccuracies in DuPont's RTC model caused trains to stall at "multiple locations along the DRR network " Reply at III-C-129. What NS doesn't say is that correcting these grade inaccuracies caused only 14 out of 7,210 trains to stall – a 0.19% error rate, and one easily corrected by the addition of power to those 14 trains. Dup Reb III-C-55. Simply put, NS can't be trusted to present a fair analysis that can be relied upon by the Board and its staff.

8) Other operating matters

Finally, in its Reply to DuPont's operating plan, NS levels a variety of other charges, including claims that DuPont's operating plan does not take into account the need for an Amtrak

curfew, foreign railroad crossings, operations in the Chicago area, and the need for light engine and hi-rail movements. In its Rebuttal, DuPont rejects some of these specific criticisms and accepts others, adjusting its RTC model accordingly. Dup Reb III-C-58 to 61

b. NS use of Multirail is unsupported, and is otherwise infeasible and unrealistic, and therefore the Board should not accept NS's operating plan.

In its Reply, NS proposes to replace the DRR's operating plan, which is based on NS's real-world operations, with an entirely made-for-litigation operating plan driven by a car-blocking and train service plan developed by NS's witnesses using a software package called MultiRail Dup Reb. III-C-65 to 67 In its Rebuttal, DuPont shows that NS's approach resulted in NS not only rerouting and changing operations for the DRR traffic group over the DRR system compared to real-world NS operations, but also rerouting and changing operations over the residual NS system, by creating impermissible off-SARR, or external, reroutes. Dup. Reb. III-C-69. In addition, NS compounded its fundamental errors in utilizing the MultiRail software by failing to submit MultiRail as part of its evidence. Thus, there are numerous legal and factual issues that require the Board to reject NS's operating plan evidence that is based on the unsupported and flawed application of its MultiRail program

1) The Board should reject NS's operating plan evidence, because NS has presented it without the MultiRail program

The Board should reject NS's operating plan evidence as unsupported, because NS developed the foundation of its operating plan using the MultiRail computer program; NS has not submitted MultiRail as part of its evidence; and without the MultiRail program, identifying the NS assumptions, modifications, and program overrides that influence the MultiRail outputs is not possible Thus, by presenting its operating evidence without the MultiRail program or any significant documentation on its algorithms, NS has made it impossible for the Board to both

verify that NS's operating plan evidence is supported and to restate the evidence Indeed, NS has submitted its operating plan evidence in a manner that frustrates "the ultimate goal of the SAC process: a proper evaluation of whether the rate being charged is reasonable." Duke/NS, 7 S.T.B. at 101.

2) Because NS has failed to support its operating plan, the Board should accept DuPont's operating plan, with the corrections DuPont has made on Rebuttal.

NS's obligation to submit supported evidence is unmistakable If a railroad fails to submit supported evidence, the shipper may correct its evidence on rebuttal,[77] and the Board will use the shipper's evidence, so long as it is supported. PSCo/Xcel II, slip op. at 5, Duke, 7 S T B. at 101; see also AEPCO, slip op. at 31 n.109 (using a restated version of shipper's corrected system configuration evidence, which was supported, where the railroad's system configuration evidence was unsupported); AEP Texas, slip op at 63, 77, 82 (using the shipper's evidence where it was supported while railroad's evidence was unsupported); TMPA, 6 S T.B. at 622, 705 (using the shipper's evidence where it was supported while railroad's evidence was unsupported).

Evidence is unsupported if it is not explained or is otherwise unverifiable. Indeed, the Board has unequivocally stated, in its original decision on stand-alone costs, that "[d]ata used to support a SAC model must be verifiable." Guidelines, 1 I.C.C 2d at 520 Thus, the Board has rejected evidence that was not supported by documentation. E.g., AEPCO, slip op. at 30-31 (declining to use railroad's system configuration because the railroad failed to provide workpapers supporting the system configuration data), AEP Texas, slip op. at 82 (refusing to include a cost additive where no workpapers were cited in support of the additive), Wisconsin

[77] The shipper's right to correct its evidence is not absolute PSCo/Xcel II, slip op at 5, Duke/NS, 7 S T.B at 101

P&L, 5 S T B. at 976 (rejecting the railroad's rate reduction claim because the railroad did not provide documentation of an agreement to reduce the rate), 1040 (declining to use the railroad's service life estimates because the railroad did not provide documentation of the data used to generate the estimates); FMC, 4 S.T.B at 738 (accepting UP's operating plan, noting that "UP presented sufficient data to allow [the Board] to verify how it developed its requirements"). The Board has rejected evidence where the party submitting it did not also explain how it derived the evidence. See, e.g., AEP Texas, slip op. at 63 (declining to use the railroad's travel expense estimate because the railroad did not explain how it developed its estimate), TMPA, slip op. at 640 (declining to use the depreciation rates, services lives, and salvage values that a party used to generate car ownership expense, where the party did not explain how it derived these items). Wisconsin P&L, 5 S T.B. at 1030 (rejecting the shipper's exclusion of certain bridges because the shipper did not provide its reasoning), 1032 (rejecting an unexplained elimination of sales tax as an expense). The Board has also rejected evidence that included assumptions that were not identified or supported with reasoning. See, e.g., AEP Texas, slip op. at 71-72 (declining to use bridge cost evidence based on an-unsupported assumption that minimal repairs will be required on bridges through the SAC analysis period); FMC, 4 S T.B. at 736 (rejecting an operating plan based on unsupported assumptions)

Indeed, the Board has rejected computer model evidence that did not meet these criteria. In TMPA, both parties derived their main-line track evidence and operating plan evidence from computer models, but each used a different model Although the shipper presented its modeling program to the Board, the program was "so poorly documented" that the Board could not "determine how the program estimates running times, nor verify that the assumptions incorporated in the model are reasonable" TMPA, 6 S.T.B. at 653. Also, the Board could not

determine whether the revisions that the shipper made in response to the railroad's criticisms solved any of the issues identified by the railroad. Id at 646 n.112 Thus, the Board rejected the shipper's evidence that was based on its model. Concerning the railroad's modeling program, the Board noted that the railroad failed to provide both the program and documentation on the program Accordingly, the Board declined to use the railroad's computer model evidence to evaluate the main-line track configuration of the SARR and, instead, used a grid analysis that the railroad submitted Id at 646. While the Board ultimately adopted the railroad's operating plan generated by the same undocumented model, it did so only because the shipper failed to carry its burden of proof, which is not the case here. Id at 653.

Likewise, the Board should reject NS's MultiRail-generated evidence because it is unsupported First, the Board cannot identify the assumptions underlying the MultiRail evidence and verify the evidence. For example, NS can adjust the standard algorithms in MultiRail by adding flow constraints and control parameters.[78] NS can also influence how MultiRail assigns cars to blocks by inputting penalties on the use of yards, yard activities, and routes.[79] NS can even adjust dwell times.[80] But without the MultiRail program, which NS has not provided, the Board cannot identify these adjustments and the assumptions that NS baked into its MultiRail-generated model of the DRR The MultiRail program provides the only interface through which any NS adjustments can be identified because the MultiRail data files that NS provided do not contain linking conventions that identify the adjustments and the parameters and data elements to which they relate.

[78] Dup Reb III-C-94 to -95

[79] Dup Reb III-C-99 to -100

[80] Dup Reb III-C-95

Without the program, NS's operating plan evidence cannot be verified NS claims that its operating plan ensures that every car in the DRR traffic group moves successfully across the DRR system [81] But a report that DuPont generated in MultiRail using NS's evidence clearly shows that NS's operating plan leaves cars stranded [82] NS also represented that, under its operating plan, all traffic blocks are assigned to trains and completely routed. But a report that DuPont generated in MultiRail using NS's evidence shows that not all blocks were assigned to trains and some blocks were routed only partially.[83] Without MultiRail, generating these reports and verifying NS's operating plan is impossible.

Also, MultiRail is necessary to verify NS's representations about the source of its evidence. For example, NS represents that MultiRail is the origin of certain data and reports that it presented to the Board in its Reply Evidence.[84] By trying to retrace NS's steps using MultiRail, DuPont was able to determine that MultiRail was not the source of this evidence [85] Without the software, DuPont would not have been able verify whether MultiRail is the source of this data, and neither can the Board

Second, NS fails to provide any explanation of how it derived the MultiRail-generated evidence, including how it balanced competing inputs By using a read-only license for MultiRail, DuPont has identified multiple user inputs that influence how MultiRail assigns railcars to blocks and processes data.[86] But NS fails to explain how these inputs were chosen or how they influenced the MultiRail model. In addition, NS does not explain routing decisions.

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[81] NS Reply III-C-161

[82] Dup Reb. III-C-89 to -90

[83] Id.

[84] Dup. Reb III-C-105 to -107

[85] Id.

[86] Dup. Reb III-C-94 to 95

including how it generated movements with unnecessary switchback loops and circuitous routings.[87] And without the read-write version of the MultiRail program, neither DuPont nor the Board can adjust NS's inputs to determine how they affect the MultiRail outputs and gain insight into how NS derived its evidence

Third, NS has not provided essential documentation to the Board supporting its use of MultiRail to generate evidence. It failed to provide documentation identifying the parameters it set within MultiRail to influence the outputs.[88] It failed to provide documentation on the assumptions that it baked into the MultiRail model.[89] It failed to provide documentation on how it balanced the service requirements of different shippers.[90] It failed to provide sufficient documentation that explains how MultiRail works and the meaning of its outputs, such as MultiRail's user manual Indeed, without the user manual, which DuPont obtained through training sessions with MultiRail's developer, Oliver Wyman, DuPont would not have been able to determine that NS overrode many of the train schedules that MultiRail generated,[91] decipher that NS's MultiRail models stranded thousands of carloads of traffic,[92] and verify that NS incorrectly represented that MultiRail was the source of certain evidence.[93]

In short, NS has not shown that it used MultiRail in a manner that generates an efficient operating plan that reflects real-world practices Board precedent confirms that the acceptability of computer model evidence turns not only on the use of an acceptable modeling program, but also the manner in which a party uses it. In AEPCO, the Board rejected an operating plan that a

[87] See Dup Reb III-C-101 to -102

[88] See Dup Reb III-C-95

[89] Id.

[90] See Dup Reb III-C-87 to -88

[91] See Dup. Reb III-C-95

[92] See Dup Reb III-C-89 to -90

[93] See Dup. Reb III-C-107.

party generated using a modeling program that it has endorsed, the RTC model, because the other party used the RTC model in a manner that better reflected the realities of real-world railroading. AEPCO, slip op. at 28-30. Similarly, in Otter Tail, both parties used the RTC model to develope their operating plans, but the Board chose the shipper's plan because the shipper's "method for development of the operating plan [was] plainly superior . . " Otter Tail, slip op at 18

3) NS presentation of its operating plan evidence without MultiRail prevents the Board from restating it.

The Board must be able to restate the evidence presented by NS. In SAC cases, the Board's duty is to determine if the challenged rate is reasonable based on a well-developed evidentiary record. PSCo/Xcel II, slip op. at 5. But the Board is not limited to the role of a passive arbiter in carrying out its duty. Id. at 3-4 It is not simply "an umpire, calling balls and strikes for the adversaries appearing before it." Id. at 3 Instead, the Board is guardian of the public interest Id. at 4.

As guardian of the public interest, the Board has the power to investigate a challenged rate and must ensure that the record is sufficient for it to determine the reasonableness of the rate. Id. at 5. Thus, when the Board finds defects in evidence submitted in rate cases, it substitutes new data into the spreadsheets and models underlying the evidence [94] See Tex Mun. Power Agency v Burlington N & Santa Fe Ry., STB Docket No 42056, slip op at 2 n 3 (Feb. 6, 2002) (recognizing that the Board often restates evidence). But such restatement is impossible if the substituted data does not cascade through the SAC analysis. For this reason, the Board has stated

[94] In fact, the Board often restates operating plan evidence. AEPCO, slip op at 41 (accepting the railroad's operating plan, but adjusting its operating statistics), WFA/Basin, slip op. at 15 (using the shipper's operating plan, with modifications); Otter Tail, at C-6 (using the shipper's operating plan, but restating the number of personnel required), IMPA, 6 S T B at 606 (using the railroad's operating plan, but the Board's own time estimates for train loading, servicing and fueling, interchanging, and unloading), Wisconsin P&L, 5 S T B at 980 (using the railroad's operating plan, with adjustments), FMC, 4 S T B at 738 (using an adjusted version of the railroad's operating plan "to address certain concerns expressed by [the shipper] on rebuttal and to exclude certain overstatements [] discovered in reviewing [the railroad's] evidence ")

that it must be able to manipulate the data that a party submits and have the ability to re-run a party's calculations on such data. Id.; General Procedures, 5 S.T.B. at 444-45.

But NS has chosen to develop and present its operating plan evidence in a manner that makes the Board a prisoner to NS's submissions. See PSCo/Xcel II, slip op at 4. Specifically, NS has voluntarily chosen to generate its operating plan evidence using MultiRail, knowing full well that any modifications to the MultiRail-generated evidence must be made using the read-write version of MultiRail. (NS Response to Complainants' Joint Reply to Pet. for Clarification 15, Feb. 22, 2013.) NS nevertheless chose to present evidence based on MultiRail without also including the MultiRail program as part of its submission to the Board.[95] Thus, the Board is stuck with the operating plan evidence that NS provided and cannot restate it.

4) Any attempt to evaluate NS's MultiRail evidence without the MultiRail program will unnecessarily delay this proceeding and be prejudicial to DuPont.

In a decision served in this proceeding on March 27, 2013, the Board made the following statement, in *dicta*.

> Should the Board decide to rely on a certain type of evidence—an issue we are not deciding at this time—the fact that the Board does not have a particular software program does not mean we would be unable to evaluate that evidence.[96]

In a footnote to that statement, the Board suggested that it could further evaluate NS's MultiRail evidence by convening a technical conference with Board staff and all parties present. But, a technical conference, although a useful tool for resolving minor differences between the parties

[95] Although NS offered to provide the Board with a temporary copy of a fully functional, read-write version of MultiRail preinstalled on a laptop, the Board stated that it was unable to accept this offer. See Letter from Rachel D. Campbell to G. Paul Moates (dated Feb. 11, 2013). DuPont also has objected to the NS offer on the grounds that provision of MultiRail to the Board would constitute an impermissible *ex parte* contact because NS refused to provide the same version of MultiRail to DuPont under the same terms. Furthermore, NS has always had a proper means available to it for providing MultiRail to the Board, which would be to include the software in its evidentiary submission, as parties in prior cases have done. See "Complainants' Joint Reply to Defendant's Petition for Clarification" (filed Feb. 14, 2013).

[96] DuPont v. NS (MultiRail Decision), STB Docket No. NOR 42125, slip op. at 3 (served Mar. 27, 2013) [footnote omitted].

and for providing the Board with a greater understanding of the evidence that has been submitted, cannot cure all of the deficiencies identified above In the case of MultiRail, only the ability to access and use the software itself permits the Board to verify the MultiRail evidence, identify the assumptions that NS input into MultiRail, understand how and where NS has deviated from the MultiRail output, and restate NS's MultiRail evidence if necessary. Because MultiRail outputs are used to develop every aspect of NS's operating plan, the Board can no more validate (and alter as necessary) the NS operating plan without the MultiRail software than it can without the RTC Model

As fully discussed in "Complainants' Joint Reply to Defendant's Petition for Clarification" (filed Feb. 14. 2013), NS was required to file and serve its Reply Evidence on November 30, 2012, which includes MultiRail to the extent the software is needed to review, understand, and validate that evidence NS chose not to do so. If it had done so, NS could have avoided the issues that caused the Board to decline NS's offer to provide the software to the Board separate from its evidentiary submission, which DuPont also explained would have been an impermissible *ex parte* communication because NS was proposing to provide the Board with a more functional version of the software than it has provided to DuPont.

Procedurally, the Board would be on shaky ground if it were to use a technical conference to permit NS to present evidence that it could and should have presented on Reply A technical conference is not the place to present new evidence. Rather, it is used to facilitate the understanding and resolution of complex issues based on the evidence already submitted by the parties Nor would a technical conference provide the Board much, if any, opportunity to see and understand MultiRail, much less evaluate the parties' evidence using MultiRail. DuPont's experts attended two full days of training just to get a basic foundation in the software features

and only began to truly understand the software after spending a substantial amount of time experimenting with it on the NS data.

If the Board solicits additional information from NS about MultiRail, whether through a technical conference or otherwise, it must at least afford DuPont an opportunity to respond to that information and adjust its evidence based on that information [97] At a minimum, due process requires an opportunity for parties in a rate case to respond to evidence and witness testimony offered by an adversary Indeed, the Board's procedural rules capture this by offering each party to a rate case an opportunity to reply to their adversary's evidence. And the Board has rejected attempts by parties to undermine these procedures by submitting evidence after their adversaries' opportunity to address the evidence had passed TMPA, at 6 S.T.B. at 692; Duke/NS, 7 S.T.B. at 138.

Given the fact that NS could and should have presented MultiRail with its Reply Evidence, there is no justification for soliciting supplemental evidence. Providing NS a second bite at the apple would be patently unfair and prejudicial to DuPont. First, permitting NS to rehabilitate its evidence is completely unnecessary. As DuPont has explained above, the Board has put railroads on clear notice that they must submit supported evidence in rate cases, or the Board may reject their evidence in favor of the shipper's supported evidence Second, DuPont has already incurred substantial expenses to prepare its rebuttal to NS's Reply Evidence. If NS submits additional evidence that is relevant to DuPont's rebuttal, these expenses will have been all for naught, and DuPont will have to incur additional expenses to overhaul its rebuttal in light of NS's new submissions. Third, while this proceeding is delayed to facilitate the rehabilitation of NS's evidence, DuPont will continue to be exposed to the challenged rates, which robs

[97] DuPont reserves its right to raise its concerns with any future solicitation by the Board of information from NS concerning MultiRail.

DuPont of the opportunity to invest in its business Frankly, given that NS's obligation to provide supported evidence is clear, and permitting NS to support its evidence now would be extremely unfair and costly to DuPont, the Board should not hesitate to allow NS to suffer the consequences of its own failed gambit.

Also, the Board's duty to investigate a challenged rate and ensure an adequate record upon which to decide a case does not compel the Board to seek supplemental information to evaluate NS's MultiRail evidence. Indeed, the Board has never held that this duty requires it to ensure that each party submits supported evidence. Instead, the Board has stated that this duty arises after a party has made a "good-faith effort to present reasonable evidence " PSCo/Xcel II, slip op at 6 Even in the AEP Texas case, where the Board ordered the parties to file supplemental evidence concerning their operating plans, the Board was not seeking to correct a defect in the support for the parties' evidence. AEP Tex. N. Co. v. BNSF Ry., STB Docket No 41191, slip op. at 2 (served Mar. 17, 2006). Rather, it was correcting "[t]he failure of the parties to present evidence that can be compared and matched up against the other party's evidence . . " Id at 1 But, here, the issue is not whether the parties' evidence can be evaluated against each other; it is whether NS has fulfilled its obligation to submit useable and supported evidence in the first instance

c. The NS RTC simulation is filled with errors.

For the reasons stated in the preceding section, the NS RTC simulation is fatally flawed from the outset because it relies upon unsupported, infeasible and unrealistic output from the MultiRail software to generate the trains and other inputs to the RTC Model. Another fatal flaw is NS's decision to model an average week rather than the required peak period Dup Reb III-C-93 to 94. DuPont also has identified additional errors that render NS's RTC simulation useless to test the configuration of the DRR.

First, NS incorrectly modeled foreign trains that cross DRR lines Instead of using actual data on the number of foreign train crossings over the real-world NS system, NS concocted greatly inflated surrogate numbers based upon outdated FRA data for highway, not rail, crossings and that expressly may not be used in litigation proceedings. Dup. Reb. III-C-108 to 111 Compounding this error, NS gave foreign trains a higher priority than DRR trains in every single instance, which has an enormous impact upon operating and investment costs Dup. Reb. III-C-58 to 60. It is inexplicable why NS would opt to develop "imaginary" foreign trains rather than incorporate its own real world data to represent those delays.

Second, due to the inability of MultiRail to identify highly inefficient turn movements and NS's failure to make simple network adjustments to prevent unnecessary turn moves in the RTC Model, the NS RTC simulation unnecessarily requires the DRR to make 2,731 turn movements during the modeled period, which is a 91% increase over DuPont's Rebuttal RTC simulation. Dup. Reb III-C-112 to 116 Each unnecessary turn move increases cycle times, locomotive hours, locomotive miles, car miles, car hours, crew hours, fuel consumption, and it places unnecessary burdens on network congestion and potentially slows down other trains that might encounter the turning train. This system-wide error universally increases the costs associated with operating NS's DRR, creating a gross overstatement of the DRR's operating costs

Thus, in light of the above, and in light the exhaustive analysis of the flaws in NS's MultiRail-based operating plan presented in DuPont's Dup. Reb III-C-65 to 108, the Board must reject NS's operating plan.

5. Operating Expenses (Part III.D)

The DRR's operating expenses were described in Part III.D of DuPont's Opening Evidence, which set forth the costs of equipment, personnel, general and administrative,

information technology and maintenance of way requirements, and the development of related service units and costs, based on the results of DuPont's RTC model simulation NS begins its discussion of the DRR's operating expenses by repeating its attacks on DuPont's operating plan, which DuPont discusses extensively in Part III C of its Rebuttal. As discussed above, in Part III C, DuPont also shows that NS's own operating plan, based on the MultiRail program, is utterly unsupported and sorely deficient

In Part III.D of its Rebuttal, DuPont explains that most of the differences between the parties' calculation of annual operating expense is accounted for by the costs for locomotive leases, railcar leases, train and engine ("T&E") personnel, operating managers, general and administrative, and maintenance of way costs. Dup. Reb. III-D-2. Most of the difference between the parties for these items is the result of NS's unfounded and incorrect operating plan, which requires more locomotives, more crews, more yards, and more switching than does DuPont's operating plan, all of which are discussed extensively in Part III.C of DuPont's Rebuttal. Id at 2. However, NS's Reply Evidence rejects DuPont's Opening Evidence on annual operating expenses on various grounds not connected to NS's unsupported and flawed operating plan, to which DuPont has responded in Part III D of its Rebuttal. Key areas of difference are discussed below

a. Locomotive lease costs

In its Opening Evidence, DuPont noted that NS failed to provide any current locomotive capital leases in response to DuPont's discovery, and therefore DuPont used publicly available information from the STB's decision in AEPCO and the public version of the defendant's reply statement in that proceeding, as well as the lease rate for locomotives based on the agency's decision in the IPA case and the public version of UP's evidence in that proceeding. See Dup Op Narr. III-D-3.

Having failed to support its position on locomotive leases with information from its own files, NS nevertheless objects to DuPont's evidence, claiming that it should not be bound by the "litigation decisions" made by other parties. NS Reply III-D-20 to 21. The argument is absurd. First of all, unlike NS, the defendant railroads in those cases actually provided the complainants with locomotive leases from which the complainant based its lease costs See AEPCO v BNSF, Docket No. 42113, AEPCO Opening Narrative, III-D-4 (January 25, 2010) and IPA v UP, Docket No. 42117, IPA Opening Narrative, III-D-4 (August 10, 2011) Moreover, contrary to NS's contention, the fact that the locomotive lease costs in those cases were uncontested – and based on actual leases – enhances their legitimacy See Dup Reb III-D-6.

Oddly enough, after criticizing DuPont's lease cost figure, NS then uses this amount, but with an upward adjustment allegedly to reflect the higher prices paid by NS during the 2008 through 2011 time period But DuPont's Rebuttal shows that NS's upward adjustment is inappropriate because the DRR, as the least-cost, most efficient railroad, is not required to pay inflated prices In addition, DuPont also shows that the DRR would have qualified for at least the same rate as the lower-cost railroad, based on the number of locomotives purchased Dup Reb. III-D-7. Finally, in its Rebuttal, DuPont shows that the lease rates relied on by NS in its Reply do not reflect the time period for the startup of the DRR, and are otherwise incorrect. Dup Reb. III-D-7 to 8. In fact, DuPont shows that, when NS's overstatements are corrected, the lease rates proposed by NS are nearly the same as the lease rates relied on by DuPont. Dup Reb III-D-9

b. Locomotive maintenance expense

As in the case of locomotive leases, NS failed to provide in discovery any information on locomotive maintenance costs specific to the various types of locomotives that it utilizes. therefore, DuPont used system average figures In its Reply, NS argues that the DRR has only

four locomotive shops on its 7,300 mile system, and argues – without a shred of evidence - that the DRR is required to have a total of ten shops In its Rebuttal, DuPont shows that NS itself has only 8 locomotive shops on its entire system, or fewer than NS claims are required by the DRR Dup. Reb III-D-11 NS's Reply Evidence on this point should therefore be rejected.

e. Fuel consumption

In its Opening Evidence, DuPont used NS's average fuel consumption rate for road and yard locomotives, based on information in NS's R-1 Report, again because NS failed to produce any information on fuel consumption by locomotive type in discovery Dup. Reb III-D-11 to 13 Again ignoring its own failure to provide relevant information, in its Reply NS arbitrarily increased the road locomotive fuel consumption rate for certain locomotives by 10 percent, based simply on horsepower differences On Rebuttal, DuPont shows that this adjustment is utterly arbitrary and unsupported, and in fact the locomotives at issue – modern, high-horsepower units – are more fuel-efficient than other models. Dup Reb. III-D-12 to 13. NS's evidence should be rejected.

d. Operating personnel

NS's approach to determining the DRR's personnel requirements reflects the mindset of a large, unionized Class I railroad that is the product of numerous mergers and employee-protective conditions As a new startup, the DRR would not be bound by that history or that managerial approach. In its Rebuttal, DuPont shows, for example, that the DRR's non-train operating personnel are very adequate, and in fact are similar to those of smaller Class I railroads of similar size to the DRR Dup. Reb. III-D-30. DuPont also shows that NS's proposed staffing produces overlapping and duplicative responsibilities, with unnecessary layers of management. See, e.g., Dup Reb. III-D-31 to 38. Moreover, while the DRR is larger than any previous SARR, it operates just 40% of the miles of railroad operated by NS Thus, rigid comparisons

with the NS are not appropriate. See, e.g., Dup. Reb. III-D-33 to 34 Where appropriate, DuPont has adjusted its staffing in response to NS's legitimate criticisms. See, e.g., Dup Reb. III-D-34, 35

e. General and administrative

On Opening, DuPont included $57.6 million for G&A costs, including costs related to 213 personnel organized into five departments, as well as materials and supplies and the outsourcing of various activities Dup. Op. Narr. III-D-13 to 17. In its Reply Evidence, NS proposes to more than triple the G&A staffing level that DuPont proposed on Opening, to more than 820 personnel, thereby almost exactly tripling DuPont's G&A cost estimate.

In Rebuttal Exhibit III-D-1, DuPont carefully and exhaustively confronts and discusses why, in virtually all cases, NS's evidence is wrong and should be rejected by the Board. DuPont strongly believes that, once the Board also examines the parties' evidence in similar detail, it will come to the same conclusion. In addition to the details discussed minutely in DuPont's Rebuttal, there are certain broad issues that the Board should keep in mind in its examination of NS's G&A proposals.

First, the underlying premise of NS's G&A evidence is that "NS's current staffing levels are likely the best evidence of what an efficient SARR that is also a Class I railroad would need" and that "NS's own G&A spending is . the best evidence of what a real-world DRR would have to spend on G&A." NS Reply III-D-75. This premise is utterly flawed for a variety of reasons, but especially because it is flatly at odds both with the entire concept of a SARR as an efficient and least-cost railroad, as well as unequivocal Board precedent that the SARR can be designed "in a manner different from, and more efficient than, the incumbent carrier's service," McCarty Farms, 3 I C C.2d at 468; see also, AEPCO, slip op. at 10

Second, NS's premise is also flawed because the G&A "benchmark" that it uses – its own G&A costs and those of CSXT, UP and BNSF[98] – is inappropriate due to substantial differences between the DRR and major Class I carriers. Although the DRR is the largest SARR that the Board has considered to date, its 8,000 miles of track is still only about a third of NS's own system and that of other major Class I's. The DRR operates only 508 trains daily, which is small compared to other Class I railroads, and it employs only a small fraction of NS's total personnel,[99] both of which facts affect the level of G&A support

Beyond the differences in the size and number of employees, there are differences in traffic and related factors that support a level of G&A costs substantially smaller than what NS has proposed for the DRR and the G&A costs experienced by the NS and other large Class I carriers For example, over 60 percent of the DRR's traffic is overhead traffic,[100] a substantially larger percentage compared to the major Class I's. NS's real-world traffic, for example, is more than three-quarters local or originated traffic and less than one-quarter overhead or received traffic.[101] Overhead traffic is less "G&A intensive," since a number of activities required by originating traffic are not necessary for overhead traffic. Moreover, the DRR's traffic base contains a large percentage of coal and intermodal traffic, where prices are set by contract, usually for relatively long periods, thus reducing the need for price negotiations by numerous marketing personnel [102] The DRR will also be privately held and will not have numerous corporate subsidiaries as does NS and other large Class I's, facts that affect a number of G&A functions, including the number and compensation for the members of the Board of Directors,

[98] NS Reply III-D-193

[99] Id. at 37

[100] Dup Reb Ex III-D-1, at 14.

[101] Id, at 20

[102] Id. 22. Other G&A functions will also be affected by the large percentage of coal traffic, such as claims, where coal has a very low claim rate Id. at 43.

public relations, tax preparation, etc [103] Moreover, unlike NS, the DRR is not burdened with a corporate history that includes many mergers and consolidations, necessitating the "marriage" of each merging partner's overhead and the retention of multiple layers of management.[104] As a new entrant, the DRR can take advantage of the latest in marketing practices and pricing technology.[105]

In fact, as DuPont's Rebuttal shows, when the DRR's G&A costs are "benchmarked" against more relevant comparisons – similar-sized current and past Class I rail carriers, such as the Chicago and North Western, the NW, the ICG, and the SOU, all of which are or were similar in route miles and revenue - the DRR's G&A staffing of 218 personnel is exactly on target. Dup. Reb. Ex III-D-1, at 5.

Third, the NS's G&A staffing plan is simply bloated - filled with unnecessary and overlapping functions, seemingly proposed just to increase its size and cost For example, in its Marketing Department, NS proposes 73 employees just for the General Freight section, with 30 Product Managers and 40 National Account managers But the responsibilities described by NS overlap, and there is no attempt to describe why such a large force is necessary·

Rebuttal Exhibit III-D-1
Table 4
Example Of Overlapping Position Descriptions In NS Staffing

	Assistant Product Manager (1)	National Account Manager (2)
1.	"Formulate decisions to secure and maintain business on assigned products and related articles"	"This position is accountable for maintaining and increasing business levels with assigned national accounts"
2.	"generat[e] and maintain[ ] profitable freight revenue"	"develop new business and retain existing business"

[103] See, e.g., Dup. Reb Ex III-D-1, at 18, 19, 33-34

[104] Id, at 12-13

[105] Id, at 13.

3	"negotiations on assigned commodities with customers"	"negotiate rates, service, equipment and any related needs"
4	"improving market share"	"increase market share"
5.	"continuing correspondence with shippers must be maintained"	"develop[ ] relationships with key customers"
6	"Position requires extensive knowledge and understanding of markets"	"Analyze and provide accurate market intelligence"
7.	"Utilize all available resources within the Marketing organization, as well as other departments"	"Use all available resources. Work with Marketing and other departments as required"
8	"general[e] greater customer satisfaction"	"find[ ] creative solutions to customer needs"

Source NS Reply e-workpapers "Product Manager Job Description doc" and "Account Manager Job Description.doc."

Dup Reb Ex III-D-1, at 25 In some cases, NS's plans for the DRR even exceed its own "benchmark " For example, within its proposed Intermodal Group of the Marketing Department, the real-world NS is divided into three sections, Premium, Domestic and International In the DRR's world, however, NS adds a completely unnecessary fourth section, Planning and Yield Management Id at 26

Finally, the gigantic staffing proposed by NS utterly ignores STB precedent. For example, on Reply, NS creates a Finance and Accounting staff consisting of an incredible 289 persons, a number that exceeds the entire G&A staff accepted by the Board in any prior rate case before the agency [106] In AEPCO, its most recent SAC decision, the Board approved a 32-person staff for Finance and Accounting, which is 0 0139 staff per million of SAC revenue.[107] NS's proposal in this case is nearly four times that figure, at 0.0515 staff per million.[108] In recent past

[106] Cf Duke/NS (63 total G&A with 24 in Finance & Accounting), Duke/CSXT (59 total G&A with 21 in Finance & Accounting); CP&L (63 total G&A with 24 in Finance & Accounting), PSCo/Xcel (51 total G&A with 16 in Finance & Accounting); AEP Texas (66 total G&A with 21 in Finance & Accounting – not including 11), Otter Tail (55 total G&A with 25 in Finance & Accounting), TMPA (63 total G&A with 23 in Accounting/Finance); *WFA/Basin* (39 total G&A with 15 in Finance & Accounting), and AEPCO (225 total G&A with 32 in Finance and Accounting)

[107] See AEPCO, slip op 55, 144 (based on 2010 revenue of $2 309 billion).

[108] See NS Reply Ex. III-A-1 (based on 2010 revenue of $5 611 billion)

cases, the Board has rejected carrier efforts to gold-plate a SARR's Finance and Accounting department,[109] and the Board should do so here. Similarly, NS has proposed a huge Legal and Administration Department consisting of 232 persons, over five times the number of persons in DuPont's plan. In AEPCO, the Board approved a 29-person staff for Legal and Administrative, which is 0 0126 staff per million of SARR revenue.[110] NS's proposal in this case is nearly three times that benchmark

For all of these reasons and those described in DuPont's Rebuttal, NS's G&A costs should be rejected by the Board.

f. Maintenance of way

DuPont's MOW plan in its Opening Evidence was described in Exhibit III-D-3 In Reply, NS proposed a MOW plan with more than double DuPont's staffing level. DuPont explains in Rebuttal Exhibit III-D-3 that NS's plan is based on flawed assumptions and contains unnecessary departments, new positions, and extra personnel that would not be required for the MOW operations of the DRR In particular, DuPont explains that NS's experts failed to take into account the fact that the DRR system is a newly-constructed system, unlike the much larger and older NS system. Dup. Reb. Ex. III-D-2, at 2-8

NS also bases its MOW plan on practices of carriers thirty or forty years ago. In particular, NS's MOW plan for the DRR is based on Roadmaster territories of just over 100 route miles, an anachronistic and unrealistic standard even compared to its own system and the modern-day practices of the industry, in which the length of Roadmaster territories has been

[109] See, e g., AEP Texas, at 55-57 (rejecting additional employees for the financial reporting function, the revenue analysis/budgeting function, and the real estate function); TMPA, at 681-83 (rejecting effort to add 37 members to the finance/accounting staff), WTA/Basin, at 44-45 (rejecting effort to add employees for the financial reporting function, the budgeting and purchasing function, the real estate function, and 10 miscellaneous clerks, analysts, managers, and directors), and Otter Tail, at C-9 (rejecting effort to revenue accounting and financial reporting employees, and revenue analysts to handle "such matters as overcharging, undercharging, miscoded bills, etc ")

[110] See AEPCO, slip op 55, 144 (based on 2010 revenue of $2.309 billion).

trending upward due to a variety of factors Dup. Reb. Ex. III-D-3, at 4-5, 10-13, 16-23. Because NS doubled the number of Roadmasters in DuPont's MOW plan, it arbitrarily assumed that nearly all MOW personnel and equipment automatically would double, without explanation or justification, which accounts for the vast majority of the difference between the parties' MOW costs. For these and the many other reasons detailed in Rebuttal Exhibit III-D-3, the Board should reject NS's MOW plan.

g. Insurance

In its Opening Evidence, DuPont estimated the DRR's insurance costs using NS's own 2009 insurance ratio calculated from NS's R-1 Annual Report. NS argues that this evidence is somehow "cherry picked," and proposes to use a three-year average Dup. Reb. III-D-65. But DuPont's Rebuttal shows that the insurance figure proposed by NS – close to double NS's own average – is based on insurance ratios that are inappropriate comparisons Dup Reb III-D-64 to 65 Moreover, use of a single-year insurance figure is consistent with many other categories of costs, and is not unusual in SAC proceedings Dup. Reb III-D-65 NS's insurance expense should be rejected

h. Ad valorem tax

NS rejects DuPont's calculation of ad valorem taxes in a number of instances, arguing that the DRR, as a least-cost, most efficient carrier, would have a "high income value." NS Reply III-D-279. In its Rebuttal, DuPont shows that NS's argument is internally inconsistent, and that its calculations are flawed. Dup. Reb. III-D-66 to 68. DuPont's methodology is consistent with prior Board decisions[111] and should be accepted.

[111] TMC, 4 S T B at 843, TMPA, 6 S T B at 690

6. Non-Road Property Investment (Part III.E)

DuPont's Opening Evidence described non-road property investment as including locomotives, railcars and other equipment On Reply, NS addressed these items by indicating that they were addressed elsewhere in NS's evidence DuPont addresses NS's criticisms in Parts III.C, III D, and III.F. In Part III.E, DuPont accepts a minor NS adjustment to its miles of track owned by others.

7. Road Property Investment (Part III.F)

DuPont's Opening road property evidence in Part III F presented feasible and well-supported road property investment costs for the SARR. In Part III.F of its Reply, NS argues that DuPont's road property investment costs are greatly understated, and proposes total road property investment costs that are over eighty percent (80%) higher than those presented by DuPont in its Opening. As explained in detail in Part III.F of DuPont's Rebuttal, NS's road property investment costs are greatly overstated and, in many instances, are not adequately supported

As the exhaustive treatment in DuPont's Rebuttal Part III.F discusses, there are many reasons for NS's massive overstatement of road property investment costs But there is at least one consistent pattern on issue after issue, NS ignores or flouts consistent Board precedent governing a wide variety of elements of road property investment costs, such as the following:

- NS proposes stripping costs that are inconsistent with the agency's recent decisions in PSCo/Xcel, 7 S T.B at 671, AEP Texas, slip op. at 79, and AEPCO, slip op. at 84-85 See Dup. Reb III-F-43
- NS includes undercutting costs, an item repeatedly rejected by the Board. See WFA/Basin, slip op. at 83, AEP Texas, slip op. at 79, Duke/NS, 7 S.T.B at 176, CP&L, 7 S.T B at 313. See Dup. Reb. III-F-44
- NS advocates a final grading additive that has been rejected in at least four past agency decisions, in AEP Texas, slip op. at 82-83; Duke/NS, 7 S.T.B. at 176:Duke/NS, 2 S.T B at 480; and CP&L, 7 S.T B at 313-314. See Dup. Reb. III-F-48.

- NS includes an adjustment for "swell" that was rejected in AEPCO, slip op at 92. See Dup Reb. III-F-49.
- NS supports an increase in retaining wall quantities that was specifically rejected in the Board's recent decisions in AEPCO, slip op. at 84 and AEP Texas, slip op. at 84. See Dup. Reb. III-F-61.
- NS includes over $265 million for lighting costs for night time work, an additive rejected by the Board in Otter Tail, slip op at D-18. See Dup. Reb III-F-67
- NS added $112 million in mobilization costs for land, ignoring STB consistent precedent that holds that a mobilization factor should only be applied to construction costs AEPCO, slip op. at 132, FMC, 4 S T B at 818; and APS, 2 S T.B. at 401. Dup. Reb. III-F-143
- NS added costs to account for alleged lost production due to winter cold and rainfall But this additive flies in the face of Board precedent in Otter Tail, where the Board rejected a similar added cost for winter construction (in a far more challenging weather zone), slip op. at D-18, and in McCarty Farms, 2 S T B. at 484, n.52 Dup Reb. III-F-146.

As discussed in DuPont's Rebuttal, in no case did NS carry its burden of proof to show that the Board should depart from its clear precedent.

There are several key areas of difference between the parties in calculating road property investment.

a. Land

On Opening, DuPont's base land valuation was approximately $3.1 billion, on Reply, NS advocated a base land valuation of $4 1 billion, or a billion dollars higher In a comprehensive Rebuttal report submitted as Rebuttal Exhibit III-F-2, DuPont exhaustively analyzes NS's valuation and concludes that NS applied a mathematical and highly mechanized approach that did not apply basic appraisal principles In Rebuttal, DuPont's appraisal team found that the land values used by NS frequently overstated the actual sales price in their data sets, thus overstating the base land value. NS failed to account for differences in parcel size – a key determinant of land value – in determining comparable sales NS failed to consider the quantity and quality of data available NS applied analytical techniques that resulted in valuations that were unsupported by the sales. NS valuation of land should be rejected

NS also vehemently, and disingenuously, accuses DuPont of using 2009 real estate values for land that the DRR would acquire in 2007 NS Reply III-F-4. That is incorrect and NS knows it. Although the appraisal valuation date is June 1, 2009, DuPont adjusted the 2009 valuation back to the DRR construction period beginning in 2007 [112] NS's attempt to pretend otherwise is willful blindness because, at page III-H-2 of its Reply, NS acknowledges that "DuPont's land valuation witness estimated 2009 land values and discounted those values back to the DRR construction period using an index that does not reflect the correct time frame for the DRR's land acquisition." DuPont responds to the propriety of its index in Part III G The salient point of this quote is that it proves NS wrongly accused DuPont of doing something that NS knew was not true in NS Reply III-F-1

Furthermore, this is not a case of DuPont trying to use a new methodology in order to deflate land values. DuPont used the same methodology to value land as both shippers and railroads in other SAC cases. For example, in the IPA case, UP's reply stated that "[f]or land investments, IPA's land valuation witness estimated 2011 land values and discounted those values back to the IRR construction period."[113] In the AEPCO case, BNSF/UP's reply evidence reveals that AEPCO adjusted the value of land back to the start of construction.[114] BNSF/UP agreed with AEPCO's land valuation, but not with the index used by AEPCO to adjust the land value to the start of SARR construction [115] In its decision, the Board did not mention the adjustment back to the start of SARR construction, but it did apply the adjustment index used by

[112] See Dup Op Ex III-H-1, Table C (showing that the June 2009 appraisal values were adjusted back in time to $3 329 billion as of June 1, 2007)

[113] See UP Reply Evidence at III H-2 (filed Nov 10, 2011) in Intermountain Power Agency v Union Pacific Railroad Company, STB Docket No 42127. The SARR in IPA would have begun operations on January 1, 2011. See UP Reply at I-1

[114] See BNSF/UP Reply at III.H-1 (filed May 7, 2010) (noting that AEPCO "estimated 2009 land values and discounted those values back to the ANR construction period"). January 1, 2009 was the start of SARR operations See AEPCO Opening Evidence at I-7, I-26, and III-F-7 (filed Jun 25, 2010)

[115] See BNSF/UP Reply at III F-2 (filed May 7, 2010)

AEPCO rather than the one proposed by BNSF/UP.[116] Like the parties in IPA and AEPCO, and nearly every other SAC case, DuPont has simply adjusted the real estate valuation back to the appropriate date in the construction schedule during application of the DCF model.

b. Roadbed Preparation

In its Opening Evidence, DuPont relied on actual experience from the Trestle Hollow Project for several of its construction unit costs, including earthwork unit costs. In its Reply, NS attacks DuPont's decision not to use unit costs from the Means Handbook and DuPont's use of figures from the Trestle Hollow Project. NS Reply III-F-38 to 51. In its Rebuttal, DuPont addresses each of these contentions. Dup. Reb III-F-15 to 28

The use of actual costs is preferable to Means Handbook costs because Means does not, and cannot, recognize the economies of scale of large railroad projects such as the DRR. Dup. Reb III-F-16 to 17. Indeed, Means itself recognizes that "[e]conomies of scale can reduce costs for large projects." See Dup Reb. III-F-17. In the recent WFA/Basin and AEPCO cases, the defendant railroad, in its responses to the complainant's discovery, provided information on earthwork cost data for actual projects, i.e., information on real projects, used instead of Means Handbook unit costs and those costs were used by the Board.

In this case, DuPont's expert, Mr Harvey Crouch, who was a Track Supervisor and Project Engineer for NS and who designed over 30 capital projects for NS, actually oversaw the Trestle Hollow Project, which, though not on NS itself, was located in the heart of the NS system in Tennessee See Dup Reb. III-F-17 Though NS attempts to discredit the Trestle Hollow Project as small, isolated and atypical, DuPont's witness shows that, in reality, the Trestle Hollow Project was in fact a particularly challenging one, involving construction of a

[116] See AEPCO, slip op at 138-139 (served Nov 22, 2011)

complicated new alignment constructed in difficult conditions, including steep terrain requiring deep cuts and high fills. See Dup Reb. III-F-18 to 19. The Trestle Hollow Project was more difficult than what the DRR would encounter on many of the lines that it is replicating, yet DuPont only applied the Trestle Hollow cost to non-adverse common excavation and increased the cost for adverse territory Thus. DuPont's approach was conservative.

DuPont used the Trestle Hollow Project unit cost because it is a supportable, feasible and superior real-world substitute for the Means Handbook costs for common earthwork. DuPont's use of the Trestle Hollow Project unit cost reflects the use of actual earthwork costs from a contractor's bid in the same way that actual costs were substituted for Means Handbook costs in WFA/Basin and AEPCO As shown in WFA/Basin, AEPCO and this proceeding, actual bids from contractors are lower than Means Handbook costs. This should be expected as the Means Handbook costs do not include any projects comparable in size to a stand-alone railroad such as the DRR.

DuPont also discusses NS's other attempts to discredit the Trestle Hollow Project, and shows that this use of actual costs in a major rail construction project was fully supportive and representative of the costs that the DRR would incur in building its line. Dup Reb. III-F-15 to 28.

c. PTC Installation

In its Opening Evidence, DuPont explained that, rather than install a PTC system as an overlay to a CTC system, the DRR, as a least-cost, most efficient rail carrier, would install a PTC system from the outset, in order to eliminate redundant expenditures and reduce total costs In Reply, NS disagreed with DuPont's approach, arguing that DuPont would have to first install a CTC system and then install PTC as an overlay. NS is incorrect.

Aside from its faulty logic in claiming that, because NS had to install PTC as an overlay, the DRR must do so, NS is simply wrong on the facts NS argues that the DRR could not install PTC at the outset of operations because PTC technology and equipment did not exist in 2009 But in Rebuttal, DuPont shows that PTC technology existed for many years prior to 2009 both in Europe and the U.S. Dup Reb. III-F-109 to 110. DuPont shows that the claimed lack of radio frequency needed for PTC would not be a barrier for the DRR Id at 111 to 112 The claimed difficulties in implementing PTC in the United States at the current time are not because PTC technology does not exist, but because of the difficulty of overlaying a PTC system on a CTC system in the middle of ongoing rail operations. Id at 111 The fact of the matter is that, if any railroad were being constructed from scratch today, it would not begin with a CTC system and then overlay PTC just a short time in the future it would begin from the start with a PTC system. The Board should reject NS's arguments on this point, and accept DuPont's PTC costs. See Dup. Reb. III-F-117 to 118

d. Partially-Owned Lines

In its Reply Section III-F-13. NS argues that the DRR must pay for the construction of jointly held lines over which the DRR operates via operating agreements with the entities that own the lines NS argues that, because NS is an equity owner of the lines in question, the DRR must pay a portion of the hypothetical construction costs of the segments, equal to the NS ownership percentage in the lines

In its Rebuttal, DuPont shows that NS is wrong because the joint facility railroads are third party entities and not co-defendants in this case, which is different from the AEPCO 2005 decision cited by the NS Dup. Reb III-F-148 to 149. Moreover. DuPont shows that the ownership interest in several of these lines is held by NS Corporation, not NS Rail, and the DRR is stepping into the shoes of NS Rail. Dup Reb. III-F-149 to 153.

However, even if the Board were to agree with NS's assertion that the DRR is required to acquire partial ownership rights, DuPont shows that NS has employed an incorrect methodology to determine the amount that the DRR would have to pay. Specifically, NS improperly substitutes replacement costs for ownership costs in calculating the amount that the DRR would have to pay, a position directly contrary to NS's own ownership stake in these entities and the nature of the ownership stake of the other participants in these arrangements. Dup Reb. III-F-155 to 159.

Finally, DuPont shows that, though NS argues that the DRR would have to purchase an ownership interest, NS fails to include offsetting revenues. Dup. Reb. III-F-159 to 164. DuPont provides the Board with information necessary to calculate the earnings that would accrue to the DRR if the DRR was required to acquire an ownership stake in these assets. Dup Reb. III-F-164

8. DCF Analysis (Part III.G)

In Part III.G of its Reply, NS raises various issues concerning DuPont's DCF analysis, especially involving the calculation of the cost of capital and its use of historic land values to forecast inflation in future land values. At the same time, NS improperly seeks major alterations to the Board's established approaches regarding such matters as equity flotation costs and other matters

a. Cost of capital

NS accepts DuPont's use of the railroad industry cost of capital, but makes one update and two "corrections." DuPont accepts the use of the updated 2011 cost of capital, but rejects NS's partial-year weighting of the 2006 cost of capital and its inclusion of equity flotation costs.

With respect to NS's partial year weighting of the 2006 cost of capital, STB precedent calls for using the simple average of all of the cost of equity estimates for each year dating back to the SARR's initial construction, even if the construction period only includes partial years. In

AEP Texas, slip op at 107-108, the Board noted that "in any event, as many years as possible should be examined to derive a more accurate average (cost of equity)." The policy is well-founded. As DuPont's evidence explains, debt capital is usually issued with a fixed rate, and therefore it is logical to calculate a weighted cost of debt, since the cost of debt can be accurately calculated at any point in time But the cost of equity is not fixed· it changes constantly, and its future is unknown. Dup. Reb III-G-3. Thus, the Board is interested in calculating an average using as many years as possible, to account for the ever-changing nature of equity costs. To weight a particular year by the number of months is inconsistent with that goal and the very nature of equity. NS, in seeking to change a well-established principle, has not carried its burden. See, e.g., PSCo/Xcel, 7 S.T.B at 644; WFA/Basin, slip op at 53-54 and 68-69; Otter Tail, slip op at C-16

NS asserts that DuPont improperly omitted equity flotation costs. NS Reply at III-G-3. NS acknowledges that, until 2007, the Board had consistently rejected railroad attempts to include equity flotation in the cost of capital calculation, but NS contends that the Board "changed its approach" in the AEP Texas case. NS Reply at III-G-3 to 4. However, NS's characterization of AEP Texas is incorrect

As an initial matter, simple chronology reveals that the Board did not "change[ ] its approach" in AEP Texas. Several years after its decision in AEP Texas, the Board again refused to include an equity flotation fee in the DCF calculation despite the best arguments of the defendant railroads. See AEPCO, slip op. at 138. In fact, the Board specifically stated that its "longstanding precedent" required rejecting the equity flotation fee proposed by BNSF and UP AEPCO, slip op at 138

In that case, BNSF and UP had made the exact same allegation as NS is now making – that the Board had "changed its approach" in 2007 with AEP Texas. See Joint Reply Evidence of BNSF and UP, at III-G-5 (filed May 7, 2010), in AEPCO v. BNSF and UP. The Board rejected the argument of BNSF and UP then, and the Board should similarly reject the same argument being made now by NS.

Furthermore, AEP Texas can be easily distinguished from the current case. In AEP Texas, both parties had agreed to include an equity flotation fee[117], and the fee was only 0.13%. See AEP Texas, slip op. at 108. See also Rebuttal Evidence of AEP Texas, at III-G-5 (filed July 27, 2004), in AEP Texas v. BNSF. In contrast, DuPont vehemently does not agree that an equity flotation fee is appropriate, and NS has proposed a fee of 2.1%, or 16 times the level used in AEP Texas. As the Board stated in AEPCO, flotation fees are already included in the Board's cost-of-capital calculation. AEPCO, slip op. at 138.

More broadly, if the Board were to use a flotation fee as requested by NS, then the Board would also have to replace the railroad industry cost-of-capital in the DCF model. As the Board stated in Wisconsin P&L:

> A serious argument that an equity flotation cost should be included for a stand-alone railroad would require a re-examination of the use of the general rail industry cost-of-capital rate in the DCF model. Because of the complexities associated with such an endeavor, the parties to SAC cases have found it preferable to use the rail industry's cost-of-capital rate as a surrogate for that of the stand-alone railroad.

Wisconsin P&L, 5 S.T.B at 1040 n.200 (2001). NS has not proposed any replacement for the rail industry cost-of-capital in the DCF model and, consequently, the NS Reply Evidence is inconsistent and the Board should not use the equity flotation fee desired by NS.

[117] In AEP Texas, the complainant apparently included an equity flotation fee as part of its plan to have the SARR refinance its construction costs soon after the construction was completed. See Opening Evidence of AEP Texas, at III-G-5 (filed Mar. 1, 2004) and Rebuttal Evidence of AEP Texas, at III-G-5 (filed July 27, 2004), in AEP Texas v. BNSF.

Finally, NS's attempt to buttress its position with reference to the Initial Public Offering of Facebook must necessarily fail. See NS Reply at III-G-6. As DuPont explains in its Rebuttal Evidence, NS has not even begun to explain why a social media website is an appropriate benchmark for the railroad industry, especially given the fact that one of the four major U.S. railroads is privately-owned, and given the differences in risk between the railroad industry and a social media provider, especially that of Facebook. Dup. Reb. III-G-6. The Board should adhere to its "longstanding precedent"[118] and reject NS's attempt to include an equity flotation fee.

b. Inflation indices for land

In its Reply, NS does not accept DuPont's inflation index for land. The differences between NS's calculation are due to NS's different approaches for indexing rural and urban land. NS argues that both rural and urban land values will increase at the rate of inflation, based upon the unsupported position of its real estate consultant. In contrast, in its Rebuttal Evidence, DuPont has not only followed the procedures accepted by the STB in prior rate cases, but DuPont has also submitted evidence showing that the basis for NS's assertions is incorrect. See Dup. Reb. III-G-8 to 10, Dup. Reb. Ex. III-G-1.

With respect to rural land values, DuPont shows that the basis for NS's position, that there is a direct link between farm income and farm land values, is not supported by recent studies. Dup. Reb. Ex. III-G-1, at 2-5. DuPont shows, for example, that current USDA research has shown little correlation between farm values and farm income, and that nonagricultural factors (such as the possibility of farmland development) are a much greater influence on farmland value than they have been historically. Id. Similarly, with respect to urban land values, DuPont shows that the NS's projections are based on the use of data with a limited timespan, that

[118] Other than AEPCO, the flotation fee has been rejected in a wide range of decisions, including Wisconsin P&L, 5 S.T.B. at 1040 (2001), IMPA, 6 S.T.B. at 751 (2003); Duke/NS, 7 S.T.B. at 123 (2003), CP&L, 7 S.T.B. at 262 (2003), Duke/CSXT, 7 S.T.B. at 433 (2004), PSCo/Xcel, 7 S.T.B. at 659 (2004), Otter Tail, slip op. at E-2, WFA/Basin, slip op. at 135.

the data is misused; and that the data that NS used was neither final nor representative of the values claimed. Id at 6 to 12.

9. Results of SAC Analysis (Part III.H)

DuPont has incorporated in its DCF model the limited number of areas where it has accepted NS's criticisms in Parts A through G. Dup. Reb III-H-1. However, DuPont rejects the NS's Reply DCF model in a number of respects, including its use of a weighted partial-year cost of capital and NS's improper inclusion of equity flotation costs, for the reasons discussed in previous sections. Id. In its Rebuttal, DuPont incorporates its updated road property investment values discussed in Part III.F, and rejects NS's land valuation approach including the indexing of land values to 2007, again as discussed in previous sections Id at 1 to 2

In Part-III-H of its Rebuttal Evidence, DuPont continues to reject a number of NS's DCF calculations shown in Part III.H of NS's Reply, including: the interest schedule of assets purchased with debt; the present value of replacement cost; the use of bonus depreciation, NS's use of 20-year tax lives for certain property; the capital structure of the DRR; PTC investment, and, the proper index of operating expenses. DuPont also rejects NS's contentions that the Board's MMM methodology contains various errors. The most significant of these issues are discussed below.

a. Interest schedule on debt

With respect to the interest schedule of assets purchased with debt capital, DuPont explained in its Opening Evidence that it had structured its interest payment on debt capital in the same fashion as real-world Class I railroads, i.e., through coupon payments consisting of fixed interest payments (a stable capital structure), rather than assuming that the DRR would issue debt similar to a typical home mortgage loan, i.e., through quarterly payments that contained a principal repayment component and an interest component which changed over time. On Reply,

NS challenged DuPont's approach. In its Rebuttal, DuPont carefully explained why NS's arguments were wrong Dup. Reb. III-H-2 to 4. For the reasons explained, DuPont continues to believe that its interest schedule of assets purchased with debt capital is the superior approach precisely because it is the approach used by real-world railroads.

b. Bonus depreciation

On Opening, the DRR took advantage of the "bonus" depreciation provisions enacted as part of the Economic Stimulus Act of 2008 and the American Reinvestment and Recovery Act of 2009. In its Reply, NS alleges that it would be inappropriate to permit the DRR to avail itself of these bonus depreciation benefits for virtually all of the DRR's road property investment. NS Reply at III-H-5 to 6 But as DuPont explained in its Opening Evidence, the Board would impose an impermissible barrier to entry, in violation of contestable market theory, if it denied the SARR access to the very same bonus depreciation provisions that are available to, and have in fact been used by, the incumbent railroad.

NS attempts to turn contestable market theory on its head by claiming that bonus depreciation should not be allowed because it places the DRR at an advantage relative to NS. NS Reply at III-H-6 But DuPont shows in its Rebuttal that NS's contentions are simply wrong and would violate contestable market theory.

First, the fact that the DRR might have an advantage relative to NS is a red-herring. The SAC concept is predicated upon developing an "optimally efficient" SARR, which means that the SARR necessarily will have many advantages over the incumbent. NS's logic would require the SARR to use the same production techniques that NS used to build the original rail lines a century ago, rather than more efficient modern techniques. Dup. Reb. III-11-6 DuPont also shows that NS mischaracterizes the nature of the SARR assumption of unconstrained resources, and ignores the "crucial feature" of contestable market theory – the possibility of "hit and run

entry" - as developed by William Baumol Dup Reb III-H-7 to 8. At bottom, NS recognizes that the SARR must incur current market prices at the time construction actually occurs. While NS has no problem with this fact, it would deny the SARR the benefit of favorable tax depreciation schedules available during the same time period Tax depreciation is a temporal cost factor just like most other costs that the SARR must incur It would be arbitrary to deny the SARR the benefit of "current market prices" for just this one factor. Dup. Reb. III-H-7

Indeed, while NS acknowledges that the SARR is entitled to some bonus depreciation benefit, it attempts to limit that benefit based upon the extent to which NS itself has benefited from those provisions. As explained in detail in DuPont's Rebuttal, there is no rational basis for this limitation Dup Reb. III-H-7.

Finally, any concern that the Board might have over the temporary nature of bonus depreciation should be alleviated by Congress' recent extension of the law On January 2, President Obama signed the American Taxpayer Relief Act ("ATRA") to temporarily avert the "fiscal cliff." Section 331 of the new law extends the 50 percent bonus depreciation through 2013, meaning bonus depreciation will have been in effect for at least six (6) years However, special provisions in the ATRA allow certain assets, including transportation assets, to enjoy the bonus depreciation through 2014 This means that transportation companies such as NS will be able to apply bonus depreciation to certain of its assets for at least seven (7) years. There is absolutely no reason to deprive the DRR of the benefits of bonus depreciation

c. DRR capital structure

As part of its Opening Evidence, DuPont described a disconnect that exists in the DCF model used by the Board. Dup Op. Narr. III-H-8 to 9. DuPont noted that, although the DCF model assumes the SARR capital structure (the debt-equity mix) will remain constant in perpetuity, the DCF model also assumes that, after year 20 and until the first assets are replaced

in the replacement level of the DCF, the SARR has zero debt. The effect of this disconnect is to eliminate the benefit of tax shielding interest payments even though the SARR is assumed to have debt in its capital structure. DuPont fixed this disconnect by including an interest tax shield perpetuity in calculation of the terminal value of the DRR Dup. Op. Narr III-H-9.

On Reply, NS recognized that such a disconnect exists, but NS refused to accept that a correction is needed because the disconnect is allegedly a "mainstay of the Board's DCF model since *Coal Trading* and *McCarty Farms*." NS Reply III-H-9 NS did not provide any citations to these two cases, so it is not entirely clear why NS mentioned them. In Coal Trading, the ICC allowed the debt-equity mix to change over time as debt was paid off;[119] conversely, McCarty Farms, involved use of a constant capital structure.[120] Crucially, however, neither case included a statement by the agency approving, let alone simply recognizing the existence of, the disconnect that DuPont described in its Opening The simple fact that an error has existed for several years is not a legitimate justification for its continued existence.

NS also claimed that the Board "affirmed" this disconnect in the Major Issues proceeding,[121] but no such affirmation occurred. In Major Issues, the Board simply rejected requests to amortize debt over the lives of the SARR assets; instead, the Board retained the use of a 20-year period to amortize debt Major Issues, slip op at 65 The Board did not even address tax shielding interest payments or the SARR's debt-equity mix beyond year 20. Consequently, the Board did not "affirm" the disconnect described by DuPont

Finally, NS has proposed a separate fix in the event the Board determines that the disconnect should be corrected NS proposes that the Board "revert back" to the method used in

[119] See Coal Trading, 6 I C.C 2d at 379-380.

[120] See McCarty Farms, Inc. v. Burlington N., Inc, 2 S T.B 461, 522 n.123 (1997).

[121] See NS Reply III-11-9

Coal Trading, where the SARR capital structure is recalculated as the debt is amortized NS Reply III-H-10. The method used in Coal Trading was justifiably discarded soon after the decision was issued, and the Board should not revive it In Nevada Power, the ICC determined that "it is more realistic to assume that the SARR would issue new debt as old debt is amortized" because "[t]his is the procedure followed by many large corporations, including most U S railroads, as a way of reducing the overall cost of capital " Nevada Power, 10 I.C C.2d at 319

d. Index of operating expenses

In its Opening Evidence, DuPont explained that certain DRR operating expenses were adjusted annually based on the annual change in DRR ton-miles because the affected expenses rely upon the level of traffic volume Dup Op Narr. III-H-11. This adjustment affected train and engine personnel expenses, locomotive related expenses, loss and damage expenses, trackage rights fees, and intermodal lift costs.

On Reply, NS criticized DuPont for using ton-miles "instead of the Board's standard use of tons" to adjust the operating expenses of the DRR. NS Reply III-H-11. Although asserting that use of tons is standard for adjusting operating expenses, NS inexplicably states that car-miles is the appropriate metric to use for such an adjustment NS Reply III-H-11 ("NS.. indexes DRR operating expenses based on annual changes in car miles.") NS provides no citation to any Board decision to support its claim about the "standard" way to adjust operating expenses, but precedent suggests that operating expenses have been adjusted via tons in the past. See, e g., PSCo/Xcel, 7 S T B. at 618 ("As tons increase (or decrease) in future years, the DCF model automatically increases (or decreases) specific operating expenses....in proportion to the percentage change in tonnage ").

The Board should reject NS's chaotic and internally inconsistent position. NS has not explained why it did not follow the "standard" that it claims exists. Even more to the point, if

tons are the standard, then DuPont's use of ton-miles is much closer to the standard than the car-miles used by NS.

. The only support NS provides for its (ultimate) position is that car-miles "provide a more accurate metric than ton-miles for adjusting operating expenses for changes in volume for a SARR with such a diverse traffic base that has very different forecasted volume growth." NS Reply III-H-11 to 12. In particular, NS believes that use of ton-miles overweights changes to coal traffic and underweights changes to intermodal traffic However, car-miles is an insufficient metric because it only includes one factor, mileage, while ignoring the relationship between shipment weight and operating expenses Cf. PSCo/Xcel, 7 S T B at 618 (calibrating SARR operating expenses by "tonnage and distance" to account for Jeffrey Energy Center traffic) Ton-miles is the appropriate factor for adjustment of operating expenses

c. MMM calculations

NS proposes to modify the MMM analysis in order to "properly allocate the unique variable costs of TIH transportation solely to the DRR's TIH movements " NS Reply III-H-13 to 17; 19 to 31. Such modifications are unlawful, unnecessary and at odds with settled SAC procedures.[122] The one case that NS cites for support is inapposite, while decisions that NS ignores prohibit its proposed modifications.

First, NS inaccurately contends that its modifications to the MMM analysis are supported by the Board's decision in AEPCO 2011, Docket NOR 42113, at 2 (served June 27, 2011). NS Reply III-H-13. However, as explained in DuPont's Rebuttal, the issue addressed by the Board in that decision is very different from the issue posed by NS. Dup. Reb III-H-19.

[122] DuPont also notes that NS's arguments are the height of hypocrisy The Board adopted the MMM analysis through notice and comment rulemaking in Major Issues, which is the same rulemaking in which the Board adopted the ATC methodology After spending 40 pages of its Reply Evidence arguing that the Board improperly adopted Modified ATC in an adjudicatory proceeding, NS asks the Board to modify the MMM analysis in this adjudicatory proceeding. If NS is correct about ATC, then the same logic would prohibit the Board from modifying the MMM analysis in this case

Second, the NS modifications constitute movement-specific adjustments to URCS, which are prohibited by Board precedent and inconsistent with the purpose of MMM Dup Reb III-H-19 to 21 The Board has previously rejected such efforts to make adjustments to the variable costs used in developing maximum R/VC ratios using the MMM model In WFA/Basin II, slip op. at 7-8, BNSF argued that there was a flaw in the MMM model that provided short-haul movements with greater relative rate reductions than long-haul movements. But in that case, the Board summarily rejected BNSF's uncalled-for adjustment to the variable costs used in the MMM model. As the Board explained, MMM is designed to calculate the maximum mark-up over variable cost that a carrier can charge any movement in the traffic group. The Board determined that movements with higher R/VC ratios, no matter the reason why, deserve greater relief than those with smaller ratios Id. The Board did not find any fundamental flaw with the general principle in MMM that relief should be provided to those shippers making the highest contribution over variable cost

In this case, NS is attempting a similar adjustment to that proposed by BNSF in WFA/Basin whereby TIH shipments would be precluded from relief based on an alleged flaw in the MMM approach Dup. Reb III-H-21. NS alleges that the MMM process is flawed because it assigns PTC related costs to non-TIH shipments that do not receive any benefit from PTC. But NS has not proven that the MMM process incorrectly allocates SAC to the various DRR customers. Moreover, even if NS were correct that the variable costs for TIH shipments should be adjusted to allocate PTC related costs to only TIH movements, equity would require that other movements' variable costs be adjusted to better allocate costs specific for those movements. Id

In addition, NS is simply wrong as a matter of fact on two distinct grounds. First, the NS argument is moot in this proceeding. Because PTC is the signal system for the entire DRR,

as opposed to overlaying PTC on top of CTC, PTC clearly benefits all traffic on the DRR. Thus, there is no factual basis for assigning PTC costs solely to TIH traffic. Dup. Reb. III-H-22 to 23.

Second, even in an overlay system with CTC, PTC is not unique to TIH traffic and, therefore, even if any modification to the MMM analysis were appropriate, PTC does not qualify for the NS's modified MMM approach NS does not explain why PTC costs are unique to TIH traffic. For that reason alone, its evidence is unsupported and should be rejected, because the party seeking a deviation from precedent has the burden of proof [123]

The only reason that DuPont can surmise for NS's identification of PTC costs as unique to TIH traffic is based upon a common railroad industry refrain that, but for TIH traffic, PTC installation would not be required. That refrain, however, is not accurate The Rail Safety Improvement Act of 2008 requires the installation of PTC on main line over which TIH material is transported 49 U.S.C § 20157(a)(1). The Act defines a "main line" as "a segment or route of railroad tracks over which 5,000.000 or more gross tons of railroad traffic is transported annually. .." 49 U.S.C. § 20157(i)(2). Thus, with respect to TIH traffic, there are two prerequisites before the PTC mandate applies to a rail line. There must be both (a) the presence of TIH traffic and (b) at least 5,000,000 gross tons of total traffic Neither scenario by itself would require PTC. Because the presence of a substantial volume of non-TIH traffic also is a pre-requisite to the PTC mandate, it is inaccurate to contend that PTC would not be required but for the presence of TIH traffic.

Finally, even if the presence of TIH traffic were the sole basis for requiring PTC, DuPont's Rebuttal shows in detail that the benefits of PTC are not limited to just TIH traffic. Dup. Reb. III-H-23 to 24.

[123] See, e.g., PSCo/Xcel, 7 S.T.B. at 644 Otter Tail, slip op. at 4, WTA/Basin, slip op at 53-54, 68-69.

D. CONCLUSION

For the reasons summarized above and detailed in the following Parts II and III, Exhibits, and supporting work papers, the Board should conclude that NS possesses market dominance over all 138 issue movements, including the 99 movements contested by NS. Furthermore, the Board should declare that the challenged rates that are applicable to the issue movements are unreasonable under the stand-alone cost constraint, prescribe reasonable rates for a period of 10 years beginning on June 1, 2009, and award DuPont reparations for monies paid in excess of the reasonable rates from June 1, 2009 through the present.

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April 15, 2013

PUBLIC VERSION

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BEFORE THE
SURFACE TRANSPORTATION BOARD

E I DUPONT DE NEMOURS & COMPANY Complainant v. NORFOLK SOUTHERN RAILWAY COMPANY Defendant	)	Docket No. NOR 42125

REBUTTAL EVIDENCE AND ARGUMENT OF

E.I. DU PONT DE NEMOURS AND COMPANY

Volume II:
Market Dominance Evidence

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Filing Contains Color Images

CASE GLOSSARY

AEP Texas 2006	*AEP Texas Northern Company v. BNSF Railway*, STB Docket No. 41191 (Sub-No 1) (STB served November 8. 2006)
AEP Texas	*AEP Texas Northern Company v BNSF Railway*, STB Docket No. 41191 (Sub-No. 1) (STB served September 10. 2007)
AEPCO	*Arizona Electric Power Cooperative, Inc v. BNSF Railway Company and Union Pacific Railroad Company*, STB Docket No. 42113 (STB served November 22. 2011)
Aluminum	*Aluminum Association v Akron, Canton & Youngstown Railroad*, 367 I.C C. 475 (1983)
APS	*Arizona Public Service Company and Pacificorp. V The Atchison, Topeka and Santa Fe Ry.* 2 STB 367 (1997)
Arizona	*Arizona Public Service Co. v. United States*, 742 F.2d 644 (D.C. Cir. 1984)
Bottleneck I	*Central Power & Light Co v Southern Pacific Transportation Co.*, 1 S.T.B. 1059 (1996)
Bottleneck II	*Central Power & Light Co. v. Southern Pacific Transportation Co*, 2 S.T B. 235 (1997)
Coal Rate Guidelines or Guidelines	*Coal Rate Guidelines, Nationwide*, 1 1 C.C 2d 520 (1985), aff'd sub nom. *Consolidated Rail Corp. v United States*, 812 F 2d 1444 (3rd Cir. 1987)
Coal Trading Corp.	*Coal Trading Corp v. The Baltimore & Ohio R.R , et al* . 6 1 C C.2d 361 (1990)
CP&L	*Carolina Power & Light Co. v Norfolk Southern Railway*, 7 S.T.B. 235 (2003)
Dayton P&L	*Dayton Power & Light Co. v. Louisville & Nash. R R* , 1 1 C.C.2d 375. 382 (1985)
DMIR I	*Minn. Power, Inc v Duluth, Missabe & Iron Range Ry* . 4 S.T.B. 64 (1999)

DMIR II	*Minn. Power, Inc. v Duluth, Missabe & Iron Range Ry*., 4 S.T.B. 288 (1999)
Duke/CSXT	*Duke Energy Corp v CSX Transportation Inc.*, 7 S.T.B. 402 (2004)
Duke/NS	*Duke Energy Corp v. Norfolk Southern Railway*, 7 S.T.B. 89 (2003)
FMC	*FMC Wyo. Corp v Union Pacific Railroad Company*, 4 STB 699 (2000)
General Procedures	*General Procedures for Presenting Evidence in Stand-Alone Cost Rate Cases*, STB Ex Parte No. 347 (Sub-No. 3) (STB served March 12, 2001
IPA	*Intermountain Power Agency v Union Pacific Railroad Company*, STB Docket No. 42127, UP Reply Evidence (Public), filed November 10, 2011
Major Issues	*Major Issues in Rail Rate Cases*, STB Ex Parte No. 657 (Sub-No 1) (STB served October 30, 2006)
M&G	*M&G Polymers USA, LLC v CSX Transportation, Inc.*, STB Docket No. 42123 (Filed November 13, 2012)
M&G Decision	*M&G Polymers USA, LLC v. CSX Transportation, Inc*., STB Docket No. 42123 (served Sept. 27, 2012)
Market Dominance Determinations	*Mkt Dominance Determinations & Consideration of Prod. Competition*, 365 I C.C. 118 (1981)
McCarty Farms	*McCarty Farms v. Burlington N., Inc* , 3 I.C.C.2d 822 (1987)
Nevada Power	*Bituminous Coal – Hiawatha, Utah to Moapa, Nevada*, 6 I.C.C 2d 1 (1989)
Nevada Power II	*Bituminous Coal – Hiawatha, Utah to Moapa, Nevada*, 10 I.C C.2d 259 (1994)
OG&E	*Oklahoma Gas & Electric Co., v Union Pacific Railroad Company*, STB Docket No 42111 (STB served July 24, 2009)

Otter Tail	*Otter Tail Power Co., v. BNSF Ry.*, STB Docket No. 42071 (STB served January 27, 2006)
PSCo/Xcel	*Public Service Co. of Colorado d/b/a Xcel Energy v Burlington Northern and Santa Fe Railway*, 7 S.T.B. 589 (2004)
PSCo/Xcel II	*Public Service Co of Colorado d/b/a Xcel Energy v. Burlington Northern and Santa Fe Railway*, STB Docket No 42057 (STB served Jan 19, 2005)
Rate Regulation Reforms or Ex Parte 715	*Rate Regulation Reforms*, STB Ex Parte No. 715 (STB served July 25, 2012)
Seminole	*Seminole Electric Cooperative, Inc v CSX Transportation, Inc.*, STB Docket No. 42110 (Rebuttal Evidence Filed April 15, 2010)
TMPA	*Texas Municipal Power Agency v Burlington Northern and Santa Fe Railway*, 6 STB 573 (2003)
WFA/Basin	*Western Fuels Ass'n, Inc. and Basin Electric Power Coop. v. BNSF Railway*, STB Docket No. 42088 (STB served September 10, 2007)
WFA/Basin II	*Western Fuels Ass'n, Inc. and Basin Electric Power Coop. v. BNSF Railway*, STB Docket No 42088 (STB served February 18, 2009)
Wisconsin P&L	*Wisconsin Power and Light Co., v Union Pacific Railroad*, 5 STB 955 (2001)
West Texas 638 *Utilities*	*West Texas Utilities Co v Burlington Northern Railroad*, 1 STB (1996). *aff'd sub nom Burlington Northern Railroad v. STB*, 114 F.3d 206 (D.C. Cir. 1997)

ACRONYMS

The following acronyms are used:

AAR	Association of American Railroads
AASHTO	American Association of State Highway Officials
ACSES	Advanced Civil Speed Enforcement System
AEI	Automatic Equipment Identification
AEO	EIA's Annual Energy Outlook Forecast
AGR	Alabama and Gulf Coast Railway
All-LF	All-Inclusive Less Fuel Index, published by AAR
AREMA	American Railway Engineering and Maintenance-of-Way Association
ARRA	American Reinvestment and Recovery Act of 2009
ATC	Average Total Cost
ATF	Across-the-Fence
ATP	Automatic Train Protection
ATV	All-Terrain Vehicle
B&B	Bridge and Building
BCFD	Billion Cubic Feet per Day
BNSF	Burlington Northern Santa Fe Railway Company
BRC	Belt Railway Company of Chicago
C&S	Communications and Signals
CAGR	Compound Annual Growth Rate
CFS	2007 Commodity Flow Survey
CCRSI	CoStar Repeat Sales Indices
CERA	Central Railroad of Illinois
CMP	Constrained Market Pricing
cmp	Corrugated Aluminized Metal Pipe
CN	Canadian National Railway
CNW	Chicago & NorthWestern
COBRA	Consolidated Omnibus Budget Reconciliation Act
Conrail	Conrail Shared Asset Area
CP	Canadian Pacific Railway
CPI	Consumer Price Index
CSXT	CSX Transportation, Inc
CTC	Centralized Traffic Control
CWR	Continuous Welded Rail
CY	Cubic Yards
DCF	Discounted Cash Flow
DFE	Difluoroethane
DMA	Dimethylamine Anhydrous
DME	Dimethyl Ether
DMF	Dimethyl Formamide
DMS	Dimethyl Sulfate
DOT	Department of Transportation
DP	Distributed Power

DRR	DuPont Stand-Alone Railroad
DTL	Direct to Locomotive Fueling
EDI	Electronic Data Interchange
EEO	Equal Employment Opportunity
EIA	Energy Information Administration
EOTD	End of Train Device
ERTMS	European Rail Traffic Management System
FED	Failed-Equipment Detector
FHWA	Federal Highway Administration
FRA	Federal Railroad Administration
FSC	Fuel Surcharges
G&A	General and Administrative
GDLK	Grand Elk Railroad
GDP-IPD	Gross Domestic Product – Implicit Price Deflator
GWR	Gross Weight on Rail
HCl	Hydrochloric Acid (a/k/a Muriatic Acid)
HDF	On-Highway Diesel Fuel Index
HR	Human Resources
HTF	Highway Trust Fund
I&I	Inter and Intra-Train Switching
ICC	Interstate Commerce Commission
IDC	Interest During Construction
IDS/IPS	Intrusion Detection System/Intrusion Prevention System
IHB	Indiana Harbor Belt Railroad Company
ISS	Interline Settlement System
IT	Information Technology
KCS	Kansas City Southern Lines
LAN	Local Area Network
LPM	Limit Price Methodology
MACRS	Modified Accelerated Cost Recovery System
MCPPI	Moody's Commercial Property Price Index
MGT	Million Gross Tons
MIT	Massachusetts Institute of Technology
MGT	Million Gross Tons
MLO	Manager of Locomotive Operations
MMF	Monomethyl Formamide
MMA	Monomethylamine Anhydrous
MMM	Maximum Markup Methodology
MOW	Maintenance of Way
MTO	Manager of Train Operations
NBER	Nittany & Bald Eagle Railroad
NCREIF	National Council of Real Estate Investment Fiduciaries
NDGPS	Nationwide Differential GPS
NEC	Amtrak's Northeast Corridor
NPI	NCREIF Property Index
NS	Norfolk Southern Railway Company

NT/PC	Network Personal Computer
O/D	Origin/Destination
OATC	Original ATC
OS	Operating Station
OSHA	Occupational Safety and Health Administration
PDO	Bio-Propanediol
Pet Coke	Calcined Petroleum Coke
PPI	Producer Price Index
PRB	Powder River Basin, Wyoming
PTC	Positive Train Control
R/VC	Revenue to Variable Cost
RCAF-A	Rail Cost Adjustment Factor, adjusted for productivity
RCAF-U	Rail Cost Adjustment Factor, unadjusted for productivity
RMI	A GE Transportation Company
RMS	RMI's Revenue Management Services System
ROW	Right of Way
RSIA	Rail Safety Improvement Act of 2010
RTC	Rail Traffic Controller Model
SAC	Stand-Alone Cost
SARR	Stand-Alone Railroad
SEC	Securities Exchange Commission
SO3	Sulfur Trioxide
SPLC	Standard Point Location Code
STB	Surface Transportation Board
STCC	Standard Transportation Commodity Code
STEO	Short-Term Energy Outlook
T&E	Train and Engine
TCS	Triple Crown Services
TDIS	Thoroughbred Direct Intermodal Services
TiCl4	Titanium Tetrachloride
TiO2	Titanium Dioxide
TMA	Trimethylamine Anhydrous
TMS	RMI's Transportation Management Services System
TRN	NS Train Event Train Symbol
TRRA	Terminal Railroad Association of St. Louis
UP	Union Pacific Railroad
UPS	Uninterruptible Power Supply
URCS	Uniform Railroad Costing System
USDA	United States Department of Agriculture
WABTEC	Westinghouse Air Brake Technologies
WAN	Wide Area Network
WFL	Waste, Flammable Liquid
WNYP	Western New York & Pennsylvania Railroad
WTI	West Texas Intermediate

MASTER TABLE OF CONTENTS

I. COUNSEL'S ARGUMENT AND SUMMARY OF EVIDENCE I-1

A OVERVIEW AND SUMMARY I-1

B. THE EVIDENCE SHOWS THAT NS POSSESSES MARKET DOMINANCE OVER EACH OF THE ISSUE MOVEMENTS I-7

1. Quantitative Market Dominance I-7

2. Qualitative Market Dominance I-8

a. NS has proposed an over-simplistic two-part test of market dominance that would produce absurd results. I-13

1) The NS standard ignores three of the five specifically-enumerated market dominance factors. I-14

2) The NS market dominance standard would produce absurd results. I-15

b. NS fundamentally misrepresents and misinterprets both DuPont's Opening Evidence and the Board's market dominance precedent I-17

1) DuPont has taken a far more holistic approach in its market dominance evidence than NS I-18

2) DuPont has properly defined "effective competition" I-24

3) NS has misapplied the principle that a competing mode need not be capable of handling all of the issue traffic I-27

c. Trucks compete for short distance hauls, low volumes, expedited shipments, and when there is no rail service. I-31

1) NS emphasizes DuPont's truck shipment history without considering whether the circumstances of those shipments are comparable to the issue movements I-32

2) NS incorrectly asserts that DuPont's leverage over motor carriers is evidence of effective competition. I-35

d. NS's own evidence confirms the limits of truck transportation. I-38

e The magnitude of NS rate increases over just two years, from 2009 to 2011, exemplifies its market dominance. I-42

f Customer and supplier requirements for rail service preclude the use of alternatives to rail transportation. I-45

g The Board must apply its DMIR holding to this case I-48

1) The statute requires the Board to consider whether effective competition exists for the transportation to which the challenged rate applies. I-48

a) NS selectively quotes from the statute and legislative history. I-49

b) The Board must enforce the plain meaning of the statute. I-52

c) Segregation of market dominance and rate reasonableness is not supported by the statute. I-56

d) The Board cannot consider the contract service and rate because they are outside its jurisdiction. I-58

2) NS's claims about the "real-world" impact of competition are based on hyperbole and ignore "real-world" implementation problems. I-59

a) The NS position is contrary to precedent. I-59

b) NS's proposal would be impractical and cause confusion.. ....I-63

3) Precedent supports DuPont's position I-66

a) The precedent cited by NS does not support its position. I-66

b) The attempt to distinguish DMIR is unpersuasive.. ....I-69

h. The Limit Price Methodology confirms the extent of NS's market dominance...I-71

1) The Board's adoption of the LPM is procedurally sound.... ....I-73

2) The LPM supplements, but does not replace. a traditional market dominance analysis I-76

C. THE EVIDENCE SHOWS THAT THE CHALLENGED RATES ARE UNREASONABLY HIGH..... ....I-79

1 The Proper Scope of Rebuttal Evidence. I-80

2 Traffic and Revenues (Part III A) I-82

a The DRR traffic group..... .... .I-83

b Forecasted traffic volumes..... ... .I-89

c. Stand-alone revenue..... ....I-89

1) Modified-ATC. I-89

a) NS is incorrect as a matter of law that the Board must apply Original ATC to this case.. ....I-90

b) Modified ATC is superior to both Original and Alternate ATC.. ..... . I-94

2) Forecasted Revenues.. ....I-95

3. SAC Railroad System (Part III B) I-96

4 Operating Plan (Part III.C)... ....I-97

a. DuPont has submitted a feasible operating plan I-99

1) DuPont's Operating Plan and Real-World Operations..... .... .I-100

2) Alleged "Missing Trains" and Local Service I-102

3) Rerouted Traffic I-103

4) Yard Service..... . ...I-104

5) Reciprocal Obligations With Other Carriers I-105

6) TIH shipments I-106

7) DuPont's RTC simulation..... .... I-106

8) Other operating matters..... ... . .I-106

b NS use of Multirail is unsupported, and is otherwise infeasible and unrealistic, and therefore the Board should not accept NS's operating plan.... ..... I-107

1) The Board should reject NS's operating plan evidence, because NS has presented it without the MultiRail program.. ....I-107

2) Because NS has failed to support its operating plan, the Board should accept DuPont's operating plan, with the corrections DuPont has made on Rebuttal... .... .I-108

3) NS presentation of its operating plan evidence without MultiRail prevents the Board from restating it..... .... .I-113

4) Any attempt to evaluate NS's MultiRail evidence without the MultiRail program will unnecessarily delay this proceeding and be prejudicial to DuPont I-114

c. The NS RTC simulation is filled with errors I-117

5. Operating Expenses (Part III.D) I-118

a Locomotive lease costs I-119

b. Locomotive maintenance expense I-120

c Fuel consumption..... ....I-121

d Operating personnel..... . ...I-121

e. General and administrative. I-122

f Maintenance of way..... ....I-126

g. Insurance.... ....I-127

h. Ad valorem tax I-127

6. Non-Road Property Investment (Part III E)... .... I-128

7. Road Property Investment (Part III.F) I-128

a. Land I-129

b. Roadbed Preparation. I-131

c. PTC Installation I-132

d Partially-Owned Lines I-133

8. DCF Analysis (Part III.G)..... ....I-134

a Cost of capital I-134

b. Inflation indices for land..... .... I-137

9. Results of SAC Analysis (Part III.H) I-138

a. Interest schedule on debt..... .... I-138

b. Bonus depreciation I-139

c. DRR capital structure. I-140

d. Index of operating expenses I-142

e. MMM calculations.. ....I-143

D. CONCLUSION I-146

II. MARKET DOMINANCE II-A-1

A. QUANTITATIVE MARKET DOMINANCE II-A-1

1 Traffic and Operating Characteristics II-A-1

a. Loaded Miles II-A-1

b. Tons per Car II-A-4

2 Variable Cost Calculations II-A-5

3. R/VC Ratios II-A-6

B. QUALITATIVE MARKET DOMINANCE II-B-1

1 Intramodal Competition II-B-3

2. Intermodal Competition II-B-6

a Acid, Sulfuric II-B-7

1) Red Lion (Reybold) Origin Shipments II-B-13

2) Bellwood Origin Shipments II-B-27

3) Bayway (Morses Mill) Origin Shipments II-B-31

4) Miami Fort Origin Shipments II-B-32

b Acid, Spent Sulfuric II-B-34

c. Acid, Fuming Sulfuric (Oleum) II-B-37

d. Acid, Muriatic II-B-42

e Aniline Oil II-B-46

f. Caustic, Potassium (Caustic Potash) II-B-54

g Caustic, Sodium (Caustic Soda) II-B-57

h. Dimethyl Ether II-B-72

i Dimethyl Formamide II-B-84

j. Dimethyl Sulfate II-B-87

k Lime II-B-90

l Methylamines, Anhydrous II-B-94

m. Methylamines, Aqueous II-B-123

n. Petroleum Coke II-B-132

o. Polyethylene II-B-141

p. Sodium Methylate II-B-149

q. Sulfur Trioxide (SO3) II-B-153

r Titanium Dioxide II-B-156

s Waste Flammable Liquid. II-B-200
t. Zircon Sand.... .. .. II-B-202
3. The Limit Price Methodology is lawful and economically sound..... ....II-B-206
a Overview of the LPM II-B-207
b. The LPM should only be used to presume the absence of effective competition... ....II-B-209
c. The Board should substitute R/VC>180 for RSAM. II-B-215
d. The LPM establishes a presumption of market dominance for 77 of the 99 contested movements. II-B-216

III. STAND-ALONE COST III-A-1
A. STAND-ALONE TRAFFIC AND REVENUES III-A-1
1 Stand-Alone Traffic Group III-A-2
a. Non-NS TCS Traffic Segments III-A-2
b. Leapfrog Traffic. III-A-3
i. Leapfrog Traffic Moves In The Real World, Including On NS III-A-5
ii. The DRR Network Is Based On Real-World Operations And Traffic Flows III-A-22
2 Forecasted Traffic Volumes III-A-27
a. Weighting Factors..... ....III-A-29
b. Coal Forecast III-A-30
i. NS's Internal Forecast For Coal III-A-30
ii Single Rate of Change For All Coal III-A-32
iii. Shifting Tonnage From Capped Plants III-A-33
iv. Treatment of Coke, Pet Coke and Iron Ore III-A-34
b. Other (Non-Coal) Commodity Forecasts..... . . . .III-A-34
c Compound Annual Growth Rate III-A-34
d. Rebuttal Traffic.. . ...III-A-35
3 Stand-Alone Revenues III-A-36
a. ATC SQL Coding III-A-37
i. NS's Technical Correction Is Inadequate III-A-39
ii DuPont's Technical Correction Is Consistent and Fully Supported III-A-43
b. Modified ATC vs Original ATC..... . ...III-A-43
i. NS Has Not Justified The Application Of Original ATC To This Case . ..III-A-44

ii. It Would Be Arbitrary And Capricious For The Board To Apply The Discredited Original ATC Methodology III-A-44
iii. Modified ATC Is Superior To Both Original And Alternate ATC III-A-44
(1) Modified ATC is Still Superior to Original ATC for the Reasons Articulated By The Board in WFA/Basin III-A-45
(a) Original ATC's Critical Flaws... ..... III-A-47
(b) Alternate ATC's Shortcomings III-A-49
(2) Alternate ATC Artificially Caps R/VC Ratios on High-Density Rail Segments III-A-52
c. TCS/TDIS Revenue Adjustments III-A-56
d. Handling Line Payments III-A-61
e. Non-NS TCS Traffic... ..... III-A-64
f Switching Payments III-A-65
g Rebuttal Restatement III-A-66
4 Forecasted Revenues III-A-67
a. Coal Revenue Calculations III-A-68
b Development of 2011 TCS Revenue III-A-70
c. Fuel Indices. III-A-71
i Fuel "Cost" Index III-A-72
ii Fuel "Price" Index. III-A-72
d. Rebuttal Revenue III-A-73
B. STAND-ALONE RAILROAD SYSTEM III-B-1
1. Routes and Mileage III-B-1
a Main Lines... ..... III-B-2
i Partially Owned Lines III-B-2
ii Chicago, IL Extension III-B-3
iii. Additional Lead Track III-B-3
b. Branch Lines III-B-3
c Rebuttal Route Miles... ..... III-B-3
2 Track Miles And Weight Of Track III-B-4
a. Main Line Track III-B-5
i. Single Main III-B-5
ii. Other Main III-B-5
b Branch Line Track III-B-6
c Other III-B-6

h. Helper Pocket and Setout Track III-B-6

i. Customer Access Sidings III-B-6

d. Yard And Interchange Track III-B-8

e Rebuttal DRR Track Miles.. ....III-B-8

3. Yard And Interchange Track III-B-9

a. Yards III-B-13

i. Intermodal Facilities III-B-16

ii. Automotive Facilities..... .. ..III-B-16

iii. Transload Facilities.... ....III-B-17

b. Interchange Track..... .... III-B-17

c. Rebuttal DRR Yards..... ....III-B-18

4 Joint Facilities... ....III-B-18

5 Signals And Communications System III-B-19

6. Turnouts, FEDs And AEI Scanners III-B-19

C. STAND-ALONE RAILROAD OPERATING PLAN..... ....III-C-1

1. DuPont's Operating Plan is Feasible.... ....III-C-3

a. DuPont's Operating Plan Is Based On NS's Own Operations III-C-4

i DuPont Used NS's Own Operations As The Template For its Operating Plan.....

....III-C-4

(1) The DRR Provides Local Train Service.. .... III-C-7

(2) DuPont Did Not Develop a Trainload Operating Plan... .. .. III-C-8

(3) The DRR Uses The Same Car Classification and Blocking Plans As NS's Real World Operations..... .... III-C-10

(4) DuPont Provided The Facilities To Operate Road and Local Trains ..III-C-10

(5) DuPont Provided Sufficient Time For Local Trains To Pick-Up and Set-Out Cars..... .... III-C-11

(6) DuPont Provided The Special Services To Meet The Needs of DRR Shippers III-C-12

ii. DuPont's Operating Plan Was Prepared By Experts With Many Years Of Railroad Operating Experience III-C-12

b Any Limitations On DuPont's Operating Plan Are A Result Of NS's Failure To Provide Accurate Data..... ....III-C-14

i. NS Cannot Run Away From Its Own Flawed Data. III-C-14

ii NS Acknowledges The Flaws In Its Own Data III-C-15

(1) Train and Car Event Data Cannot Be Accurately Combined III-C-16

(2) NS Had To Resort To Opinions To Develop Dwell Times Because They Could Not Be Identified From NS Data... III-C-20
iii DuPont included All Trains NS's Data Indicated Moved Over The DRR . III-C-22
(1) Train Event Data Shows More Trains On SARR Than Car Event Data.. III-C-23
(2) NS Included Trains That Are Not In The Car Event Data ... III-C-26
c. DuPont's Operating Plan Accounts For Reciprocal Operations ... III-C-27
i. Pre-Blocking Cars Forwarded to Connecting Carriers ... III-C-28
ii Handled Run Through Power ... III-C-29
iii Distributive Power ... III-C-30
iv Fueling and Inspecting Locomotives ... III-C-31
v Running Repairs To Foreign Railcars.. ... III-C-32
d. DuPont's Operating Plan Properly Handles TIH Shipments... ... III-C-33
i. The DRR Can Track TIH Shipments. ... III-C-34
ii. DRR Trains Carrying TIH Shipments Are Limited To 50 MPH ... III-C-34
iii. The DRR Has The Appropriate Personnel To Handle TIH Shipments.. . III-C-34
e. DuPont Has Reasonably And Properly Included Cross-Over Traffic In "Leapfrog" Service III-C-35
f DuPont Has Accounted For Traffic On Line Segments Impacted by Rerouted Trains... III-C-50
2. DuPont's RTC Simulation Proves The Feasibility Of The DRR Operating Plan. ... III-C-53
a. DuPont's Modeling Of NS's Own Operations Proves Its Feasibility ... III-C-53
b. DuPont Used Correct Grade Information ... III-C-54
i. DuPont Relied On The Grade Information Included In NS's RTC Models Provided In Discovery ... III-C-55
ii Rebuttal RTC Grades... III-C-56
c Track Outages. ... III-C-56
i NS Train Movement Data Shows Train Moving Over Line Segments NS Claims Were Shutdown Due To Outages ... III-C-56
ii Rebuttal RTC Outages ... III-C-57
d. Amtrak Northeast Corridor... ... III-C-58
e. Foreign Railroad Crossings... III-C-58
f DuPont's Modeling of The Chicago Area ... III-C-59
g Light Engine and Hi-Rail Movements... ... III-C-60
h. DuPont Incorporated In-Route Consist Stops and Changes ... III-C-61

i. The DRR Provides The Same Or Better Service Quality Than NS... ..... III-C-62

3 NS's MultiRail-Based Operating Plan is Unnecessary and Erroneous, and It Complicates the SAC Analysis while Providing no Advantage Over DuPont's Tried and Tested Model III-C-65

a Substituting Modeled SARR Routing And Operations For Actual Routing And Operations Is Unnecessary III-C-67

b Substituting Modeled SARR Routing and Operations for Actual Routing and Operations Distorts the SAC Analysis III-C-71

c NS Uses A Model That Is Superior To MultiRail In Developing its Real-World Operating Plan III-C-84

d NS's MultiRail-Based Modeling Exercise Fails To Consider Downstream Impacts On Both DRR Traffic And Other Non-Selected NS Traffic III-C-85

e NS's MultiRail-Based Modeling Exercise Fails To Account For All Selected DRR Traffic.. .... III-C-88

f. NS's MultiRail-Based Modeling Exercise Relies on Simple Mathematical Algorithms Rather than Real-World Operations III-C-92

g NS's MultiRail-Based Modeling Exercise Is Riddled With Faulty And Unalterable Inputs And Assumptions That Render Its Outputs And All Downstream SAC Analyses Invalid..... .... III-C-96

4 NS's RTC Model Of The DRR Is Filled With Errors III-C-108

a. NS Incorrectly Modeled Foreign Railroad Trains III-C-108

b. NS Improperly Modeled Random Outages..... .... III-C-111

c. NS Improperly Input RTC Trains III-C-112

d NS RTC Network Does Not Reflect Its Investment III-C-117

5 DuPont Response to NS's Criticisms of DuPont's Operating Plan III-C-120

a. Yard and Facilities..... .... III-C-120

i Yards III-C-120

(1) Yard Switching and Classification Tracks. III-C-121

(a) NS Yard Classification Car Counts are Unsupported III-C-122

(b) NS Yard Classification Car Counts are Unrealistic III-C-123

(c) NS Hump Yard Classification Track Miles are Significantly Overstated III-C-125

(2) Determination of DRR Yard Classification Tracks in Rebuttal..... III-C-126

ii. Intermodal Facilities... .... III-C-128

iii Automotive Facilites..... .... III-C-128

iv. Transload Facilities... .... III-C-129

b. Yard Activity III-C-129

i. Locomotive Inspections and Fueling ... III-C-129
ii. Railcar inspections ... III-C-130
c. Train Sizes and Equipment ... III-C-130
i. Train Size ... III-C-130
ii. Locomotives ... III-C-131
(1) Road Locomotives ... III-C-132
(a) Locomotive Dwell in Yards ... III-C-133
(b) Peaking Factor ... III-C-136
(c) Spare Margin ... III-C-138
(2) Local Trains ... III-C-138
(3) Helper Locomotives ... III-C-138
(4) Switch Locomotives ... III-C-139
d. Crew Districts and Requirements ... III-C-140
i Road Crews ... III-C-140
ii. Yard Crews ... III-C-140
iii Helper Crews ... III-C-140
D. OPERATING EXPENSES ... III-D-1
1. Locomotives ... III-D-3
a Acquisition ... III-D-3
i. Locomotive Types ... III-D-3
ii. Locomotive Lease Costs ... III-D-5
iii. Number of Locomotives ... III-D-9
b. Locomotive Maintenance Expense ... III-D-10
c. Locomotive Servicing (Fuel, Sand and Lubrication) ... III-D-11
i. Fuel Cost ... III-D-11
ii. Fuel Consumption ... III-D-12
iii. Sand and Lubrication ... III-D-13
2. Railcars ... III-D-14
a Leasing ... III-D-14
i. RTC Transit Times ... III-D-15
ii. Dwell Time in Yards ... III-D-15
iii Intermodal Car Costs ... III-D-16
b. Railcar Maintenance ... III-D-18
c. Private Car Allowances ... III-D-19

3 Operating Personnel III-D-19
a. Number of T&E Personnel III-D-19
i In Rebuttal DuPont Includes All Required Trains on the DRR System III-D-20
ii Directional Imbalances On the DRR III-D-20
iii. DRR Re-Crew Rate.... ... . .III-D-23
iv. DuPont Includes All Necessary Helper Service III-D-24
v. Yard Crews III-D-24
b T&E Personnel Compensation.. ....III-D-26
i. T&E Wages... ....III-D-26
ii. Fringe Benefits.. ....III-D-27
iii. Hotel and Taxi Expense III-D-29
c Non-Train Operating Personnel. III-D-30
i Transportation Department. III-D-31
(1) Operations Planning and Joint Facilities..... ....III-D-31
(2) Operations Control III-D-32
(3) Dispatch..... . ... .III-D-33
(4) Crew Management and Crew Calling III-D-34
(5) Terminal Operations III-D-35
(6) Locomotive Operations... ....III-D-36
(7) Intermodal and Automotive Terminals III-D-37
ii. Mechanical Department III-D-38
(1) EOTD Manager.... . ... III-D-38
(2) Managers – Maintenance Planning III-D-39
(3) Car Inspection. III-D-39
iii. Operations Support Department III-D-42
(1) Operations Service and Support (OSS) III-D-42
(2) Service Design and Measurement III-D-43
(3) Equipment Planning and Distribution III-D-44
(4) Damage Prevention and Freight Claims III-D-44
d. Non-Train Operating Personnel Compensation III-D-45
i. Vice Presidents.. .... III-D-45
ii Fringe Benefits... . ...III-D-45
e Materials, Supplies and Equipment III-D-46
4 General and Administrative..... ....III-D-46

a Staffing Requirements III-D-47
i. Executive Department III-D-48
ii Board of Directors.. ..... III-D-49
iii Marketing & Customer Service Department III-D-49
iv. Finance & Accounting Department III-D-49
v Law and Administration Department III-D-50
vi. Information Technology III-D-50
b Compensation III-D-51
c. Material, Supplies, and Equipment III-D-51
d. Other III-D-51
i. IT Systems III-D-51
e. Other Out-Sourced Functions III-D-52
f. Start-up and Training Costs III-D-53
g Bad Debt III-D-53
5. Maintenance-of-Way III-D-53
6. Leased Facilities III-D-56
a. Misapplied Fees III-D-57
i Car Counts III-D-57
ii. Terminal Railroad of St. Louis III-D-58
iii Conrail Shared Asset Areas III-D-59
iv. Belt Railway Company of Chicago III-D-60
b Improperly Routed Traffic III-D-61
c Construction of Chicago Area Track III-D-62
d. AMTRAK Segments III-D-62
e Mathematical Error III-D-63
7. Loss and Damage III-D-63
8 Insurance III-D-63
9. Ad Valorem Tax III-D-65
10 Other III-D-68
a Intermodal Lift and Ramp Cost III-D-68
i Clerical Staff and Utilities III-D-69
ii. Elizabeth, New Jersey III-D-69
iii Chicago Cross-town Drays III-D-70
iv. Additional Personnel III-D-70

b. Automotive Handling Cost III-D-70
c. Costs Incurred by Residual NS for New DRR-NS Interchanges III-D-71
d. Calculation of Annual Operating Expense III-D-72
E NON-ROAD PROPERTY INVESTMENT III-E-1
F. ROAD PROPERTY INVESTMENT III-F-1
1. Land.... .... III-F-4
a Review of Norfolk Southern's Land Valuation III-F-5
b Rebuttal Of NS Review Of DuPont Appraisal: Summary.... .... III-F-11
c Rebuttal of NS Appraiser's Review. Summary III-F-13
d. Easements III-F-14
2. Roadbed Preparation III-F-15
a. Clearing and Grubbing. III-F-29
i. Quantities of Clearing And Grubbing. III-F-29
ii. Clearing and Grubbing Unit Costs... .... III-F-29
b. Earthwork III-F-31
i. Earthwork Quantities III-F-31
(1) DRR Line Segments..... .... III-F-31
(2) DRR Yards III-F-33
(3) Total Earthwork Quantities III-F-34
ii Earthwork Unit Costs III-F-35
(1) Common Excavation. III-F-35
(2) Common Excavation – Adverse..... .... III-F-36
(3) Loose Rock Excavation III-F-39
(4) Loose Rock Excavation – Adverse III-F-40
(5) Solid Rock Excavation III-F-40
(6) Solid Rock Excavation – Adverse III-F-42
(7) Embankment/Borrow III-F-42
(8) Other Earthwork Quantities and Unit Costs..... . ... III-F-43
(a) Stripping..... . ... III-F-43
(b) Undercutting III-F-44
(c) Over-Excavation III-F-47
(d) Fine Grading III-F-48
(e) Swell III-F-49
(9) Subgrade Preparation III-F-51

(10) Land for Waste Excavation III-F-55
c. Drainage III-F-57
i. Lateral Drainage III-F-57
ii Yard Drainage III-F-57
d Culverts III-F-58
i. Culvert Unit Costs. III-F-58
ii. Culvert Installation Plans III-F-59
iii Culvert Quantities III-F-60
e. Other III-F-61
i. Sideslopes III-F-61
ii. Ditches III-F-61
iii. Retaining Walls III-F-61
(1) Increased Roadbed Width III-F-62
(2) Masonry Walls III-F-64
(3) Timber and Tie Walls III-F-66
(4) Piles III-F-66
(5) Foundation Excavation III-F-67
(6) Unit Costs III-F-67
iv. Rip Rap III-F-68
v Relocating and Protecting Utilities III-F-68
vi. Seeding/Topsoil Placement III-F-68
vii. Water for Compaction III-F-68
viii. Surfacing for Detour Roads III-F-68
ix Environmental Compliance III-F-68
x. Lighting for Night Work III-F-69
xi. Dust Control Work III-F-70
3. Track Construction III-F-70
a. Geotextiles III-F-72
b. Ballast and Sub-ballast. III-F-73
i. Ballast and Sub-ballast Quantities III-F-73
ii. Ballast and Sub-ballast Unit Costs III-F-76
c Ties III-F-80
d. Track (Rail). III-F-81
i Specifications III-F-81

ii Rail Pricing III-F-81
iii. Field Welds ... . , ...III-F-82
iv. Insulated Joints.. ....III-F-83
v. Switches III-F-83
c. Other III-F-84
i. Rail Lubricators III-F-84
ii Plates, Spikes and Anchors III-F-84
iii. Derails and Wheel Stops. III-F-84
iv. Crossing Diamonds.... ....III-F-85
v. Materials Transportation III-F-85
vi. Track Labor and Equipment III-F-85
4. Tunnels.. .... III-F-86
5 Bridges.. .... III-F-86
a Bridge Inventory III-F-87
b Bridge Design and Cost Overview III-F-90
i. Cost Overview III-F-91
ii Bridge Design III-F-92
(1) Superstructure Design (Spans) III-F-92
(2) Substructure Design (Piers and Abutments) III-F-93
iii Type I Bridges III-F-94
iv. Type II Bridges. III-F-95
v. Type III Bridges.. .. ..III-F-95
vi. Type IV Bridges.... ....III-F-97
vii. Bridges with Multiple Span Types III-F-97
viii. Special Bridges III-F-98
(1) Movable Bridges III-F-98
(2) Exceptionally Tall Bridges.. .... III-F-106
(3) Non-Movable Bridges over Navigable Waters III-F-107
c Highway Overpasses.. .... III-F-107
d. Summary III-F-108
6 Signals and Communications III-F-108
a. Centralized Traffic Control..... .... III-F-108
i PTC Installation in 2009 .... III-F-108
ii. Inventory of Signal Components III-F-113

iii. Unit Costs for Signal Components III-F-115
b. Positive Train Control..... III-F-116
i. PTC Wayside System III-F-116
ii. PTC IT Costs III-F-117
iii. PTC Locomotive Costs III-F-118
iv PTC Development Costs... III-F-118
v. PTC Expenditure Schedule..... III-F-118
c Detectors..... III-F-118
d. Crossing Signal Equipment.. III-F-119
e Communications.. III-F-120
f. Hump Yard Equipment.. III-F-120
g. Summary..... III-F-121
7. Buildings and Facilities... III-F-121
a Headquarters Building. ... III-F-121
b. Fueling and Locomotive Servicing Facilities. III-F-122
i. Fixed Fueling Facilities.... III-F-122
ii Fueling by Truck and Locomotive Servicing Facilities III-F-124
c Locomotive Repair Facilities..... III-F-124
d Car Repair Facilities . III-F-125
e. Crew Change Facilities..... III-F-127
f Yard Offices. III-F-128
g. Maintenance of Way Buildings (Roadway Buildings).. III-F-129
h. Wastewater Treatment III-F-131
i. Other Facilities / Site Costs III-F-131
j. Guard Booths..... III-F-134
k. Mechanic Repair Shops III-F-135
l. Mechanical Offices..... III-F-136
m. Observation/Yard Master Towers..... III-F-136
n Storage and Warehouse Buildings III-F-137
o. Miscellaneous Buildings. III-F-138
p Foundation Designs III-F-138
q. Signal Maintainer Buildings..... III-F-138
r Intermodal Terminals. III-F-139
s. Bulk Transfer Facilities. III-F-139

t. Automotive Facilities..... .... III-F-140
8 Public Improvements..... .... III-F-140
a. Fences III-F-141
b Signs and Road Crossing Devices III-F-141
c. Grade-Separations.. .... III-F-141
d At-Grade Crossings..... .... III-F-142
e. At-Grade Crossing Detours..... .... III-F-142
f At-Grade Crossing Vegetation Removal III-F-142
9. Mobilization III-F-143
10. Engineering III-F-145
11. Contingencies III-F-145
12. Construction Schedule..... .... III-F-146
13 Joint Facilities / Shared Assets.. . . .. III-F-147
a DRR Is Not Required To Construct The Facilities Of Non-Defendant Third Parties III-F-148
i. NS Rail Does Not Own Conrail Or IHB.. . ...III-F-149
ii The DRR Is Not Required To Acquire The NS Rail Ownership Interest In The BRC And TRRA..... . ...III-F-153
b. NS Has Not Properly Calculated The DRR's Ownership Costs For NS-Owned Joint Facilities.... .... III-F-155
c NS Improperly Substitutes Replacement Costs For Ownership Costs..... III-F-155
d NS Includes Ownership Costs But Ignores Offsetting Revenues... ..... III-F-159
e. Conclusions... .... III-F-165
G. DISCOUNTED CASH FLOW ANALYSIS III-G-1
1 Cost of Capital.... . ... III-G-1
a Updated Cost of Capital III-G-2
b. Weighting of 2006 Cost of Equity.. .... III-G-3
c Equity Flotation Costs..... . . .. III-G-4
2 Inflation Indices... .... .III-G-7
3. Tax Liability.... ....III-G-10
4 Capital Cost Recovery... .... III-G-10
H RESULTS OF SAC ANALYSIS..... ....III-H-1
1. Results of SAC DCF Analysis III-H-1
a Cost of Capital III-H-1
b. Road Property Investment Values III-H-1

c. Interest During Construction III-H-2
d Interest Schedule of Assets Purchased With Debt Capital III-H-2
e Present Value Of Replacement Cost.... .. .. III-H-4
f. Tax Depreciation Schedules III-H-5
i Bonus Depreciation..... ....III-H-5
ii. Asset Tax Lives..... ....III-H-9
g Average Inflation In Asset Prices III-H-9
h. Discounted Cash Flow... ....III-H-9
i. DRR Capital Structure III-H-10
ii PTC Investment III-H-13
i. Computation of Tax Liability – Taxable Income III-H-15
j Operating Expenses III-H-15
k Summary of SAC... .... III-H-16
2. Maximum Rate Calculations III-H-17
a. The NS Modifications to the MMM Analysis are Unnecessary and Improper.....
.. . .III-H-18
i. NS May Not Lawfully Modify the MMM Analysis in an Adjudicatory Proceeding Because the Board Adopted MMM in a Formal Rulemaking III-H-18
ii. The NS Modifications to the MMM Analysis are Unlawful III-H-18
iii NS Improperly Treats PTC Costs as Unique to TIH Traffic III-H-22
b DuPont Correctly Indexed Variable Costs In the MMM Model III-H-24
3. Maximum Reasonable Rates III-H-26

EXHIBITS

REBUTTAL EXHIBIT II-A

1 Variable Cost, Jurisdictional Threshold, Tariff Rate and Revenue/Variable Cost Ratios Per Car for DuPont Movements – 2Q09

2. Variable Cost, Jurisdictional Threshold, Tariff Rate and Revenue/Variable Cost Ratios Per Car for DuPont Movements – 3Q09

3. Variable Cost, Jurisdictional Threshold, Tariff Rate and Revenue/Variable Cost Ratios Per Car for DuPont Movements – 4Q09

4 Variable Cost, Jurisdictional Threshold, Tariff Rate and Revenue/Variable Cost Ratios Per Car for DuPont Movements – 1Q10

5 Variable Cost, Jurisdictional Threshold, Tariff Rate and Revenue/Variable Cost Ratios Per Car for DuPont Movements – 2Q10

6. Variable Cost, Jurisdictional Threshold, Tariff Rate and Revenue/Variable Cost Ratios Per Car for DuPont Movements – 3Q10

7. Variable Cost, Jurisdictional Threshold, Tariff Rate and Revenue/Variable Cost Ratios Per Car for DuPont Movements – 4Q10

8. Variable Cost, Jurisdictional Threshold, Tariff Rate and Revenue/Variable Cost Ratios Per Car for DuPont Movements – 1Q11

9. Variable Cost, Jurisdictional Threshold, Tariff Rate and Revenue/Variable Cost Ratios Per Car for DuPont Movements – 2Q11

10. Variable Cost, Jurisdictional Threshold, Tariff Rate and Revenue/Variable Cost Ratios Per Car for DuPont Movements – 3Q11

11. Variable Cost, Jurisdictional Threshold, Tariff Rate and Revenue/Variable Cost Ratios Per Car for DuPont Movements – 4Q11

12 Variable Cost, Jurisdictional Threshold, Tariff Rate and Revenue/Variable Cost Ratios Per Car for DuPont Movements – 1Q12

13 DuPont Rebuttal Miles Calculations

14. Summary of DuPont's Rebuttal Tons Per Car Calculations

15. Summary of Traffic and Operating Characteristics for DuPont Movements

16 Summary of Tariff Rates for DuPont Movements 2Q09 - 1Q12

17. Summary of Outlier Miles Excluded

REBUTTAL EXHIBIT II-B

1. Comparison of Changes in NS Costs and RCAF – 1997 TO 2009

   Attachment No 1 - Summary of Changes in NS Variable Costs and Contract Adjustment Mechanism –1997 to 2009

2. REDACTED (HIGHLY CONFIDENTIAL)

REBUTTAL EXHIBIT III-A

1 Cross-Over Traffic

2. Demonstration of DuPont and NS TCS/TDIS Intermodal Traffic Revenue Calculation Methodologies and Development of Adjustment Indices Required to Correct DuPont Opening Overstatement and NS Reply Understatement

3 Comparison of DuPont and NS Revenue Calculation for TCS Moves

REBUTTAL EXHIBIT III-C

1. Data Sufficiency Rebuttal

   Attachment No 1 - REDACTED (HIGHLY CONFIDENTIAL)

   Attachment No. 2 - REDACTED (HIGHLY CONFIDENTIAL)

   Attachment No 3 – REDACTED (HIGHLY CONFIDENTIAL)

2. A Visual Representation of 65% of the Grade Errors Claimed by NS (0.5% or less)

REBUTTAL EXHIBIT III-D

1. General and Administrative Expense

2 Maintenance Of Way

   Appendix A – Rebuttal to NS Reply Comments

   Appendix B – MOW Rebuttal – Additional Supporting Information

REBUTTAL EXHIBIT III-F

1 DRR Road Property Investment

2. Rebuttal Report and Appraisal Review of Retrospective Appraisal of Land for E I DuPont de Nemours and Company (DuPont) Stand Alone Railroad (SARR) in 20 Eastern States

REBUTTAL EXHIBIT III-G

1 Land Inflation Values

REBUTTAL EXHIBIT III-H

1 Summary of SAC Results

2 Maximum Markup Methodology R/VC Ratios

3 Comparison of NS Tariff Rates and STB Maximum Rates Per Car for DuPont Movements - - 2Q09

4. Comparison of NS Tariff Rates and STB Maximum Rates Per Car for DuPont Movements - - 3Q09

5 Comparison of NS Tariff Rates and STB Maximum Rates Per Car for DuPont Movements - - 4Q09

6 Comparison of NS Tariff Rates and STB Maximum Rates Per Car for DuPont Movements - - 1Q10

7. Comparison of NS Tariff Rates and STB Maximum Rates Per Car for DuPont Movements - - 2Q10

8. Comparison of NS Tariff Rates and STB Maximum Rates Per Car for DuPont Movements - - 3Q10

9 Comparison of NS Tariff Rates and STB Maximum Rates Per Car for DuPont Movements - - 4Q10

10 Comparison of NS Tariff Rates and STB Maximum Rates Per Car for DuPont Movements - - 1Q11

11 Comparison of NS Tariff Rates and STB Maximum Rates Per Car for DuPont Movements - - 2Q11

12 Comparison of NS Tariff Rates and STB Maximum Rates Per Car for DuPont Movements - - 3Q11

13. Comparison of NS Tariff Rates and STB Maximum Rates Per Car for DuPont Movements - - 4Q11

14 Comparison of NS Tariff Rates and STB Maximum Rates Per Car for DuPont Movements - - 1Q12

PART II-A

PUBLIC VERSION

Table of Contents

II. MARKET DOMINANCE II-A-1

A QUANTITATIVE MARKET DOMINANCE II-A-1

1. Traffic and Operating Characteristics II-A-1

a Loaded Miles II-A-1

b Tons per Car II-A-4

2 Variable Cost Calculations II-A-5

3. R/VC Ratios II-A-6

PUBLIC VERSION

II. MARKET DOMINANCE

In this Part II, DuPont presents its rebuttal to NS's reply market dominance evidence Part II-A addresses quantitative market dominance and Part II-B addresses qualitative market dominance

A. QUANTITATIVE MARKET DOMINANCE

NS takes issue with DuPont's development of two (2) of the traffic and operating characteristics needed to develop the variable costs for the issue moves, i.e., (1) loaded miles and (2) tons per car. DuPont addresses these two differences below

1. Traffic and Operating Characteristics

NS challenges DuPont's use of predominant routes to develop route mileage for the issue lanes NS also criticizes DuPont's development of average tons per car for lanes for which there is no waybill data available in 2009 or 2010. Each is discussed below.

a. Loaded Miles

In Opening, DuPont relied upon the miles for the predominant route of each movement in its development of variable costs. Subsequent to filing Opening, the Board issued a decision in the market dominance phase of *M&G*. One of the issues addressed by the Board in *M&G* was the calculation of loaded miles for use in developing variable costs. The Board concluded in *M&G* that the weighted average approach to developing loaded route miles is "more consistent with real-world operations than [the] predominant route approach."[1]

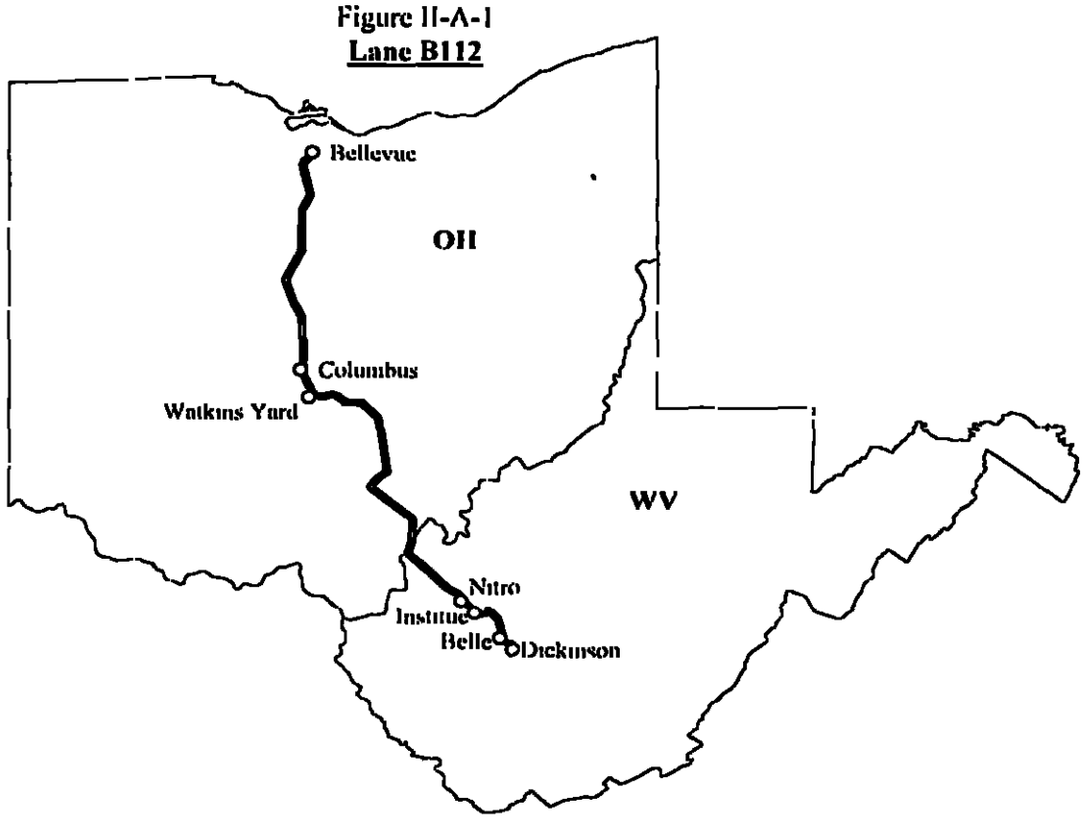
In Reply, NS stated that "[t]he most reliable and representative approach is to take a weighted average of mileages that reflect all the real world routing of DuPont's traffic between a particular origin and destination pair. This is the approach NS has taken to calculating this

[1] *See M&G*, p. 23.

operating characteristic."[2] NS emphasized that "all" real world routings must be taken into account. However, in a footnote two pages later NS admits "[a] very small fraction of the traffic records may contain data errors. NS has excluded these data anomalies from its mileage calculations by requiring a route to account for at least 10% of a lane's traffic."[3] NS does not adhere to its self-imposed "10% rule" in its calculation of weighted average miles. Also, in its narrative and supporting workpapers, NS does not explain why certain traffic was excluded, other than labeling this traffic under the heading "Outliers Dropped" in its workpapers.[4]

Using Lane B112 and Figure II-A-1 below as an example, NS violated its "10% rule" without explanation

Figure II-A-1
Lane B112



[2] *See* NS Reply, p. II-A-4.

[3] *See* NS Reply, p. II-A-6, footnote 9

[4] *See* NS Reply workpaper "DuPont Issue Traffic Mileages NS Reply xls" at level Sheet 1, Row 232-234

For the Lane B112 traffic moving from Columbus, OH to Belle, WV, 73 percent of the issue traffic travelled the direct route depicted in blue above according to NS provided records. The remaining 27 percent of the traffic (according to NS records) travelled from Columbus, OH to Bellevue, OH and then from Bellevue back to Columbus and onto Belle, WV NS eliminated this 27 percent of the traffic from its calculation of miles without explanation.[5] A review of Figure 1 above demonstrates that NS adjusted its calculation of route miles by eliminating the out-of-route movement miles from Columbus to Bellevue to Columbus and instead relied on the direct route from Columbus to Belle

NS's handling of the issue traffic in the thirteen (13) lanes identified in Rebuttal Exhibit II-A-17 is identical to NS's handling of the issue traffic in Lane B112, i.e , a circuitous out-of-route of movement was included in NS's records for more than 10 percent of the traffic However, for these thirteen (13) lanes, NS did not make the adjustment to eliminate the out-of-route movement miles like it did for Lane B112. For purposes of Rebuttal, DuPont has conformed the development of miles for these thirteen (13) lanes to be consistent with NS's handling of Lane B112, as shown in Rebuttal Exhibit II-A-17.

For two (2) lanes (A22 and B85), NS shows two different mileage values for the same route. NS's car event data does not support different mileages[6] for the same route. In Rebuttal, DuPont uses the mileages supported by NS's car event data, i.e., Lane A22 equals 60 miles and Lane B85 equals 19 miles.

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[5] NS followed this same unexplained approach of eliminating more than 10 percent of a lane's traffic as "outliers" for Lane B2 (NS eliminated 13.5 percent) and Lane B93 (NS eliminated 13 percent)

[6] In Reply Exhibit II-A-1 under the section for Lane B85, NS states that "[d]uring periods of torrential rains, such as hurricanes, the terminal experiences severe flooding To mitigate the potential flood damage, railcars are sometimes moved from the yard to higher ground north of Lemoyne, AL These moves are part of a hurricane plan for the Mobile area They are non-revenue, contingency moves which are reported and recorded in the car event data but are not charged to the customer.' DuPont does not see any movements north of Lemoyne, AL for either of these movements Both sets of miles show the same routing

For the remaining issue lanes and in order to minimize differences, DuPont accepts NS's loaded mileage calculations. Rebuttal Exhibit II-A-13 summarizes DuPont's loaded miles calculation for each issue movement and shows the difference between NS's Reply and DuPont's Rebuttal calculations

b. Tons per Car

In Opening, DuPont used actual NS 2009 and NS 2010 waybill data to develop weighted average tons per car. In those instances where the tons per car were not included in the NS waybill data, the weighted average tons per car from the waybill data available for the specific car type were used

In Reply, NS adopts DuPont's calculations of tons per car where DuPont relied upon actual waybill data. However, for those lanes where there were no movements in 2009 or 2010, i e , no waybill data was available, NS states that it calculated the average tons per car based on car type and commodity being transported NS's tons per car calculations are displayed in Table II-A-1 of its Reply along with a comparison of its results to DuPont's Opening tons per car calculations.[7] However, in its Reply workpapers NS does not utilize the values shown in its Table II-A-1 Rather, NS used values that are keyed in with no source information or explanation supporting the calculations DuPont has been unable to recreate NS's unexplained calculations. These keyed in values in NS's workpapers are used in NS's URCS Phase III calculations, which are then used to calculate NS's R/VC ratios.

[7] NS Reply Table II-A-1 does not include one lane (Lane B44) for which surrogate data is needed NS also contends that the tons per car listed for Lane B22 are for a Tank Car > 22,000 Gallons However the tons per car displayed for Lane B22 are *the weighted average for STCC 2818130 in a Tank Car < 22,000 Gallons as there are no movements for STCC 2818131 in a* Tank Car > 22,000 Gallons in the DuPont identified traffic

As DuPont was unable to determine the source of NS's Reply tons per car, DuPont continues to utilize the weighted average tons per car by car type that it developed in Opening in calculating Rebuttal variable costs.

Rebuttal Exhibit II-A-14 summarizes DuPont's calculation of the average tons per car for each issue movement and shows the difference between NS's Reply and DuPont's Rebuttal calculations.

2. Variable Cost Calculations

DuPont incorporated the above modifications in its Rebuttal variable cost calculations. Rebuttal Exhibit II-A-1 through Rebuttal Exhibit II-A-12 contain the updated calculation of NS's variable costs for each of DuPont's issue movements using the STB's NS 2009, 2010 or 2011 URCS unit costs. The 2009 NS URCS variable cost calculations are indexed to mid-second quarter 2009 ("2Q09"), mid-third quarter 2009 ("3Q09") and mid-fourth quarter 2009 ("4Q09") wage and price levels using the STB prescribed indexing procedures.[8] The 2010 NS URCS variable cost calculations are indexed to mid-first quarter 2010 ("1Q10") through mid-fourth quarter 2010 ("4Q10") wage and price levels using the STB prescribed indexing procedures.[9] The 2011 NS URCS variable cost calculations are indexed to mid-first quarter 2011 ("1Q11") through mid-first quarter 2012 ("1Q12") wage and price levels using the STB prescribed indexing procedures.[10] Rebuttal Exhibit II-A-15 summarizes the traffic and operating parameters used for each lane in the variable cost calculations.

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[8] *See* e-workpaper "NS09 to 4Q10 Phase III INDEX xlsx."

[9] *See* e-workpaper "NS10 to 1Q12 Phase III INDEX xlsx."

[10] *See* e-workpaper "NS11 to 1Q12 Phase III INDEX xlsx."

3. R/VC Ratios

NS does not disagree with the rates utilized by DuPont in Opening A summary of the 2Q09 through 1Q12 rates, applicable to the DuPont issue movements is shown in Rebuttal Exhibit II-A-16. To the extent DuPont's Rebuttal variable cost calculations for the issue traffic changed as a result of the loaded miles and tons per car calculations discussed above, the corresponding R/VC ratios also changed.

PART II-B

PUBLIC VERSION

Table of Contents

II. MARKET DOMINANCE II-B-1

B QUALITATIVE MARKET DOMINANCE II-B-1

1 Intramodal Competition II-B-3

2 Intermodal Competition II-B-6

a Acid, Sulfuric B-7

1) Red Lion (Reybold) Origin Shipments. B-13

2) Bellwood Origin Shipments. B-27

3) Bayway (Morses Mill) Origin Shipments. B-31

4) Miami Fort Origin Shipments. B-32

b Acid, Spent Sulfuric B-34

c Acid, Fuming Sulfuric (Oleum) B-37

d. Acid, Muriatic B-42

e. Aniline Oil B-46

f. Caustic, Potassium (Caustic Potash) B-54

g. Caustic, Sodium (Caustic Soda) B-57

h Dimethyl Ether B-72

i. Dimethyl Formamide B-84

j. Dimethyl Sulfate B-87

k. Lime B-90

l. Methylamines, Anhydrous B-94

m. Methylamines, Aqueous B-123

n Petroleum Coke B-132

o. Polyethylene B-141

p. Sodium Methylate B-149

q. Sulfur Trioxide (SO3) B-153

r. Titanium Dioxide B-156

s. Waste Flammable Liquid B-200

t Zircon Sand B-202

3. The Limit Price Methodology is lawful and economically sound. B-206

a. Overview of the LPM. B-207

b. The LPM should only be used to presume the absence of effective competition B-209

c. The Board should substitute R/VC>180 for RSAM B-215

d. The LPM establishes a presumption of market dominance for 77 of the 99 contested movements B-216

PUBLIC VERSION

II. MARKET DOMINANCE

B. QUALITATIVE MARKET DOMINANCE

In this Part II.B, DuPont presents its rebuttal qualitative market dominance evidence NS has contested its market dominance over 99 of 138 issue movements, which include 20 of the 26 issue commodities The six commodities for which NS has not contested market dominance at all over any issue movement are bio-propanediol (3 lanes), chlorine (4 lanes), difluoroethane (2 lanes), glycolic acid (1 lane), monomethyl formamide (1 lane), and titanium tetrachloride (1 lane). Therefore, DuPont has conclusively established NS's market dominance over the 39 uncontested movements, including all of the movements for the 6 commodities named above

Subpart B.1 addresses the absence of effective intramodal competition. NS has alleged the existence of intramodal competition for just the two issue movements of muriatic acid. For all of the other issue movements, NS concedes the absence of intramodal competition.

Subpart B.2 presents evidence of either the absence of any intermodal competition at all or the absence of effective intermodal competition. NS has alleged the existence of an effective intermodal alternative for all 99 contested movements. This includes direct truck alternatives for 82 of the 99 contested movements and transload alternatives for 34 of the 99 contested movements. For some lanes, NS has alleged both a direct truck and transload alternative. NS has not alleged the existence of intermodal competition from any other mode (*e g* . barge)

DuPont's Rebuttal Evidence on intermodal competition in subpart B-2 is presented by commodity for each of the following 20 contested commodities

a. Acid, Sulfuric
b. Acid, Spent Sulfuric
c. Acid, Fuming Sulfuric ("Oleum")
d. Acid, Muriatic ("HCl")
e. Aniline Oil
f. Caustic, Potassium
g. Caustic, Sodium

h. Dimethyl Ether ("DME")
i. Dimethyl Formamide ("DMF")
j. Dimethyl Sulfate ("DMS")
k. Lime
l. Methylamines, Anhydrous ("AHMs")
m. Methylamines, Aqueous ("AQMs")
n. Petroleum Coke ("Pet Coke")
o. Polyethylene
p. Sodium Methylate
q. Sulfur Trioxide ("SO3")
r. Titanium Dioxide ("TiO2")
s. Waste, Flammable Liquid ("WFL")
t. Zircon Sand

All issue movements of a commodity are covered under the respective commodity headings. Each of the foregoing subsections addresses issues generally applicable to the issue commodity followed by a lane-by-lane discussion of factors specific to individual movements. In a few instances where there are common facts across two or more commodities, DuPont presents a full set of facts in the discussion of one commodity and incorporates those facts by reference in the discussion of the other commodities (*e.g.*, AHM and AQM, AHM and DME, sulfur trioxide and Oleum, sulfuric acid and spent sulfuric acid).

In subpart B.3, DuPont has added a section to the General Procedures outline in which it presents market dominance evidence based upon the Limit Price Methodology ("LPM") announced in the Board's recent decision in M&G Polymers USA, LLC v. CSX Transp. Inc., Docket No. NOR 42123 (served Sept. 27, 2012). DuPont responds to NS's critique of the LPM and demonstrates that 77 of the 99 lanes are entitled to a presumption of market dominance even accepting all of the NS Reply Evidence of intermodal transportation alternatives

In Part I- Counsel's Argument and Summary of Evidence, DuPont has addressed broad-based legal principles that apply across all or large subsets of the issue commodities and summarized common fact evidence across various commodities. The individual commodity

subsections in this Part II-B make general reference to the appropriate legal principles when invoked and present detailed fact evidence. Therefore, this Part II.B should be read in conjunction with Part I.A.2 for DuPont's complete rebuttal evidence and argument on qualitative market dominance.

1. Intramodal Competition[1]

NS concedes that it does not face intramodal competition for any of the issue movements, except for Lanes A-18 and A-19, which are movements of muriatic acid from DuPont's Louisville, KY plant to customers in Decatur, IL and Lafayette, IN, respectively. NS claims that CSXT provides effective intramodal competition via reciprocal switching at both the origin and destinations. NS Reply II-B-9.

It is particularly notable that NS does not even bother to inform the Board of the cost to DuPont to pursue this alternative rail option. Instead, NS claims that Board precedent "assume[s] as a matter of course that a complainant who had access to more than one railroad would not be able to demonstrate market dominance." Id. This is simply not true because Market Dominance Determinations, 365 I.C.C at 132, contains a discussion of factors that the Board will consider to determine whether rail alternatives compete with one another. Very few prior cases have actually required the Board to address the effectiveness of intramodal competition To the extent the issue has arisen, such as in the single decision cited by NS, it typically has been in the context of whether potential intramodal competition from a build-out would provide effective competition and the issue never progressed to the question of actual competition from a second railroad

[1] The evidence and testimony in this section is sponsored by Thomas D Crowley.

Although the Board's *dicta* has suggested that it would presume the absence of market dominance whenever there are two railroads that can provide service between the same two points, the Board in fact must determine whether such competition is effective. The Board has not adopted a formal presumption that two railroads automatically are effective competitors, despite NS's contrary suggestion. Furthermore, in the Board's recent public hearing in Ex Parte No 705, Competition in the Railroad Industry, numerous shippers complained that, although head-to-head rail competition once provided benefits, their experience is that railroads do not compete any longer, and that the Board should not presume the existence of such competition.[2]

For Lanes A-18 and A-19, the intramodal competition from CSXT is not equivalent to direct head-to-head competition Rather, CSXT's access to both the origin and destination is via a reciprocal switch that requires the participation of NS at both ends, including the payment of two separate switch fees to NS that add $1082 on top of the CSXT line-haul charge The Board has held that "[w]hen one carrier participates in all available routings, it will not necessarily have any incentive to moderate the revenue collected from this traffic." Metropolitan Edison Co. v Conrail, 5 I.C C 2d 385, 413 (1989).[3] In addition, a reciprocal switch at just one end of a movement is less efficient than direct rail transportation, much less a reciprocal switch at both ends.

The ineffectiveness of the CSXT reciprocal switching alternative as a constraint upon NS pricing can be observed in the actual NS rate history upon expiration of its contracts with DuPont in 2009. In Lane A-18, NS increased its rate by {[redacted]} in 2010, and by another {[redacted]} in 2011.

[2] E.g., Supplemental Comments of the Interested Parties 6-8, STB Docket No EP 705 (filed July 25, 2011).

[3] See also, Amstar Corp v. Atchison, Topeka & Santa Fe Ry., No 37478, 1987 ICC LEXIS 47, *11 (Nov 23, 1987) ("a railroad occupying a monopoly position in a routing would not necessarily be restrained from setting an unreasonably high rate for that portion and keeping the monopoly profits for itself, regardless of whether competition existed over other segments ")

for a cumulative 2 year increase of {[redacted]}.[4] Similarly, in Lane A-19, NS increased its rate by {[redacted]} in 2010, and by another {[redacted]} in 2011, for a cumulative 2 year increase of {[redacted]}.[5] Although NS claims that this dramatic rate increase was "{[redacted]}," that cannot explain the full magnitude of this rate increase.[6] NS alleges that DuPont's legacy contract that expired in 2009 {[redacted]}.[7] This translates to a 46 8% increase in the contract rates over that time.[8] But during that same time NS's variable costs for transporting muriatic acid increased by 54 2%, which would justify only a 5 1% post-contract rate increase.[9]

The Board's new Limit Price Methodology ("LPM") also provides a means for the Board to evaluate whether the CSXT alternative constitutes effective intramodal competition For Lane A-18, the CSXT line-haul rate is $3722 per car[10] and the NS reciprocal switch charges are $582 per car at Louisville and $500 per car at Decatur,[11] which brings the total rate to $4804 per car. The challenged NS rate is $4596 per car The Limit Price R/VC ratio of 352% is well above the NS RSAM of 275%.[12]

For Lane A-19, the CSXT line-haul rate is $3321 per car,[13] and the NS reciprocal switch charges are $582 per car at Louisville and $500 per car at Decatur,[14] which brings the total rate

[4] Dup. Op Ex II-B-3.

[5] Dup Op Ex II-B-3.

[6] NS Reply II-B-92

[7] Id. at II-B-92 to -93.

[8] Dup. Reb Ex II-B-1, at 1

[9] Dup Reb. Ex. II-B-1 Attachment 1, Cols (8), (9)

[10] Dup. Reb WP "CSX1 Tariff 28194" (pricing based on STCC 28194).

[11] NS Reply WP "NS 8001 Switching Tariff pdf."

[12] 352% = $4804 / $1365

[13] Dup Reb WP "CSX1 Tariff 28194" (pricing based on STCC 28194).

to $4403 per car The challenged NS rate is $6139 per car. Although the Limit Price R/VC ratio of 257% is slightly below the NS RSAM of 275%,[15] the enormous NS rate increases noted above should disabuse the Board of any notion that the CSXT double reciprocal switch alternative is an effective constraint.[16]

2. Intermodal Competition

In this section, DuPont responds to NS's claims that direct trucking and transload alternatives constitute effective competition for 99 of the issue movements. For some commodities or individual movements, the alternatives proposed by NS are not feasible, practical, or available, for some lanes, NS has not calculated alternative rates correctly; and for some lanes, NS uses expired rates or carriers that no longer exist. DuPont addresses these subjects by issue commodity in the subsections below. Within the discussion of each commodity, DuPont also addresses each issue movement of that commodity, including any facts that are specific to an individual movement

[14] NS Reply WP "NS 8001 Switching Tariff.pdf"

[15] 257% = $4403 / $1710

[16] As discussed in Part II B 3, the LPM should be used only to presume the existence of effective competition, not the absence of effective competition

a. Acid, Sulfuric [17]

In its Opening Evidence, DuPont challenged the NS rates for transporting Sulfuric Acid in twenty-six (26) case lanes NS, in its Reply Evidence, has contested market dominance over the following twenty-three (23) case lanes:[18]

Table II-B-1
Contested Sulfuric Acid Lanes

Lane #	Origin	Interchange	Destination	Customer
A-2	Bayway, NJ	NS Direct	Waynesville, NC	Giles Chemical Co.
A-23	Reybold, DE	NS Direct	Detroit, MI	PVS Chemicals
A-25	Reybold, DE	NS Direct	Morrisville, PA	Basic/ Univar
B-92	Bellwood, VA	Petersburg, VA	Dallas, GA	Basic / Univar
B-93	Bellwood, VA	Charlotte, NC	Fort Mill SC	Nation Ford
B-94	Bellwood, VA	Petersburg, VA	Rockwell, NC	Alchem Inc
B-101	Miami Fort, OH	Cincinnati, OH	Dallas, GA	Basic Chemical
B-126	Reybold, DE	Streeter, IL	Albuquerque, NM	Basic Chemical Solutions LLC
B-127	Reybold, DE	Baltimore Bayview Yard	Baltimore, MD	Basic Chemical Solutions LLC W.R. Grace & Co. Delta Chemical Corporation
B-128	Reybold, DE	Chicago, IL	Blaire, NE	Cargill Incorporated
B-129	Reybold, DE	Birmingham, AL	Brewton, AL	Georgia Pacific Brewton LLC
B-130	Reybold, DE	Charlotte, NC	Castle Hayne, NC	Elementis Chromium
B-131	Reybold, DE	Kansas City, MO	Clifton, AZ	Freeport-McMoran Copper & Gold
B-132	Reybold, DE	Chicago, IL	Carson, SD	Harms Oil
B-134	Reybold, DE	Memphis, TN	Ferguson, MS	Georgia Pacific
B-135	Reybold, DE	Chicago, IL	Hastings, NE	Equalizer Midwest
B-136	Reybold, DE	Cincinnati, OH	Indianapolis, IN	Univar
B-137	Reybold, DE	Chicago, IL	Omaha, NE	Univar USA Inc.
B-138	Reybold, DE	E. St. Louis, MO	Orange, TX	DuPont
B-139	Reybold, DE	Streeter, IL	Phoenix, AZ	Basic Chemical Solutions LLC
B-140	Reybold, DE	Chicago, IL	Sioux City, IA	Basic Chemical Solutions LLC

[17] The evidence and testimony in this section is jointly sponsored by Mary Pileggi, North American Region Logistics Manager, and Ted Edward Morris, Operations Business Leader-Sulfur Products

[18] NS has not contested market dominance over lanes A-24, B-118, and -119.

Lane #	Origin	Interchange	Destination	Customer
B-141	Reybold, DE	Toledo, OH	Toledo, OH	Jones Hamilton
B-142	Reybold, DE	Hagerstown, MD	Washington, WV	DuPont

The crux of NS's Reply Evidence on Sulfuric Acid, at pages II-B-108 to -128, is that, if DuPont has trucked sulfuric acid to any location, trucking provides effective competition at essentially every location. There is no rhyme or reason as to why NS claims no market dominance for the twenty-three lanes versus not challenging market dominance for the three remaining lanes other than NS's inability to find some alternative to throw at the wall that did not exceed NS's theory of showing a 20% or less rate differential compared to current rail rates. The market dominance statute does not require a showing that there are no alternatives with rates within 20% of the rail rate, but instead asks whether any alternative provides effective competition to NS's rail transportation. Applying the STB's market dominance guidelines in Market Dominance Determinations, DuPont has established that all twenty-six lanes have no effective competition to NS.

As is the case for other issue commodities, NS has failed to properly apply the market dominance guidelines. Those guidelines consider, among other factors, both the amount of the product in question that is transported by motor carrier where rail alternatives are available, and the amount of the product that is transported by motor carrier under transportation circumstances similar to rail. Market Dominance Determinations, 365 I.C.C at 133. Instead, NS contends that trucks universally provide effective competition because "DuPont commonly transports sulfuric acid by truck." NS Reply II-B-109 Likewise, NS contends that sulfuric acid "is commonly transloaded today." NS Reply II-B-110. There are several problems with these assertions and the examples that NS offers to try to justify its position.

Direct Truck. NS proposes a direct truck alternative for 14 of the 23 contested movements of sulfuric acid NS does not refute DuPont's overall assertion made in opening that trucks are used predominantly for short-distance movements of sulfuric acid, for low volume purchasers, to serve customers without rail access, and for expedited or emergency shipments to rail-served customers Nor does NS substantively dispute DuPont's testimony and evidence in its Opening that DuPont has not used trucks extensively, if at all, for any of the issue movements. Rather, NS simply relies upon the fact that DuPont has shipped sulfuric acid in trucks to many other destinations to claim that trucks are effective competition for the issue movements.

Although NS has overstated the number of sulfuric acid trucks, DuPont does not contest the fact that it ships a lot of sulfuric acid by truck.[19] DuPont ships more sulfuric acid by truck than any other issue commodity because DuPont produces more sulfuric acid at more locations than any other issue commodity. But for the issue movements, trucking is not an effective competitive option due to multiple factors

One of the factors that most distinguishes the contested sulfuric acid movements from all of DuPont's historical truck shipments are the distances. Of the 23 contested movements, 19 would require direct trucking from 400 up to 2354 miles.[20] Indeed, 10 of those lanes would be over 1000 miles In contrast, DuPont's truck shipment history for sulfuric acid over 5 years from 2006-10, as reflected in DuPont Rebuttal Workpaper "DuPont Sulfuric Acid Truck Shipments

[19] NS's own workpapers show that DuPont shipped {{[redacted]}}, not {{[redacted]}}, truckloads of sulfuric acid between 2006 and 2010 NS Reply II-B-109, citing NS Reply WP "DuPont Sulfuric Acid Truck Shipments xls" NS's count fails to account for duplicate invoice records and the different types of billing records in the data. To obtain an accurate count of truck shipments using DuPont's truck bill records, it is necessary to filter the records to show only linehaul bill types (each shipment is the subject of only one linehaul bill but may be the subject of multiple balance due bills or other bills) and remove linehaul records containing a duplicate document number (a document number is associated with only one shipment) See Dup Op. WP "Sulfuric Acid Truck Shipments xls," "Notes" worksheet, in the "Sulfuric Acid" folder (explaining adjustments that DuPont made to remove inaccurate and duplicate records) A corrected version of the NS reply workpaper is included as DuPont Rebuttal Workpaper "DuPont Sulfuric Acid Truck Shipments (corrected)-Rebuttal xlsx," and contains an "Adjustments" worksheet that identifies all adjustments that DuPont made to the data in the workpaper

[20] Dup. Op Ex II-B-1

(corrected)-Rebuttal.xlsx," contains 372 origin-destination pairs, of which only 45, or 12%, exceed 400 miles in distance.[21] This includes all 5 of the lanes that NS identifies as examples of DuPont trucking sulfuric acid over long distances.[22] NS Reply II-B-109. Only 5 of those 44 lanes averaged more than 5 trucks per year over the 5 years of data, and none of them is rail-served.[23] This demonstrates that the overwhelming majority of DuPont's sulfuric acid truck shipments are at distances below 400 miles and that, when DuPont trucks sulfuric acid over longer distances, it is in smaller volumes or to locations without rail access. Because these truck factors are different from nearly all of the issue sulfuric acid movements, they indicate that trucks do not provide effective competition. Market Dominance Determinations, 365 I.C.C. at 133 (effective competition may be deduced from the amount of product transported under circumstances similar to rail, such as size and distance).

Another distinguishing factor is DuPont's inability to expand its truck loading capacity at Reybold, which is the origin for 18 of the 23 contested movements. Consequently, regardless of lower truck rates, DuPont cannot load a significant number of additional trucks at Reybold without displacing customers that can only receive delivery by truck. These limitations are detailed in the discussion of the Reybold facility and individual lanes in the first subsection below and at pages II-B-15 to -16 of the DuPont Opening Evidence.

In addition, the customers for 10 of the 23 contested movements need and/or require rail delivery. Therefore, trucks are not feasible alternatives for those movements. These facts are

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[21] Dup. Reb. WP "Sulfuric Acid Truck Shipments (corrected)-Rebuttal.xlsx," "Shipment Distances" worksheet.

[22] All {{[redacted]}} truckloads for these 5 combined long-distance examples that NS highlights cover a five year period, which is an average of {{[redacted]}} truckloads a year or less than {{[redacted]}} truckloads a week. Dup. Reb. WP "Sulfuric Acid Truck Shipments (corrected)-Rebuttal.xlsx," "Distance Examples" worksheet. The examples highlighted by NS are also less than {{[redacted]}} of the total truckloads of sulfuric acid that NS reports that DuPont shipped over the five year period. This clearly contradicts NS's claim that "[m]any of these shipments traverse long distances." NS Reply II-B-109.

[23] Dup. Reb. WP "Sulfuric Acid Truck Shipments (corrected)-Rebuttal.xlsx," "Shipment Distances" worksheet (the five lanes are Richmond, VA to Springfield, MA, Convent, LA to Gregory, TX, Convent, LA to Batesville, AR, Convent, LA to Victoria, TX, and Wurtland, KY to New Johnsonville, TN).

detailed below in the individual lane discussions and at pages II-B-18 and -24 of the DuPont Opening Evidence.

Finally, NS misconstrues a DuPont trucking RFP for the Reybold and Bayway (Morses Mill) plants as evidence that even DuPont "believes that trucking sulfuric acid can be a competitive alternative to rail." NS Reply II-B-109 to -110 Rather, that RFP reinforces DuPont's opening testimony regarding the limited use of trucks for short distances NS fails to point out that the RFP for truck movements from Red Lion and Morses Mill, which are located in Delaware and New Jersey, respectively, is only for destinations in New Jersey, Pennsylvania and Delaware. These are all movements consistent with truck competition over short distances. In contrast, only 1 issue movement of sulfuric acid is located in any of these surrounding states

NS also erroneously cites the RFP as evidence that Red Lion (Reybold) truckloads are expected to {{[redacted]}}. NS Reply II-B-110. NS mistakenly has used the same {{[redacted]}} truck count from the Morses Mill forecast referenced in the preceding paragraph, not the Red Lion forecast. The Red Lion forecast is only {{[redacted]}}, which does not even {{[redacted]}} the number of trucks from 2011 when the facility was gradually ramping up production after an 18-month shutdown.[24] Dup Op. Narr. II-B-11.

Transloading. NS has proposed a transloading alternative for 20 of the 23 contested sulfuric acid movements. NS asserts that, because transloading sulfuric acid is feasible and sulfuric acid is commonly transloaded, transloading provides effective competition for NS's rates. NS Reply II-B-110. NS, however, distorts the STB's market dominance guidelines in Market Dominance Determinations by taking a leap in logic from whether something is

[24] Dup. Reb WP "Red Lion Bid xls"

physically possible as distinguished from whether the alternative provides effective competition for the issue movement.

It is notable that 17 of the 20 proposed transload alternatives are a truck-to-rail transload at the origin rather than the predominant rail-to-truck transloading that occurs at the destination. This type of transload does not regularly occur in the industry and NS does not provide much evidence to dispute this fact Dup. Op. Narr II-B-17. In fact, the only evidence that NS presents is that DuPont transloaded {{[redacted]}} trucks into rail cars at CSXT TRANSFLO's Elizabeth, NJ terminal between June 2006 and April 2007. Those are the only instances to which NS can point from five years' worth of truck shipment data showing {{[redacted]}} truck shipments A total of 0 16% of all truck shipments over 5 years falls far short of demonstrating that such transloading is a common occurrence. But more to the point, those were not in fact sulfuric acid shipments at all, and thus do not provide even a modicum of support for NS's truck-to-rail transload alternatives.

The foregoing example of a truck-to rail transload actually involved spent sulfuric acid, not sulfuric acid. Because DuPont does not transload sulfuric acid from trucks to rail cars, it was surprised by NS's claim that DuPont had done so even for just a very small volume Therefore, DuPont carefully reviewed each of the {{[redacted]}} truck shipments that NS had identified as a truck-to-rail transload in DuPont's sulfuric acid truck shipment data and discovered that those shipments were miscoded as sulfuric acid shipments when they actually were return shipments of spent sulfuric acid These transloads were back-hauls associated with so-called "loop" shipments of sulfuric acid. For "loop" customers, DuPont ships fresh acid to the customer, the customer returns the spent acid to DuPont for regeneration into fresh acid, and DuPont returns the fresh acid to the customer. All {{[redacted]}} truck shipments identified by NS as truck-to-rail

transloading involved the return of spent sulfuric acid to DuPont, that were miscoded as shipments of fresh sulfuric acid.

Furthermore, all 17 of NS's proposed truck-to-rail transloads require loading trucks at Reybold As noted above and discussed in detail in the subsection on the Reybold facility below, there are significant insurmountable capacity constraints that limit DuPont's ability to load trucks at Reybold for subsequent transloading. There also would be additional costs associated with staging empty rail cars at the bulk terminal and paying rail car storage fees.

Finally, NS completely ignores DuPont's product integrity evidence that the water white and electrolytic grades of sulfuric acid in a 93% concentration cannot be transloaded at all. Dup. Op. Narr. II-B-18. Although DuPont showed that {{ [redacted] }}. NS has proposed transload alternatives without even attempting to address this product integrity issue.

1) Red Lion (Reybold) Origin Shipments.

Of the 23 contested sulfuric acid movements, 18 originate at Red Lion, which is captive to NS for rail service. NS posits a direct truck option, a truck-to-rail transload option, or both for each of the contested movements. NS's position on Red Lion is clear from its Reply Evidence – NS believes that all Reybold traffic is direct-truck competitive for any customer movement east of the Mississippi. NS Reply II-B-112. This sweeping and cavalier statement that would cover any movement from Delaware to any point east of the Mississippi exemplifies the absurdity of NS's Reply as well as NS's mistaken view on competition in general.

NS's Reply is primarily about how many trucks of sulfuric acid DuPont has shipped from Reybold. But, NS's evidence is internally inconsistent when it simultaneously claims that Reybold loads enormous numbers of trucks but then claims that there still is ample capacity to load even more trucks to handle the issue movements.

NS largely ignores or distorts Reybold's significant infrastructure constraints that restrict the number of trucks that it can load. As DuPont stated at page II-B-15 of its Opening Evidence, Reybold has just two truck loading/unloading racks. Because one rack is dedicated to loading fresh sulfuric acid and the other to unloading spent sulfuric acid, DuPont truly has only one rack for loading sulfuric acid into trucks. Also, because the truck and rail loading racks share the same pump, DuPont can only load a truck or a rail car at any point in time, never both simultaneously. In addition, truck loading is less efficient because it takes 140% longer to load the equivalent volume of sulfuric acid into trucks than into rail cars.[25] Id. at II-B-16. Therefore, DuPont would need to construct a new truck loading rack to handle additional trucks.

But, NS completely ignores DuPont's evidence regarding the physical limitations at Reybold to adding truck loading capacity. DuPont's Opening Evidence established that the Reybold plant occupies a small footprint within a large refinery complex that is not owned by DuPont, and consequently has almost no room to expand. Id. Even if such expansion was possible— DuPont does not know if it could acquire the necessary property—DuPont estimated the total cost (excluding real estate acquisition costs) to be {{[redacted]}}.[26] Id. The hurdles to such expansion are too costly and uncertain to be feasible "'[F]easible' is not synonymous with 'possible'—a test of feasibility must include consideration of economic and physical practicality...." Gen. Elec. Co. v. Balt. & Ohio R.R., No. 38125S, 1984 ICC LEXIS 206, at *5 (Oct. 12, 1984). It is well-settled that potential competition must be "sufficiently realistic to effectively constrain the rail rates." Dayton Power & Light Co. v. Louisville & Nash. R.R., 1 I.C.C.2d 375, 383 (1985).

[25] In actuality, between 4 and 5 trucks are needed to fill a rail car, which further exacerbates the inefficiency of trucks relative to rail cars

[26] See Dup Op WP "Reybold Truck Rack Estimate" in the "Sulfuric Acid" folder

NS attempts to dodge the foregoing issues by claiming that DuPont has adequate truck loading capacity to handle the issue movements But NS can only reach that conclusion through selective evidence and gross distortions of fact

First. NS uses an artificially low number of rail cars for the issue movements. NS claims that DuPont shipped a total of {{[redacted]}} rail cars over the 18 Reybold lanes from January 2007 through June 2012. NS Reply II-B-112 Although this is true. the number is distorted by the fact that 15 of those lanes have never had any volume [27] They are new lanes that were added when Reybold reopened after an 18-month shut down However, the reality has been that DuPont cannot compete for most of this business from Reybold because of the high NS rail rates. Consequently. the traffic volume in these lanes has not materialized.

Second. NS overstates the truck capacity at Reybold by ignoring key facts that it presents elsewhere in its evidence. NS claims that Reybold can load {{[redacted]}} trucks during a nine-hour day. NS Reply II-B-112 n 119. NS also points out that DuPont shipped {{[redacted]}} trucks from Reybold over the 5-year period from 2006-10. Id at II-B-112. That averages out to {{[redacted]}} trucks per day during a period in which NS itself notes that production was shut down "for a substantial portion of that period." Id Furthermore. NS has cited to a truck RFP for Reybold in which DuPont forecasted {{[redacted]}} truck shipments for 2012. Id. at II-B-110 That comes to {{[redacted]}} trucks per day every day of the year [28] When coupled with the fact that DuPont also must use the same pump to load rail cars and trucks. this shows that DuPont already has stretched Reybold's truck loading capacity to its limits even if it were to load trucks and rail cars around the clock.

[27] See NS Reply Ex. II-B-5 See also Dup Op Ex. II-B-3 (showing no rate history prior to 2011 for nearly all of the Reybold origin movements)

[28] As noted earlier in the Sulfuric Acid discussion. NS mistakenly claimed the forecast was for {{[redacted]}} trucks which if accurate would have required Reybold to load {{[redacted]}} trucks per day

Finally, NS does not rebut DuPont's evidence regarding Reybold's storage capacity limitations and the fact that Reybold relies upon rail cars for supplemental storage Dup. Op. Narr. II-B-16

Both the direct truck and transload alternatives proposed by NS for the issue movements from Reybold require DuPont to load the sulfuric acid into trucks at the plant. There is no capacity for loading additional trucks; there is no realistic potential even to increase that capacity; and even if DuPont could do so, the cost would be excessive. Therefore, it does not matter what truck or transload rates NS claims are available because DuPont could not use them. Nevertheless, DuPont addresses the facts specific to each Reybold origin lane below

Lane A-23 (Reybold, DE to Detroit, MI): The challenged rate in Lane A-23 is a single line rate from Reybold, DE to PVS Chemicals in Detroit, MI. NS first claims that a direct truck rate that is {{[redacted]}} higher than the NS tariff rate is similar enough to the cost of rail to provide effective competition. NS Reply II-B-114. This {{[redacted]}} differential is close to NS's arbitrary 20% cut off for a lack of effective competition and is above the 10% threshold advocated by DuPont. This truck movement also is 573 road miles, which is clearly beyond the range within which trucks historically have been deemed competitive. See Dup Op. Narr. I-28 n.28. This is indicative of the fact that NS is setting its rates to match those of a higher cost alternative. NS also claims that DuPont has not provided evidence that this customer is a distributor that requires railcars for storage. However, NS fails to acknowledge that the DuPont evidence was presented by DuPont witnesses who are under oath. Furthermore, a look at the public website for PVS Chemicals shows that it is a distributor.[29]

[29] See PVS Chemicals, Inc , http //www pvschemicals com/ (last visited Apr 8, 2013)

NS also claims that DuPont could transload this movement to serve this customer for a rate that is {{ }} lower than the rail rate NS Reply II-B-114 The transload alternative posited by NS, however, is a truck-to-rail transload that is not done by DuPont or any other sulfuric acid producer, except when there is absolutely no other alternative. Moreover, NS does not address {{ }}. Dup. Op. Narr. II-B-18.

Finally, NS does not substantively address the significant infrastructure constraints at Reybold that prevent DuPont from converting this lane for either the truck or transload option.

Lane A-25 (Reybold, DE to Morrisville, PA): This single line rate is from Reybold to DuPont's customer, Basic Chemical Solutions, at Morrisville, PA.[30] NS proposes a direct truck alternative with a {{ }} lower rate. NS Reply II-B-115. But, the difference between the direct truck rate and rail rate for this lane masks the fact that NS has already exercised substantial market power by imposing a { } rate increase over just two years from 2009-11. Dup Reb. Ex. II-B-2.[31] NS alleges that DuPont's legacy contract that expired in 2009 { }.[32] This translates to a 46.8% increase in the contract rates over that time.[33] But during that same time NS's variable costs for transporting sulfuric acid increased by 54.3%, which would justify only a 5.1% post-contract rate increase.[34] Finally, NS ignores the infrastructure limitations at Reybold for truck loading at the production plant as previously discussed

[30] Basic Chemical is now Univar

[31] In preparing its Rebuttal Evidence, DuPont discovered an error in the Excel formula it used to calculate the change in the NS rate for the Exhibit A case lanes in Dup. Op. Ex. II-B-3 Instead of calculating the cumulative rate change from 2009-2011, the formula calculated the cumulative change from 2007-2011. Although NS did not note this error in its Reply Evidence, DuPont has corrected that error in Rebuttal Exhibit II-B-2

[32] Id at II-B-92 to -93.

[33] Dup Reb Ex II-B-1, at 1

[34] Dup Reb Ex. II-B-1 Attachment 1, Cols (8) and (9)

Lane B-126 (Reybold, DE to Albuquerque, NM): The challenged rate for Lane B-126 is the NS tariff from Reybold to the BNSF interchange at Streator, IL. NS does not contend that direct truck is an alternative to rail for this lane, presumably because DuPont's evidence establishes that a direct truck alternative would be nearly {{[redacted]}} higher See Dup Op. Ex. II-B-1. NS, however, posits that a truck-to-rail transload to a different interchange at Philadelphia is {{[redacted]}} less costly than rail NS Reply II-B-115. A truck-to-rail transload, however, is not done by DuPont or any other sulfuric acid producer, except when there is absolutely no other alternative NS also substantively ignores DuPont's evidence on the infrastructure limitations at Reybold for truck loading that render this option infeasible. Finally, this transload alternative violates DMIR by avoiding the interchange in Streator, and instead delivering the sulfuric acid to CSXT at Philadelphia and having CSXT deliver the rail cars to BNSF at Chicago. See supra Part I.A 2.g.

Lane B-127 (Reybold, DE to Baltimore, MD): The challenged rate in Lane B-127 is the NS tariff from Reybold, DE, to an interchange with CSXT in Baltimore for delivery to DuPont's three customers in Baltimore [35] NS has proposed both a lower-priced direct truck and truck-to-rail transload alternative. NS Reply II-B-116. Neither alternative is feasible due to the Reybold infrastructure constraints previously discussed.

NS ignores a multitude of other factors that also render transloading infeasible First, the transload alternative posited by NS is a truck-to-rail transload that is not done by DuPont or any other sulfuric acid producer, except when there is absolutely no other alternative. Second, the transload alternative ignores the fact that DuPont's customers {{[redacted]

[redacted]}}

[35] {[redacted]}

[redacted]}}. Dup. Op. Narr. II-B-18. Third, the transload alternative violates DMIR by avoiding the interchange in Baltimore, and instead delivering the sulfuric acid to CSXT in Philadelphia See supra Part I.A.2.g.

Lane B-128 (Reybold, DE to Blaire, NE): The challenged rate for Lane B-128 is NS's tariff from Reybold to Chicago for interchange to UP and delivery to Cargill in Blair, NE[36] NS does not contend that direct truck is an alternative to rail for this lane, presumably because DuPont's evidence establishes that a direct truck alternative would be nearly {{[redacted]}} higher See Dup Op Ex II-B-1 Instead, NS alleges that a {{[redacted]}} lower truck-to-rail transload rate provides effective competition NS Reply II-B-117 The transload alternative posited by NS, however, is a truck-to-rail transload that is not done by DuPont or any other sulfuric acid producer, except when there is absolutely no other alternative NS also does not substantively respond to the previously discussed infrastructure constraints at Reybold that prevent DuPont from loading more trucks. Likewise, NS ignores that DuPont's customers in this case lane {{[redacted]}}. Dup. Op. Narr. II-B-18.

Lane B-129 (Reybold, DE to Brewton, AL): The challenged rate for Lane B-129 is NS's tariff rate for sulfuric acid from Reybold to Birmingham, AL, for interchange to CSXT for delivery to DuPont's customer, Georgia Pacific, at Brewton, AL. NS posits both a direct truck and a truck-to-rail transload alternative. Both options, however, are not feasible due to the previously discussed infrastructure constraints at Reybold that prevent DuPont from loading more trucks.

[36] {[redacted]}

NS alleges that the direct truck rate is {{[redacted]}} the cost of rail. NS Reply II-B-117. Although this is below NS's 20% threshold for effective competition, it is above DuPont's 10% threshold. Furthermore, at 994 miles, trucking clearly is a much higher cost alternative, because it requires more equipment, personnel, and fuel to transport the same volume as rail transportation This distance is well beyond any range that trucks have been considered to be competitive with rail. See Dup. Op. Narr. I-28 n.28.

NS alleges that the truck-to-rail transload rate is {{[redacted]}} below the cost of rail NS Reply Ex. II-B-3. But, a truck-to-rail transload is not done by DuPont or any other sulfuric acid producer, except when there is absolutely no other alternative. This transload alternative also violates DMIR by avoiding the interchange in Birmingham, and instead delivering the sulfuric acid to CSXT at Philadelphia. See supra Part I.A 2.g.

Lane B-130 (Reybold, DE to Castle Hayne, NC): The challenged rate for Lane B-130 is NS's tariff rate for sulfuric acid from Reybold to Charlotte, NC, for interchange to CSXT for delivery to DuPont's customer, Elementis Chromium, at Castle Hayne, NC. NS posits both a direct truck and a truck-to-rail transload alternative. NS Reply II-B-118. Both options, however, are not feasible due to the previously discussed infrastructure constraints at Reybold that prevent DuPont from loading more trucks The transload alternative is a truck-to-rail transload that is not done by DuPont or any other sulfuric acid producer, except when there is absolutely no other alternative. The transload alternative also violates DMIR by avoiding the interchange in Charlotte, and instead delivering the sulfuric acid to CSXT at Philadelphia. See supra Part I A.2.g

Lane B-131 (Reybold, DE to Clifton, AZ): The challenged rate for Lane B-131 is NS's tariff rate for sulfuric acid from Reybold to Kansas City, MO, for interchange to UP for delivery

to DuPont's customer, Freeport-McMoran Cooper & Gold, at Clifton, AZ. While admitting that this 2300-mile route is not subject to competition from direct truck transportation, NS claims that this lane is ideal for transloading [37] NS Reply II-B-118. The transload alternative posited by NS, however, is a truck-to-rail transload that is not done by DuPont or any other sulfuric acid producer, except when there is absolutely no other alternative. This alternative also violates DMIR by delivering the sulfuric acid to CSXT at Philadelphia and interchanging with UP at East St. Louis instead of Kansas City. See supra Part I.A.2.g. Furthermore, NS substantively ignores the previously discussed infrastructure limitations at Reybold that prevent DuPont from loading more trucks

Lane B-132 (Reybold, DE to Corson, SD): The challenged rate for Lane B-132 is NS's tariff rate for sulfuric acid from Reybold to Chicago, IL, for interchange to BNSF for delivery to DuPont's customer, Harms Oil, at Carson, SD.[38] NS does not attempt to present a direct truck alternative for this long distance movement. However, NS posits a truck-to-rail transload[39] alternative with a {{ }} lower rate. But, a truck-to-rail transload is not done by DuPont or any other sulfuric acid producer, except when there is absolutely no other alternative. Again, NS's transload alternative substantively ignores the previously discussed infrastructure limitations at Reybold that prevent additional truck loading. NS also does not address the issue that this customer {{ }}. Dup. Op. Narr. II-B-18. Finally, NS does not dispute that this customer is a distributor that requires railcars for storage.

[37] NS misstates this as a rail-truck transload when the theoretical movement would actually be a truck-rail transload NS Reply II-B-118

[38] NS incorrectly states in the text that CSXT would interchange with UP at Chicago, but the interchange must be with BNSF for delivery to Carson, SD NS Reply Ex II-B-3 correctly refers to BNSF

[39] NS misstates this as a rail-truck alternative instead of a truck-rail transload NS Reply II-B-119

Lane B-134 (Reybold, DE to Ferguson, MS): This challenged rate for Lane B-134 is NS's sulfuric acid tariff for movements from Reybold to Memphis, TN, where traffic is interchanged with CN for delivery to Georgia Pacific in Ferguson, MS. NS posits both a direct truck and a truck-to-rail transload alternative. NS Reply II-B-118. Both options, however, are not feasible due to the previously discussed infrastructure constraints at Reybold that prevent DuPont from loading more trucks.

The NS direct truck alternative has a {{[redacted]}} rate than rail for a 1130-mile movement. NS Reply II-B-119. It is absurd to even think that trucks could compete effectively at this distance, which is beyond the range that trucks historically have been considered to be competitive with rail. See Dup Op. Narr I-28 n 28 Truck transportation clearly is a higher cost service at such long distances, because it requires more equipment, personnel and fuel to transport the same volume as rail transportation Although NS contends that DuPont routinely trucks sulfuric acid over comparable distances, NS has a very liberal definition of "routine." NS Reply II-B-119 As DuPont previously addressed in the Sulfuric Acid "Direct Truck" discussion above. NS misconstrues and misrepresents the truck data by cherry-picking a few readily distinguishable examples and describing them as "routine."

Furthermore, this lane is a striking example of NS pricing up to less efficient, higher cost alternatives. The direct truck and rail rates {{[redacted]}} only because NS already has exercised its market dominance NS increased its rate by {[redacted]} in just 2 years from 2009-11, contrasted against just a {{[redacted]}} increase by the connecting carrier over the same time period. Dup. Op. Ex. II-B-3 Although NS claims that this dramatic rate increase was "{[redacted]}." that cannot explain the full magnitude

of this rate increase.[40] NS alleges that DuPont's legacy contract that expired in 2009 {[redacted]} [41] This translates to a 46.8% increase in the contract rates over that time.[42] But during that same time NS's variable costs for transporting sulfuric acid increased by 54 3%, which would explain only a 5.1% post-contract rate increase.[43]

The NS truck-to-rail transload alternative rate would be {{[redacted]}} lower than the rail rate NS Reply Exhibit II-B-3. But, this is a truck-to-rail transload that is not done by DuPont or any other sulfuric acid producer, except when there is absolutely no other alternative. This alternative also violates DMIR by delivering the sulfuric acid to CSXT in Philadelphia and interchanging with CN at Effingham instead of Memphis. See supra Part I.A 2.g. Furthermore, this option again has NS substantively ignoring the significant infrastructure limitations at Reybold for truck loading at the production plant as discussed above.

Lane B-135 (Reybold, DE to Hastings, NE): The challenged rate for Lane B-135 is NS's tariff rate for sulfuric acid from Reybold to Chicago, IL, for interchange to BNSF for delivery to DuPont's customer, Equalizer Midwest, at Hastings, NE NS does not attempt to present a direct truck alternative for this long distance movement. Instead, NS proposes a truck-to-rail transload alternative that is {{[redacted]}} less than the rail rate. NS Reply II-B-120 But, this is a truck-to-rail transload that is not done by DuPont or any other sulfuric acid producer, except when there is absolutely no other alternative. This alternative once again substantively ignores the previously discussed infrastructure limitations at Reybold for truck loading. NS also does not address the fact that this customer purchases {{[redacted]}}

[40] NS Reply II-B-92

[41] Id. at II-B-92 to -93.

[42] Dup Reb. Ex II-B-1, at 1.

[43] Dup Reb Ex II-B-1, Attachment 1, columns (8), (9)

[redacted]}}. Dup Op. Narr. II-B-18 NS also does not dispute that this customer is a distributor that requires railcars for storage.

Lane B-136 (Reybold, DE to Indianapolis, IN): The challenged rate for Lane B-136 is NS's tariff rate for sulfuric acid from Reybold to Cincinnati, OH, for interchange with CSXT for delivery to DuPont's customer, Univar, at Indianapolis. NS posits both a direct truck and transload alternative. NS Reply II-B-120. Both options, however, are not feasible due to the previously discussed infrastructure constraints at Reybold that prevent DuPont from loading more trucks.

The direct truck alternative is {{[redacted]}} less than rail for a 650-mile highway route, which is clearly beyond the range within which trucks historically have been deemed competitive. See Dup Op Narr I-28 n.28. Truck transportation clearly is a higher cost service at such long distances, because it requires more equipment, personnel and fuel to transport the same volume as rail transportation.

The truck-to-rail transload alternative is {{[redacted]}} less than the rail rate. NS Reply Ex. II-B-3. But, this is a truck-to-rail transload that is not done by DuPont or any other sulfuric acid producer, except when there is absolutely no other alternative NS also does not address the issue that this customer purchases {{[redacted]}}. Dup. Op Narr II-B-18. This option also violates DMIR by avoiding the interchange in Cincinnati, and instead delivering the sulfuric acid by truck to CSXT at Philadelphia. See supra Part I.A.2.g.

Lane B-137 (Reybold, DE to Omaha, NE): The challenged rate for Lane B-137 is NS's tariff rate for sulfuric acid from Reybold to Chicago, IL, for interchange with UP for delivery to

DuPont's customer, Univar, at Omaha. NS claims that DuPont could use a truck-to-rail transload for {{[redacted]}} less than the rail rate. NS Reply II-B-121. Again, NS does not substantively address the previously discussed infrastructure constraints at Reybold that prevent DuPont from loading more trucks. The transload alternative is a truck-to-rail transload that is not done by DuPont or any other sulfuric acid producer, except when there is absolutely no other alternative. NS also does not address the issue that this customer purchases {{[redacted]}} Dup. Op. Narr. II-B-18.

Lane B-138 (Reybold, DE to Orange, TX). The challenged rate for Lane B-138 is NS's tariff rate for sulfuric acid from Reybold to E. St. Louis, IL, for interchange with BNSF for delivery to DuPont at Orange, TX. NS proposes a truck-to-rail transload alternative for {{[redacted]}} less than the rail rate. NS Reply Ex II-B-3. But, this is a truck-to-rail transload that is not done by DuPont or any other sulfuric acid producer, except when there is absolutely no other alternative. This alternative once again substantively ignores the previously discussed infrastructure constraints at Reybold that prevent DuPont from loading more trucks. This alternative also violates DMIR by delivering the sulfuric acid by truck to CSXT at Philadelphia for interchange with BNSF at New Orleans instead of E. St. Louis.[44] See supra Part I.A.2.g.

Lane B-139 (Reybold, DE Phoenix, AZ). The challenged rate for Lane B-139 is NS's tariff rate for sulfuric acid from Reybold to Streator, IL, for interchange with BNSF for delivery to DuPont's customer, Basic Chemical, at Phoenix NS proposes a truck-to-rail transload alternative for {{[redacted]}} less than the rail rate. NS Reply II-B-122. But, this is a truck-to-rail transload that is not done by DuPont or any other sulfuric acid producer, except when there is

[44] Although the NS Reply II-B-121 claims that the transload interchange with BNSF would still be East St. Louis, NS Reply Ex II-B-3 confirms that the BNSF interchange would occur at New Orleans

absolutely no other alternative. This alternative once again substantively ignores the previously discussed infrastructure constraints at Reybold that prevent DuPont from loading more trucks This alternative also violates DMIR by avoiding the interchange with BNSF at Streator, and instead delivering the sulfuric acid by truck to CSXT at Philadelphia for interchange with BNSF at Chicago. See supra Part I.A.2.g. Finally, NS does not dispute that this customer is a distributor that requires railcars for storage

Lane B-140 (Reybold, DE to Sioux City, IA). The challenged rate for Lane B-140 is NS's tariff rate for sulfuric acid from Reybold to Chicago, IL, for interchange with BNSF for delivery to DuPont's customer, Basic Chemical, at Sioux City. NS proposes a truck-to-rail transload alternative for {{[redacted]}} less than the rail rate. NS Reply II-B-122. This alternative once again substantively ignores the previously discussed infrastructure constraints at Reybold that prevent DuPont from loading more trucks. The transload alternative also is a truck-to-rail transload that is not done by DuPont or any other sulfuric acid producer, except when there is absolutely no other alternative. Finally, NS does not dispute that this customer is a distributor that requires railcars for storage.

Lane B-141 (Reybold, DE to Toledo, OH): The challenged rate for Lane B-141 is NS's tariff rate for sulfuric acid from Reybold to Toledo, OH, for interchange with CSXT for delivery to DuPont's customer, Jones Hamilton, in Toledo NS posits both a direct truck and a truck-to-rail transload alternative. NS Reply II-B-122 to -123. Both options, however, are not feasible due to the previously discussed infrastructure constraints at Reybold that prevent DuPont from loading more trucks.

NS claims that the direct truck alternative rate is {{[redacted]}} less than the rail rate for a 528-mile highway route, which is beyond the range within which trucks historically have been

deemed competitive. See Dup. Op. Narr I-28 n.28. Truck transportation clearly is a higher cost service at such long distances, because it requires more equipment, personnel, and fuel to transport the same volume as rail transportation.

Alternatively, NS claims that the truck-to-rail transload rate is {{[redacted]}} less than the rail rate. But, this is a truck-to-rail transload that is not done by DuPont or any other sulfuric acid producer, except when there is absolutely no other alternative. This alternative violates DMIR by avoiding the interchange in Cincinnati, and instead delivering the sulfuric acid by truck to CSXT at Philadelphia See supra Part I.A 2.g.

Lane B-142 (Reybold, DE to Washington, WV): The challenged rate in Lane B-142 is the NS tariff for sulfuric acid moving from Reybold, DE, to an interchange with CSXT at Hagerstown, MD for final delivery to DuPont's facility in Washington, WV. NS posits both a direct truck and a truck-to-rail transload alternative, which are both {{[redacted]}} less than the rail rate. NS Reply II-B-123; NS Reply Exs. II-B-2, -3. Both of NS's proposed alternatives require that sulfuric acid be loaded into trucks at Reybold for this lane. As previously discussed, Reybold has truck loading infrastructure constraints such that NS's pricing power is not constrained by NS's theoretical alternatives. The transload alternative posited by NS also is a truck-to-rail transload that is not done by DuPont or any other sulfuric acid producer, except when there is absolutely no other alternative The transload alternative also violates DMIR by avoiding the interchange in Hagerstown and instead delivering the sulfuric acid to CSXT at Philadelphia.

2) Bellwood Origin Shipments.

Three issue movements, Lanes B-92, -93 and -94, originate at DuPont's Bellwood, VA facility on CSXT and are delivered by NS to the destinations NS claims that these three sulfuric

acid lanes have effective competition from direct truck alternatives, and that Lanes B-92 and -94 also have effective transload alternatives.

Lane B-92 (Bellwood, VA to Dallas, GA): The challenged rate in Lane B-92 is from the NS interchange at Petersburg, VA, to DuPont's customer, Basic Chemical, in Dallas, GA. NS first contends that a {{[redacted]}} lower direct truck rate for a 551-mile road haul constitutes effective competition. NS Reply II-B-124. But, the difference between the direct truck rate and rail rate for this lane masks the fact that NS has already exercised substantial market power by imposing a {[redacted]} rate increase over just two years from 2009-11. Dup. Op. Ex. II-B-3. Accordingly, NS's rate is already at supracompetitive levels after pricing up to a higher cost alternative. NS also makes no attempt to justify such a lower truck rate for a 551-mile movement. Truck transportation clearly is a higher cost service at such long distances, because it requires more equipment, personnel, and fuel to transport the same volume as rail transportation. This distance also is well beyond any range that trucks have been considered to be competitive with rail. See Dup. Op. Narr. I-28 n.28.

Alternatively, NS has proposed a transload option that would be {{[redacted]}} lower than the all-rail rate.[45] {{[redacted]}}. Dup. Op. Narr. II-B-18. In attacking DuPont's transloading evidence, NS refers to an "unsupported claim that the customer for Lane B-92 requires railcars for storage." NS Reply II-B-124 n.132. On page II-B-19 of its Opening Evidence, DuPont stated that, because this customer is a distributor that operates out of a bulk terminal, it would be absurd to transload at

[45] The NS transload rate calculation is inaccurate. NS claims to have presented a transload via Atlanta, but the rail rate it used is to Charlotte. This is evident from NS Reply Ex. II-B-3, which shows the same "Transload Option Rail Cost" for Lanes B-92 and B-94, even though the former is to Atlanta and the latter is to Charlotte. Correcting the rail rate to {{[redacted]}} produces a transload cost of {{[redacted]}}.

one bulk terminal in order to truck to the distributor at another bulk terminal. Distributors who operate out of bulk terminals purchase the sulfuric acid from DuPont, store it at the terminal in DuPont's rail car, and then resell it to their customers in truckload volumes.[46]

Lane B-93 (Bellwood, VA to Fort Mill, SC): The challenged rate in this lane is the NS tariff for its portion of a movement from an interchange with CSXT at Charlotte, NC, to DuPont's customer, Nation Ford, at Fort Mill, SC. This is the same customer and destination as Lanes A-24 and B-118, and the same challenged rate as in Lane B-118. While NS concedes market dominance in both lanes A-24 and B-118, it inexplicably has contested the issue for Lane B-93. NS contends that a {{ }} lower direct truck rate provides effective competition. NS Reply Ex. II-B-2.

Despite the fact that DuPont presented evidence that this customer's {{ }}.[47] NS proposes a direct truck alternative at a rate that is {{ }}. NS Reply II-B-124 to -125. NS's attempt to challenge market dominance in this lane appears to be based solely on the fact that this customer received {{ }} sulfuric acid from DuPont over five years ago. Id. at II-B-125. This limited truck traffic does not support NS's claim and instead is proof that trucks are only used to serve rail-served customers in very narrow circumstances, such as when the customer needs expedited service.

Moreover, NS's alleged competitive truck rate on Suttles Trucking does not exist and, therefore, is unsupported. NS Witness Gordon Heisler purports to have determined all truck

[46] NS's claim that this evidence is unsupported is not accurate. It is based upon the sworn testimony of DuPont witnesses who interact regularly with their customers and must understand their customer's needs as part of their job. Furthermore, this is no different from NS's SAC testimony regarding the dwell times at its customers' facilities due to customer demands. See NS Reply III-C-233.

[47] {{ }}

costs "based on actual rates available to DuPont today . "[48] NS Reply II-B-106 (underline added) The Suttles contract, however, expired by its terms on July 31, 2009, which is more than 3 years before NS submitted its evidence.[49] Furthermore, Dana Transport acquired Suttles Trucking, effective September 1, 2008.[50] At that time, DuPont and Dana agreed to merge the two carriers' rate schedules, and that the Dana mileage scale rates would replace those in the Suttles contract.[51] Because Mr Heisler used the Suttles mileage scale to determine his alternative truck rate, he in fact was using rates that expired on September 1, 2008, which is more than 4 years before NS submitted its reply evidence. Consequently, the NS alternative rate is not a valid current rate Accordingly, market dominance should be determined with reference to the {{ }} direct truck rate[52] that DuPont calculated as the lowest cost alternative in its Opening Evidence.

Lane B-94 (Bellwood, VA to Rockwell, NC): The challenged rate in Lane B-94 is from the NS interchange with CSXT at Petersburg, VA, to DuPont's customer, Alchem, Inc., in Rockwell, NC NS contends that a {{ }} lower direct truck rate constitutes effective competition. NS Reply II-B-125 However, NS does not claim in reply that any trucks have actually moved in this lane. In fact, direct truck does not provide effective competition because DuPont's witness testified that this customer requires rail cars for storage because it purchases

[48] It is unclear exactly what date NS equates to its undefined use of the term "today " However, in footnote 107 on page II-B-106, NS purports to have calculated fuel surcharges as of the same date used by DuPont in its Opening Evidence, which means that NS also should have calculated truck rates as of that same date in order to provide an apples-to-apples comparison However, NS represents that date to be May 11, 2012, although DuPont actually used July 11, 2011 for all of its truck rates. Dup. Op. WP "Direct Truck Costs," "Sources " worksheet. Indeed, DuPont could not have used May 11, 2012, since DuPont's Opening Evidence was filed on April 30, 2012

[49] Dup Reb WP "Suttles Contract," at 0059267, in the "Suttles" folder

[50] Dup Reb WP "Suttles Merger Email" in the "Suttles" folder; Dup Reb WP "Dana Transport Merger Notice pdf" in the "Suttles" folder.

[51] Dup Reb WP "Dana Transport Merger Notice.pdf" in the "Suttles" folder

[52] Dup. Op Ex. II-B-1

off-spec product that cannot be mixed with specification grade product in its storage tank. Dup. Op. Narr. II-B-19.

Alternatively, NS proposes a transload alternative that would cost {{[redacted]}} more than the rail rate. NS Reply II-B-125. But this alternative also is not feasible because of the customer's need to store the off-spec product in rail cars. Dup. Op Narr. II-B-124.

3) Bayway (Morses Mill) Origin Shipments.

Lane A-2 is the only issue movement that originates at DuPont's Morses Mill plant, located in Bayway, NJ.

Lane A-2 (Bayway, NJ to Waynesville, NC): The challenged rate on Lane A-2 is a single line rate to DuPont's customer, Giles Chemical Company,[53] from Bayway, NJ to Waynesville. NS NS contends that both a {{[redacted]}} lower direct truck rate, and a {{[redacted]}} lower transload rate provide effective competition. Neither option, however, provides effective competition for several reasons.

First, if there is a {{[redacted]}} rate for a 709-mile truck movement, that should be evidence enough that NS is pricing up to the level of a higher cost alternative NS ignores the absurdity of a {{[redacted]}} direct truck alternative for a distance that is beyond the range that trucks historically have been considered to be competitive with rail See Dup Op Narr. I-28 n.28. Rather, this is evidence that NS is pricing to match the rates of a higher cost alternative.

Furthermore, this truck rate differential is so narrow only after NS imposed back-to-back rate increases of {[redacted]} in each of the past two years for a cumulative increase of {[redacted]} Dup. Reb Ex. II-B-2.[54] Since 2007, NS's rate has increased by {[redacted]}. Clearly, NS

[53] {[redacted]}

[54] In preparing its Rebuttal Evidence, DuPont discovered an error in the Excel formula it used to calculate the change in the NS rate for the Exhibit A case lanes in Dup Op Ex. II-B-3. Instead of calculating the cumulative rate change from 2009-2011, the

is exercising its market power by dramatically increasing its rail rates without a loss of traffic. Although NS claims that this dramatic rate increase was "{[redacted]}," that cannot explain the full magnitude of this rate increase.[55] NS alleges that DuPont's legacy contract that expired in 2009 {[redacted]}[56] This translates to a 46 8% increase in the contract rates over that time.[57] But during that same time NS's variable costs for transporting sulfuric acid increased by 54.3%, which would justify only a 5.1% post-contract rate increase.[58]

Second, in proposing both the direct truck and transload options, NS does not address the customer need for rail delivery As stated in DuPont's Opening Evidence, the {{[redacted]}}[59] Therefore, NS's reply simply does not propose a realistic, feasible alternative.

4) Miami Fort Origin Shipments.

Lane B-101 is the only issue movement that originates at DuPont's Miami Fort plant, located in North Bend, OH. The destination is captive to NS.

Lane B-101 (Miami Fort, OH to Dallas, GA) : The challenged rate in Lane B-101 is the NS portion from the CSXT interchange at Cincinnati, OH to DuPont's customer, Basic Chemical, in Dallas, GA. NS contends that a direct truck premium of {{[redacted]}} for this movement of 435 miles constitutes effective competition. NS Reply II-B-127 However, the {{[redacted]}}

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formula calculated the cumulative change from 2007-2011. Although NS did not note this error in its Reply Evidence DuPont has corrected that error in Rebuttal Exhibit II-B-2

[55] NS Reply II-B-92.

[56] Id. at II-B-92 to -93

[57] Dup Reb Ex II-B-1, at 1

[58] Dup Reb Ex II-B-1 Attachment 1, columns (8) (9)

[59] {{[redacted]}}

[redacted] is a recent development that is attributable solely to a recent {[redacted]} rate increase by NS in 2011. Although NS claims that this dramatic rate increase was "{[redacted]}," that cannot explain the full magnitude of this rate increase. NS alleges that DuPont's legacy contract that expired in 2009 {[redacted]}. This translates to a 46.8% increase in the contract rates over that time.[60] But during that same time NS's variable costs for transporting sulfuric acid increased by 54.3%, which justifies only a 5.1% post-contract-rate increase.[61] This does not come close to explaining the magnitude of the NS rate increase.

[60] Dup. Reb. Ex. II-B-1, at 1

[61] Dup. Reb. Ex. II-B-1, Attachment 1, columns (8), (9)

b. Acid, Spent Sulfuric[62]

At pages II-B-26 to -29 of its Opening Evidence, DuPont challenged a single NS rate for transporting spent sulfuric acid ("Spent Acid") in Lane B-77, from McIntosh, AL to Burnside, LA. The Spent Acid is an inbound shipment to DuPont at the Burnside Plant, which is served by CN. The Spent Acid originates at BASF, which is captive to NS, and interchanges with CN at Mobile, AL. NS has contested its market dominance for this movement.

NS contends that a {{[redacted]}} lower direct truck rate constitutes effective competition for this movement. NS Reply II-B-186 to -187. This argument is seriously flawed both factually and logically.

First, NS has not calculated a correct truck rate. NS obtained the rate from a DuPont contract with {{[redacted]}}, even though NS itself did not identify that carrier as one of the motor carriers that DuPont historically has used for this commodity. Id. The rate scale for {{[redacted]}} applies only for transportation in unlined trailers, and spent acid must be transported in lined trailers.[63] Therefore, the direct truck rate calculated by DuPont is the best evidence of record. That rate also is lower than the rail rate, but by just {{[redacted]}}.

Second, lower truck rate reflects the fact that NS recently has exercised its market dominance by imposing a cumulative {[redacted]} rate increase over just two years, from 2009-11. Dup. Op. Ex. II-B-3. In contrast, the connecting carrier increased its rate by just {{[redacted]}} over that same time period. Id. It is not surprising that, after such a significant rate increase, direct trucking would be less expensive. Although NS claims that such a dramatic rate increase was "{[redacted]}," that cannot

[62] The evidence and testimony in this section is jointly sponsored by Mary Pileggi, Logistics Manager-NA Region, and Ted Edward Morris, Operations Business Leader-Sulfur Products.

[63] See NS Reply WP "0059118.xls," "Original Page 5" worksheet, in the "{{[redacted]}}" folder within "DuPont Trucking Contracts" (rate schedule). NS Reply WP "Trailer Type and Specifics Info." in the "DuPont IN1 Response on Truck Type" subfolder of the "Other Documents Produced by DuPont" folder (truck requirements).

explain the full magnitude of this rate increase.[64] NS alleges that DuPont's legacy contract that expired in 2009 {[redacted]}.[65] This translates to a 46.8% increase in the contract rates over that time.[66] But during that same time NS's variable costs for transporting spent sulfuric acid increased by 60.8%, which would justify only a 9.5% increase.[67] Thus, the expired legacy contract can only explain a small fraction of the NS rate increase.

Third, NS inappropriately disregards the high number of trucks that would be required to convert the rail volumes on this lane to trucks. At pages II-B-27 to -28 of its Opening Evidence, DuPont noted that its 2010 rail volume of {[redacted]} rail cars in this lane would have required {[redacted]} trucks. Although NS contends that there only would be {[redacted]} trucks, even that amount is too large.[68] Increasing trucks multiplies the handling, labor, and equipment needed to transport this hazardous material and requires much greater scheduling coordination than rail cars, because trucks must be scheduled for loading and unloading whereas rail cars can be loaded and unloaded at one's convenience. Dup. Op. Narr. II-B-27 to -28. The potential for accidental spills is greatest during loading and unloading, which is increased nearly four-fold for trucks. Even using the NS rail volume, this would require {[redacted]} truck loadings per day, which is a significant increase over zero trucks, on top of all the other traffic that moves through both the origin and destination plants. NS Reply II-B-187. DuPont cannot simply impose the extra time,

[64] NS Reply II-B-92.

[65] Id. at II-B-92 to -93.

[66] Dup. Reb. Ex. II-B-1, at 1.

[67] Dup. Reb. Ex. II-B-1, Attachment 1, columns (8), (9).

[68] NS contends that DuPont only had {[redacted]} rail cars, which would equal {[redacted]} trucks. NS Reply II-B-187. NS attempts to reduce the volume by contending that DuPont did not pay the freight on all the rail cars that moved over this lane. That is not correct. DuPont pays the freight for all spent acid shipments. Regardless who pays the freight, these volumes are transported between the same locations and thus are part of the same movement.

risk, labor, and costs upon BASF, even if DuPont was willing to incur all of those itself for a lower truck rate.

This is not like the situation in FMC, 4 S.T B. at 714, to which NS has drawn a comparison. NS Reply II-B-187 n.191. In FMC, the commodity was coke moving in open top hoppers, whereas spent acid is a hazardous material that moves in specialized tanks; the plaintiff owned and operated both the origin and destination facilities, whereas DuPont operates only the destination for this lane, and the origin was a plant for which the principal activity was the production and transport of coke, whereas the Lane B-77 origin is a third-party facility for which the return of spent sulfuric acid is an ancillary activity to the main business, which includes the production, tender, and receipt of many other products by truck and rail apart from just this one transportation movement

c. Acid, Fuming Sulfuric (Oleum)[69]

In its Opening Evidence at II-B-30 to -35, DuPont challenged the NS rates for transportation of fuming sulfuric acid, also known as "oleum," in two lanes: Lane B-103 from Miami Fort, OH to McIntosh, AL; and Lane B-106 from Miami Fort, OH to Pepper, VA. NS has contested its market dominance over both movements. NS Reply II-B-175 to -177 Because the oleum in Lane B-103 is a TIH commodity, whereas the oleum in Lane B-106 is not, DuPont addresses each lane separately. *This starkly contrasts with the NS Reply Evidence, which* merely notes the difference in a footnote[70] and then proceeds to present evidence without any further distinction.

NS also incorrectly states that DuPont can truck oleum in the same MC312 trailers used for non-fuming sulfuric acid. Id. at II-B-175. MC312 is a generic classification As DuPont clearly stated at page II-B-31 of its Opening Evidence, oleum trailers also must comply with DOT HM-181 regulations, be equipped with a glycol heating system, and be insulated to maintain temperatures above the product's freezing point. Consequently, DuPont cannot use just any MC312 trailer to transport oleum. All of this information was supported by a document produced to NS in discovery.[71]

Lane B-103 (Miami Fort, OH to McIntosh, AL): This is a TIH variety of oleum.[72] The challenged NS rate is a gateway rate from the interchange with CSXT at Chattanooga, TN to McIntosh NS contends that a {{[redacted]}} lower direct truck rate for this 669-mile movement of a

[69] The evidence and testimony in this section is jointly sponsored by Mary Pileggi, Logistics Manager-NA Region, and Ted Edward Morris, Operations Business Leader--Sulfur Products

[70] NS Reply II-B-175 n 175

[71] Dup Op II-B-31 n 43

[72] *As DuPont has explained, fuming sulfuric acid consists of sulfur trioxide (which is a TIH) dissolved in sulfuric acid and that a* sulfur trioxide content of 30% or higher renders fuming sulfuric acid a TIH Dup Op Narr II-B-30 The blend of fuming sulfuric acid in Lane B-103 has a 65% sulfur trioxide concentration Id at II-B-32

TIH commodity constitutes effective competition [73] NS Reply II-B-176. There are several problems with NS's reply evidence.

First and foremost, NS completely ignores DuPont's evidence that its customer, BASF, cannot unload truck shipments of this TIH commodity at McIntosh. Dup. Op Narr. II-B-32. This is confirmed by the fact that {{[redacted]}} and BASF has never received a single oleum truck shipment at McIntosh Id. Instead, NS makes an incredible leap in logic that, because BASF receives truck shipments of sulfuric acid (which is a different chemical with different properties, including the fact that it is not a TIH) at McIntosh, it also must have the ability to unload truck shipments of oleum.[74] NS Reply II-B-176 In addition, even if the same truck unloading rack could be used for both sulfuric acid and oleum, BASF uses sulfuric acid and oleum in two different chemical processes at two different locations within the McIntosh plant that are not connected by pipe.[75] The fact is that BASF cannot receive oleum by truck, and therefore, the NS evidence of a lower direct truck rate for Lane B-103 is moot

Second, NS disregards the absurdity of a lower truck rate on a 669-mile movement Truck transportation clearly is a higher-cost service at such long distances, because it requires more equipment, personnel, and fuel to transport the same volume as rail transportation. This distance also is well beyond any range that trucks have ever been considered to be competitive with rail See Dup. Op. Narr. I-28 n.28.

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[73] DuPont calculated the direct truck rate to be {{[redacted]}} lower for the exact same carrier Dup. Op Ex. II-B-1 The difference is attributable solely to the fact that DuPont used a truck to rail ratio of 4 5, whereas NS used 4 4 DuPont's ratio, however, was conservatively low, because DuPont still must pay for a full truck even if only half loaded Therefore, a more accurate ratio would be 5 0

[74] Because oleum is fuming sulfuric acid, NS seems to equate it with regular sulfuric acid and assumes that there is no difference in their transportation characteristics. This is a simplistic and grossly incorrect assumption See note 72, above

[75] Since DuPont filed its complaint, BASF has moved this production process to India The cost of materials, including freight, was a factor in this decision.

Third. NS ignores DuPont's equipment limitations for oleum. At page II-B-31 of its Opening Evidence. DuPont explained. based upon documents that it produced in discovery, that it uses dedicated. privately-owned DOT-312 trailers that are insulated and equipped with a glycol heating system. DuPont also explained that it has {{[redacted]}} of these specialized trailers and that truck drivers must have special training. Significantly. DuPont presented documented evidence that. due to equipment and driver limitations. it requires customers to pre-schedule truck deliveries Id Because these capacity constraints exist at current truck volumes. it is unrealistic to convert rail shipments to additional trucks. or to assume that rail-served customers would accept the inconvenience of these capacity constraints. NS has not even attempted to address any of these facts

Finally, NS fails to consider the TIH nature of the oleum when it suggests that DuPont should truck an average of {[redacted]} rail cars annually. which equates to {[redacted]} trucks, over 669 miles. NS attempts to justify this suggestion because DuPont shipped {{[redacted]}} trucks of oleum over 1300 miles. from {{[redacted]}}. over a 5-year period. NS Reply II-B-176. But {{[redacted]}} trucks over 5 years averages to just {{[redacted]}} trucks annually. which is just 18% of the truck volume that NS advocates DuPont ship annually over Lane B-103. Furthermore. those were export shipments to a non-rail location. which is consistent with DuPont's argument that trucks are primarily used to serve non-rail customers. or to serve rail customers over short distances. with small volumes. or with expedited shipments

Lane B-106 (Miami Fort, OH to Pepper, VA): This is a non-TIH variety of oleum The challenged NS rate is a gateway rate from the interchange with CSXT at Cincinnati. OH to Pepper NS contends that a {{[redacted]}} lower direct truck rate for this 372-mile movement

constitutes effective competition. NS Reply II-B-177. There are significant flaws with the NS evidence both factually and logically.

First, NS has used an inaccurate truck rate NS has used the mileage scale rate in DuPont's contract with {{[redacted]}}. NS Reply Ex. II-B-2. But DuPont does not use, and never has used, {{[redacted]}} to truck oleum.[76] All motor carriers that transport oleum are specially trained by DuPont, and {{[redacted]}} has not received such training Furthermore, NS has not calculated a correct rate from the {{[redacted]}} contract[77] The only evidence of an alternative transportation rate is the {{[redacted]}} lower direct truck rate provided by DuPont in its Opening Evidence Dup Op Narr II-B-33

Second, NS ignores the fact that this slightly lower truck rate is the result of very recent and sizeable NS rate increases In 2010, NS increased its rate by {[redacted]}, and in 2011, it increased the rate by an additional {[redacted]} for a cumulative two year rate increase of {[redacted]}. Dup. Op. Narr. II-B-33; Dup. Op. Ex. II-B-3. In contrast, over that same time frame, the connecting carrier on this route, CSXT, raised its rates by {{[redacted]}}, respectively, which illustrates the degree to which NS has exerted its market power.[78] After NS has increased its rate over such a short period and by such substantial amounts, it is not surprising that NS's ability to raise its rate any further might appear to be constrained. But, it is fundamentally illogical for market dominance to exist only until a railroad actually exercises that dominance. Therefore, NS's claim that its alternative truck rate is an effective competitive constraint simply is not credible.

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[76] See NS Reply WP "DuPont Oleum Truck Shipments xls," which shows that DuPont used only three motor carriers for Oleum truck shipments from 2006-10 {{[redacted]}}

[77] See NS Reply WP "Direct Truck Analysis xls " The rail equivalent rate calculated in Column T is not formula-based, and thus has no link to any of the inputs in the other cells Applying the math to NS's own inputs, the rail equivalent rate is {{[redacted]}} As noted in the text above, however, this carrier is not qualified to transport oleum

[78] This discrepancy is even more striking when one considers the fact that {{[redacted]}} See Dup Op Ex II-B-3

Although NS claims that this dramatic rate increase was "{ }," that does not explain the full magnitude of this rate increase.[79] NS alleges that DuPont's legacy contract that expired in 2009 { } }.[80] This translates to a 46.8% increase in the contract rates over that time.[81] But during that same time NS's variable costs for transporting non-TIH oleum increased by 52.6%, which would justify only a 4.0% post-contract rate increase.[82] This does not come close to justifying a { } rate increase.

Finally, NS ignores DuPont's equipment limitations for oleum, which are the same as those described in the discussion of Lane B-103 above.

[79] NS Reply II-B-92.

[80] Id. at II-B-92 to -93

[81] Dup Reb Ex II-B-1, at 1.

[82] Dup Reb Ex II-B-1, Attachment 1, columns (8), (9)

d. Acid, Muriatic[83]

In its Opening Evidence, DuPont challenged 2 NS rates for transporting muriatic acid from DuPont's Louisville facility to 2 destinations. NS, in its Reply Evidence, has contested market dominance over both rates, which involve the following single-line movements:

Table II-B-2
Contested Muriatic Acid Lanes

Lane #	Origin	Destination	Customer
A-18	Louisville, KY	Decatur, IL	ADM Corp ; Tate & Lyle
A-19	Louisville, KY	Lafayette, IN	Tate & Lyle

NS asserts that trucks are effective competition because DuPont can feasibly shift a material portion of the rail volume on these lanes to truck.[84] But NS understates the total volume of rail shipments on these lanes Specifically, NS ignores all rail shipments for which {{ }} paid the freight.[85] As DuPont explains on page II-B-36 of its Opening Narrative, DuPont sells its muriatic acid to {{ }}, who resells it to end users DuPont pays the freight for these shipments, unless {{ }} [86] Because DuPont could be responsible for the entire volume of rail shipments on these lanes, NS improperly excludes the volumes for which {{ }} paid the freight.

Also, excluding rail volumes where a third party pays the freight is illogical Indeed, it would mean that NS could have market dominance over only a portion of the shipments on a single-line route, even though all of the shipments on the route are subject to the same rate. In other words, the reasonableness of a rate could turn on who pays the freight.

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[83] The evidence and testimony in this section is jointly sponsored by Mary Pileggi, Logistics Manager-NA Region, and Brad Kulesza, Operation Business Leader for Freon 22.

[84] NS Reply II-B-174

[85] Id.

[86] Dup. Op. Narr II-B-36

Lane A-18 (Louisville to Decatur, IL). The challenged rate on Lane A-18 is NS's single-line rate from Louisville to Decatur, IL. NS claims that {{[redacted]}}[87] direct truck rate constitutes effective intermodal competition.[88]

First, NS has not calculated the truck rate correctly. DuPont calculated the direct truck rate for this lane in its Opening Evidence using the same motor carrier as NS, but NS uses a lower truck rate.[89] DuPont's direct truck rate is {{[redacted]}} lower than the NS rail rate. The difference between the DuPont and NS direct truck rates is attributable to the fact that NS did not apply the fuel surcharge to the {{[redacted]}} base fee, but instead only applied it to the mileage scale charges. NS also used a 3.9 truck to rail ratio instead of the 4.0 ratio used by DuPont. Accordingly, market dominance should be determined with reference to the {{[redacted]}} direct truck rate[90] that DuPont calculated as the lowest cost alternative in its Opening Evidence.

Second, NS completely ignores the fact that trucking was far more expensive than rail transportation over Lane A-18 before NS imposed significant rate increases in 2010 and 2011. NS increased its rate by {[redacted]} in 2010, and by {[redacted]} in 2011, which amounts to a cumulative two-year rate increase of {[redacted]}.[91] Under NS's logic, it would have possessed market dominance prior to 2010 because the direct truck rate exceeded the single-line NS rate by more than 20% and, thus, was not an effective competitive constraint upon rail rates.[92] But, now that NS has exercised its market power by aggressively increasing its rate {{[redacted]}} the truck rate, NS claims it no longer possesses market dominance. After NS has increased its rate over

[87] NS Reply Ex. II-B-2.

[88] NS Reply II-B-162 to -163

[89] Dup Op WP "Direct Truck Costs.xls."

[90] Dup Op Ex. II-B-1.

[91] Dup Reb Ex. II-B-2

[92] NS Reply II-B-107

such a short period and by such substantial amounts, it is not surprising that NS's ability to raise its rate any further might appear to be constrained But, it is fundamentally illogical for market dominance to exist only until a railroad actually exercises that dominance. Therefore, NS's claim that its alternative truck rate is an effective competitive constraint simply is not credible.

Although NS claims that this dramatic rate increase was "{ }," that does not explain this rate increase [93] NS alleges that DuPont's legacy contract that expired in 2009 { }.[94] This translates to a 46.8% increase in the contract rates over that time [95] But during that same time NS's variable costs for transporting muriatic acid increased by 54 2%, which would justify only a 5 1% post-contract rate increase [96] Thus, the expiration of the legacy contract does not explain NS's rate increases on this lane.

Lane A-19 (Louisville to Lafayette, IN). The challenged rate on Lane A-18 is NS's single-line rate from Louisville to Lafayette, IN NS claims that {{ }}[97] direct truck rate constitutes effective intermodal competition.[98]

NS completely ignores that trucking was far more expensive than rail transportation over Lane A-19 before NS imposed significant rate increases in 2010 and 2011 NS increased its rate by { } in 2010, and by { } in 2011, which amounts to a cumulative two-year rate increase

[93] NS Reply II-B-92.

[94] Id, at II-B-92 to -93

[95] Dup Reb. Ex. II-B-1, at 1

[96] Dup Reb. Ex. II-B-1, Attachment 1, columns (8), (9)

[97] NS Reply Ex II-B-2.

[98] NS Reply II-B-162 to -163. NS has incorrectly calculated the direct truck rate DuPont calculated the direct truck rate for this lane in its Opening Evidence using its contract with Sentinel Transportation whereas NS used a contract with HazMat Environmental Group. The HazMat rate that NS uses is {{ }} the challenged rate than the Sentinel rate because NS ignored the deadhead charge of {{ }} NS Reply WP "005984-2 xls," "13th Revised Page 9" worksheet, in the "Hazmat Environmental" subfolder of the "DuPont Trucking Contracts" folder. Adding this charge causes the HazMat rate that NS calculated to be just {{ }} than the total cost of rail

of {[redacted]}.[99] After NS has increased its rate over such a short period and by such substantial amounts to {{[redacted]}} the rate of an alternative mode, it is not surprising that NS's ability to raise its rate any further might appear to be constrained. The reality, however, is that NS has increased its rate to {{[redacted]}} that of a much higher-cost alternative

Although NS claims that this dramatic rate increase was "{[redacted]}," that does not explain this rate increase.[100] NS alleges that DuPont's legacy contract that expired in 2009 {[redacted]}.[101] This translates to a 46.8% increase in the contract rates over that time.[102] But during that same time NS's variable costs for transporting muriatic acid increased by 54.2%, which would justify only a 5.1% post-contract rate increase.[103] Thus, the expiration of the legacy contract does not explain NS's rate increases on this lane.

[99] Dup. Reb. Ex. II-B-2

[100] NS Reply II-B-92

[101] Id. at II-B-92 to -93

[102] Dup. Reb. Ex. II-B-1, at 1

[103] Dup. Reb. Ex. II-B-1, Attachment 1, columns (8), (9).

e. Aniline Oil[104]

In its Opening Evidence, DuPont challenged four NS rates for transporting aniline oil from Dowling, TX and Pascagoula, MS to two destinations. In its Reply Evidence, NS has contested its market dominance over all four issue movements, which are summarized in the Table below

Table II-B-3
Contested Aniline Oil Lanes

Lane #	Origin	Interchange	Destination	Customer
B-49	Dowling, TX	Meridian, MS	Fort Mill, SC	Nation Ford Chemical Co.
B-84	Pascagoula, MS	Mobile, AL	Fort Mill, SC	Nation Ford Chemical Co.
B-85	Pascagoula, MS	Mobile, AL	LeMoyne, AL	US Amines
B-115	Pascagoula, MS	Atlanta, GA	Fort Mill, SC	Nation Ford Chemical Co.

All of the issue movements are captive to NS at the destinations. Lanes B-84 and B-115 are alternative routes between the same points via different origin carriers to different interchange points with NS, and thus have different NS rates.

The entire NS Reply Evidence, at pages II-B-164 to -166, contends that direct truck alternatives provide effective competition for each of the issue movements because DuPont can and has trucked aniline oil in the past and that direct truck rates for the issue movements are lower than or no more than 20% above the through rail rate. NS, however, has failed to consider other relevant market dominance factors, such as the amount of aniline oil that is transported by trucks where rail alternatives are available and under transportation circumstances similar to rail. See Market Dominance Determinations, at 133.

First, NS attempts to make much of the fact that DuPont has shipped {{[redacted]}} trucks of aniline oil over five years from 2006-2010.[105] NS Reply II-B-164. But, of these truck

[104] The evidence and testimony in this section is jointly sponsored by Mary Pileggi, Logistics Manager-NA Region, and Katie Snyder, Business Manager Aniline

shipments, {{[redacted]}}, or 73%, were delivered to locations without rail service [106] Thus, only a quarter of all truck shipments were to rail-served destinations

Second, all of the truck shipments to rail-served destinations were either over short distances, were small volumes, or were due to extenuating circumstances that required expedited transportation:[107]

- {{[redacted]}} trucks from McIntosh, AL to Pascagoula, MS, and from Beaumont, TX to Pasadena, TX, traveled only 80 miles, which is consistent with trucks being more competitive for short hauls
- Only {{[redacted]}} truck moved 1502 miles from Beaumont, TX to Niagara Falls, NY, over this 5 year period, which is consistent with a small volume or an expedited shipment.
- Only {{[redacted]}} trucks moved 1200 miles from Pascagoula, MS to Niagara Falls, NY, over this 5 year period, which is consistent with small volumes or expedited shipments
- {{[redacted]}} trucks moved 816 miles from Pascagoula, MS to Huntington, WV during this 5 year period. However, {{[redacted]}} of those truck shipments occurred in 2009 when the customer temporarily could not receive rail cars. The remaining truck shipments were small volume or expedited shipments, including {{[redacted]}} trucks in 2008 associated with Hurricanes Gustav and Ike.
- {{[redacted]}} trucks moved 778 miles from Neuse, NC to Pascagoula, MS during this 5 year period These movements, however, were return shipments of off-spec aniline oil for reprocessing by DuPont Sometimes this customer's production process generates more off-spec aniline oil than DuPont has available empty rail cars. Because the customer has no place to store the off-spec aniline oil except in rail cars, its production process would shut down unless it could load trucks instead Thus, these truck shipments are instances in which an empty rail car was not available.

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[105] The correct number is {{[redacted]}} trucks Dup Reb WP "DuPont Aniline Oil Truck Shipment-Rebuttal xlsx," "Shipments By Case Lane and Year" worksheet DuPont attributes this discrepancy to NS's failure to account for duplicate invoice records and the different types of billing records in the data. To obtain an accurate count of truck shipments using DuPont's truck bill records, it is necessary to filter the records to show only linehaul bill types (each shipment is the subject of only one linehaul bill, but may be the subject of multiple balance due bills or other bills) and remove linehaul records containing a duplicate document number (a document number is associated with only one shipment) See Dup Op WP "Aniline Truck Shipments.xls," "Notes" worksheet, in the "Aniline Oil" folder (explaining adjustments that DuPont made to remove inaccurate and duplicate records) A corrected version of the NS reply workpaper is included as DuPont Rebuttal Workpaper "DuPont Aniline Oil Truck Shipments-Rebuttal.xlsx," and contains an "Adjustments" worksheet that identifies all adjustments that DuPont made to the data in the workpaper

[106] Dup Reb WP "DuPont Aniline Oil Truck Shipment-Rebuttal xlsx," "Rail Capability" worksheet

[107] The following truck counts are from the Dup. Reb. WP "DuPont Aniline Oil Truck Shipment-Rebuttal xlsx," "Shipments to Rail Destinations" worksheet

Furthermore, {{[redacted]}} of those truck shipments occurred in the fourth quarter of 2008 after Hurricanes Gustav and Ike hit the Gulf Coast only 2 weeks apart, which disrupted rail service at Pascagoula.

- In its Opening Evidence at page II-B-40, DuPont presented evidence that all of the truck shipments to Fort Mill, SC in Lanes B-84 and -115 were emergency shipments that required expedited transportation

None of the aniline oil truck shipments to rail-served destinations, at a distance of more than 80 miles, constituted the primary transportation mode or occurred on a regular basis. This is consistent with DuPont's testimony that trucks are used to deliver aniline oil to rail-served destinations primarily for short hauls, small volumes, and expedited movements Dup. Op Narr. II-B-39

Third, NS makes no mention of DuPont's evidence that the customers for each of the issue movements require rail cars to store the aniline oil until it is consumed in their production process. See Dup Op Narr II-B-40, -42. That evidence consisted of testimony from DuPont witnesses who have direct knowledge of these customer needs. And the testimony is consistent with the average rail car hold times of each customer and the truck shipment records, which show {{[redacted]}} trucks in Lane B-85 and that the other three lanes only account for 4% of the total truck volume.[108]

Finally, in the discussion of the individual aniline oil issue movements below, DuPont points to sizeable NS rate increases up to 73% over a brief 2-year period, from 2009-11, as evidence of the exercise of NS market power. Although NS claims that these rate increases were "{[redacted]}," that cannot explain the full magnitude of these rate increases.[109] NS alleges that DuPont's legacy contract that expired in 2009 {[redacted]

[108] See Dup Reb WP "DuPont Aniline Oil Truck Shipment-Rebuttal.xlsx," "Shipments By Case Lane and Year" worksheet

[109] NS Reply II-B-92

[redacted].[110] This translates to a 46 8% increase in the contract rates over that time.[111] But during that same time NS's variable costs for transporting aniline oil increased by 53.3%, which would justify only a 4.5% post-contract rate increase.[112]

The remainder of this section responds to the NS Reply Evidence as to each of the four contested aniline oil lanes:

Lane B-49 (Dowling, TX to Fort Mill, SC): The destination is the same for Lanes B-49, -84 and -115 This is a gateway rate from Meridian, MS to Fort Mill. NS contends that an {{[redacted]}} direct truck rate for this 943-mile movement constitutes effective competition.[113] NS Reply II-B-168. This NS evidence and argument is both factually and logically flawed.

First, NS inappropriately used the Suttles Truck Leasing contract for the direct truck rate. NS Witness Gordon Heisler purports to have determined all truck costs "based on actual rates available to DuPont today . "[114] NS Reply II-B-106 (underline added). The Suttles contract, however, expired by its terms on July 31, 2009, which is more than 3 years before NS submitted its evidence.[115] Furthermore, Dana Transport acquired Suttles Trucking, effective September 1, 2008 [116] At that time, DuPont and Dana agreed to merge the two carriers' rate schedules, and

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[110] Id, at II-B-92 to -93

[111] Dup. Reb Ex II-B-1, at 1

[112] Dup Reb Ex II-B-1, Attachment 1, columns (8), (9).

[113] DuPont has calculated a {{[redacted]}} higher truck rate, which would place this lane above the 10% threshold used by DuPont, and just below the 20% threshold used by NS Dup Op Narr II-B-42 The difference is attributable to the use of different carrier contracts to develop truck rates. DuPont used {{[redacted]}} whereas NS used Suttles Truck Leasing

[114] It is unclear exactly what date NS equates to its undefined use of the term "today " However, in footnote 107 on page II-B-106, NS purports to have calculated fuel surcharges as of the same date used by DuPont in its Opening Evidence, which means that NS also should have calculated truck rates as of that same date in order to provide an apples-to-apples comparison However, NS represents that date to be May 11, 2012, although DuPont actually used July 11, 2011 for all of its truck rates. Dup. Op WP "Direct Truck Costs, " "Sources" worksheet. Indeed, DuPont could not have used May 11, 2012 since DuPont's Opening Evidence was filed on April 30, 2012.

[115] Dup Reb WP "Suttles Contract," at 0059267, in the "Suttles" folder

[116] Dup Reb WP "Suttles Merger Email" in the "Suttles" folder, Dup Reb WP " Dana Transport Merger Notice pdf" in the "Suttles" folder

that the Dana mileage scale rates would replace those in the Suttles contract [117] Because Mr Heisler used the Suttles mileage scale to determine his alternative truck rate, he in fact was using rates that expired on September 1, 2008, which is more than 4 years before NS submitted its reply evidence. Consequently, the NS alternative rate is not a valid current rate.

Second, NS ignores the fact that the rate differential has narrowed only due to very recent and sizeable NS rate increases. In 2010, NS increased its rate by {[redacted]}, and in 2011, it increased the rate by an additional {[redacted]} for a cumulative two year rate increase of {[redacted]} Dup. Op. Narr. II-B-42, Dup Op. Ex. II-B-3 In contrast, over that same time frame, the connecting carrier on this route, KCS, raised its rates by {{[redacted]}}, respectively, which illustrates the degree to which NS has exerted its market power After NS has increased its rate over such a short period and by such substantial amounts, it is not surprising that NS's ability to raise its rate any further might appear to be constrained But, it is fundamentally illogical for market dominance to exist only until a railroad actually exercises that dominance Therefore, NS's claim that its alternative truck rate is an effective competitive constraint simply is not credible.

Third, NS ignores the absurdity of a comparable truck rate on a 943-mile movement. As demonstrated in the preceding paragraph, the narrowing rate differential is attributable to recent NS rate increases, not those of the connecting carrier. Truck transportation clearly is a higher cost service at such long distances, because it requires more equipment, personnel, and fuel to transport the same volume as rail transportation This distance also is well beyond any range that trucks have ever been considered to be competitive with rail See Dup. Op. Narr 1-28 n.28. NS makes no attempt to address this absurdity.

[117] Dup Reb. WP "Dana Transport Merger Notice pdf" in the "Suttles" folder

Finally, NS disregards DuPont's evidence as to this customer's need for rail. Dup. Op Narr. II-B-40. {{[redacted]}}. This customer consumes over {{[redacted]}} of aniline oil annually, nearly all of which is delivered by rail This customer has never received more than {{[redacted]}} trucks in a single year, and DuPont has documented that those were emergency expedited shipments. Those truck shipments do not prove that the customer does not need rail cars for storage, because the customer will need to consume expedited shipments immediately, which is the reason why an expedited truck shipment is necessary in the first place

Lane B-84 (Pascagoula, MS to Fort Mill, SC): The destination is the same for Lanes B-49, -84 and -115. This lane also covers the same origin and destination as Lane B-115: the NS rates, however, are from different interchanges with different origin carriers This is a gateway rate from Mobile, AL to Fort Mill NS contends that a {{[redacted]}} lower direct truck rate for this 619-mile movement constitutes effective competition. NS Reply II-B-165 This NS evidence and argument is logically flawed.

First, NS ignores the fact that the lower truck rate is the product of very recent and sizeable NS rate increases. In 2010, NS increased its rate by {[redacted]}, and in 2011, it increased the rate by an additional {[redacted]} for a cumulative two year rate increase of {[redacted]} Dup Op. Narr. II-B-42; Dup Op Ex. II-B-3. In contrast, over that same time frame, the connecting carrier on this route raised its rates by {{[redacted]}}, respectively, which illustrates the degree to which NS has exerted its market power. After NS has increased its rate over such a short period and by such substantial amounts, it is not surprising that NS's ability to raise its rate any further might appear to be constrained. But, it is fundamentally illogical for market dominance to exist

only until a railroad actually exercises that dominance. Therefore, NS's claim that its alternative truck rate is an effective competitive constraint simply is not credible

Second, NS ignores the absurdity of a lower truck rate on a 619-mile movement As demonstrated in the preceding paragraph, this rate differential is attributable to recent NS rate increases, not those of the connecting carrier. Truck transportation clearly is a higher cost service at such long distances, because it requires more equipment, personnel, and fuel to transport the same volume as rail transportation. This distance also is well beyond any range that trucks have ever been considered to be competitive with rail. See Dup Op Narr. I-28 n 28

Finally, NS disregards DuPont's evidence as to this customer's need for rail Dup Op. Narr II-B-40. Because this is the same customer destination as Lane B-49, DuPont incorporates that discussion of the customer's needs by reference.

Lane B-85 (Pascagoula, MS to Lemoyne, AL): This is a gateway rate from Mobile to Lemoyne. NS contends that a {{[redacted]}} lower direct truck rate constitutes effective competition. NS Reply II-B-165 to -66. This NS evidence and argument is flawed for all the same reasons as Lane B-84.

Although this lane is only 57 miles and thus is susceptible to truck competition in theory, the reality is that this customer needs the rail cars for storage. At page II-B-40 of its Opening Evidence, DuPont explained that the customer purchases aniline oil for limited annual production campaigns that occur over the course of approximately one month. Because this customer does not consume aniline oil except during these brief campaigns, it does not maintain storage facilities. Thus, despite a lower truck rate and a short distance, DuPont has never shipped a single truck of aniline oil to this customer.

Lane B-115 (Pascagoula, MS to Fort Mill, SC): The destination is the same for Lanes B-49, -84 and -115. This lane also covers the same origin and destination as Lane B-84; the NS rates, however, are from different interchanges with different origin carriers. This is a gateway rate from Atlanta, GA to Fort Mill. NS contends that an {{[redacted]}} lower direct truck rate for this 619-mile movement constitutes effective competition. NS Reply II-B-166. This NS evidence and argument is flawed for all the same reasons as Lane B-84.

The only difference is the magnitude of the recent NS rate increases that have elevated the through rail rate to {{[redacted]}} the direct truck rate. In 2010, NS increased its rate by {[redacted]}, and in 2011, it increased the rate by an additional {[redacted]} for a cumulative two year rate increase of {[redacted]}. Dup. Op. Narr. II-B-42; Dup. Op. Ex. II-B-3. In contrast, over that same time frame, the connecting carrier on this route, CSXT, raised its rates by {{[redacted]}}, respectively, which illustrates the degree to which NS has exerted its market power. Indeed, because this lane has a 3-year Rule 11 rate history instead of just 2 years, the evidence shows that CSXT {{[redacted]}} in 2009, while the NS rate was {[redacted]}, which is evidence that NS increased its 2010 rate to capture a substantial portion {{[redacted]}}. After NS has increased its rate over such a short period and by such substantial amounts, it is not surprising that NS's ability to raise its rate any further might appear to be constrained. But, it is fundamentally illogical for market dominance to exist only until a railroad actually exercises that dominance. Therefore, NS's claim that its alternative truck rate is an effective competitive constraint simply is not credible.

f. Caustic, Potassium (Caustic Potash)[118]

In its Opening Evidence at pages II-B-51 to -56, DuPont challenged a single NS rate for transportation of potassium caustic to one destination Lane B-125, from Charleston, TN to Woodstock, TN is a Rule 11 gateway rate from Charleston to an interchange with CN at Memphis. NS, in its Reply Evidence at pages II-B-183 to -184, has contested market dominance over this movement NS contends that a {{[redacted]}} lower direct truck rate for this 377-mile movement constitutes effective competition. Although DuPont accepts the NS-calculated rate, it rejects the NS claim of effective competition

Prior to substantial NS rate increases in 2010 and 2011, trucking was far more expensive than rail transportation over Lane B-125. In 2010, NS increased its rate by {[redacted]}, and in 2011, it increased that rate by an additional {[redacted]} for a cumulative two-year rate increase of {[redacted]}. Dup Op. Narr. II-B-53, Dup. Op. Ex. II-B-3. In contrast, over that same time frame, the connecting carrier on this route, CN, raised its rates by {{[redacted]}}, respectively, which illustrates the degree to which NS has exerted its market power. Under NS's logic, it would have possessed market dominance prior to 2010 because the direct truck rate exceeded the through rail rate by more than 20%, and thus was not an effective competitive constraint upon rail rates. NS Reply II-B-107 However, now that NS has exercised its market power by aggressively increasing its rate {{[redacted]}} the truck rate, NS claims it no longer possesses market dominance After NS has increased its rate over such a short period and by such substantial amounts, it is not surprising that NS's ability to raise its rate any further might appear to be constrained. But, it is fundamentally illogical for market dominance to exist only until a

[118] The evidence and testimony in this section is jointly sponsored by Mary Pileggi, Logistics Manager-NA Region and Suneet Ranganath, Sourcing Manager, Ag & Nutrition

railroad actually exercises that dominance. Therefore, NS's claim that its alternative truck rate is an effective competitive constraint simply is not credible.

Although NS claims that this dramatic rate increase was "{[redacted]}," that does not explain the full magnitude of this rate increase.[119] NS alleges that DuPont's legacy contract that expired in 2009 {[redacted]}.[120] This translates to a 46.8% increase in the contract rates over that time.[121] But, during that same time, NS's variable costs for transporting potassium caustic increased by 54.5%, which would justify only a 5.3% post-contract rate increase.[122] Thus, the expiration of the legacy contract can explain only an extremely small fraction of the NS rate increase.

In addition, NS too casually dismisses DuPont's evidence that the volumes in Lane B-125 are too significant to truck efficiently. See Dup. Op. Narr. II-B-52 to -53. NS initially claims that {{[redacted]}} NS Reply II-B-183. But the NS traffic data provided to DuPont in discovery shows {[redacted]} rail cars moved over this lane in 2009 and {[redacted]} in 2010. Dup. Reb. WP "Comparison of NS Waybill Data and NS Reply Exhibit II-B-5." {{[redacted]}} Dup. Op. Narr. II-B-52 to -53.

Nevertheless, NS asserts that, even accepting the potassium caustic volume in DuPont's evidence as accurate, it would average out to less than {[redacted]} trucks per day. NS Reply II-B-184. But this statement ignores two fundamental points in DuPont's evidence. First, truck shipments are not evenly spread across the year because DuPont operates one business at Woodstock that

[119] NS Reply II-B-92.

[120] Id. at II-B-92 to -93.

[121] Dup. Reb. Ex. II-B-1, at 1.

[122] Dup. Reb. Ex. II-B-1, Attachment 1.

receives potassium caustic for periodic production campaigns and another that uses potassium caustic more regularly Dup Op. Narr. II-B-52.[123] Second, {{[redacted]}} Id. at II-B-51. Trucking would impose more costs and risks upon Olin associated with scheduling trucks, employing additional labor, and making four times as many connections compared with rail cars Id at II-B-52. DuPont cannot simply foist these costs upon Olin. Although Olin would incur higher costs for loading trucks, any freight savings would accrue only to DuPont NS's argument that Olin can ship trucks does not respond to these points.

Finally, NS improperly and inaccurately equates potassium caustic with another issue commodity, sodium caustic, which NS also calls sodium hydroxide. For example, NS contends that DuPont could truck potassium caustic from Charleston to Woodstock simply because "{{[redacted]}}." NS Reply II-B-183. Furthermore, NS claims that "{{[redacted]}}." Id. The ability of DuPont to receive sodium caustic at Woodstock or for Olin to load sodium caustic at Olin says absolutely nothing about the ability of either to handle potassium caustic They are different products, used in different processes, stored separately, and used at different locations within DuPont's Woodstock plant.

[123] The variability of shipment volumes is illustrated in DuPont Rebuttal Workpaper "KOH Shipment Summary.xlsx," which shows deliveries to Woodstock by month This data is in dry tons, which must be doubled to reflect shipping weight in a 50% solution

g. Caustic, Sodium (Caustic Soda)[124]

In its Opening Evidence at pages II-B-57 to -66, DuPont challenged 8 NS rates for transportation of sodium caustic to 9 destinations.[125] NS, in its Reply Evidence at pages II-B-151 to -157, has contested market dominance over 7 of the challenged rates to the following 8 destinations.[126]

Table II-B-4
Contested Sodium Caustic Lanes

Lane #	Origin	Interchange	Destination	Supplier
B-47	Charleston, TN	Memphis, TN	Woodstock, TN	Olin
B-79	McIntosh, AL	Mobile, AL	Delisle, MS	Olin
B-80	McIntosh, AL	New Orleans, LA	Orange, TX	Olin
B-81	McIntosh, AL	Mobile, AL	Woodstock, TN	Olin
B-107	Natrium, WV	Cincinnati, OH	Belle, WV	PPG
B-108	Natrium, WV	Lynchburg, VA	Danville, VA	PPG
B-112	Niagara Falls, NY	Columbus, OH	Belle, WV	OxyChem
B-114	Niagara Falls, NY	Buffalo, NY	Edgemoor, DE	Olin

Lanes B-47, B-79, B-80 and B-81 are shipments from DuPont suppliers that are captive to NS at the origin and destined for a DuPont facility after interchange with another carrier. Lanes B-107, B-108, B-112, and B-114 are shipments from DuPont suppliers that are served by another railroad and then interchanged to NS for delivery to DuPont facilities that are captive to NS.

NS contends that DuPont frequently uses trucks based upon its claim that DuPont shipped {{ }} trucks of sodium caustic from 2006-10.[127] NS Reply II-B-151. Over this 5-

[124] The evidence and testimony in this section is jointly sponsored by Mary Pileggi, Logistics Manager-NA Region and Suneet Ranganath, Sourcing Manager, Ag & Nutrition.

[125] Although there are 9 lanes, there are only 8 challenged rates because Lanes B-79 and 81 share the same NS rate from the same origin to the same interchange, before moving to different destinations on a different rail carrier.

[126] NS has not contested market dominance over the only single line rate, Lane A-9.

[127] DuPont has not been able to replicate this number from the NS Reply WP "DuPont Caustic Soda & Sodium Hydroxide Truck Shipments," which is a compilation of raw data from DuPont's truck shipment billing records for sodium caustic. In fact, DuPont comes up with a slightly higher number of {{ }} truck shipments. Dup. Reb. WP "DuPont Caustic Soda & Sodium Hydroxide Truck Shipments-Rebuttal," "Shipment Counts" worksheet. DuPont attributes this discrepancy to NS's failure to account for duplicate invoice records and the different types of billing records in the data. To obtain an accurate count of truck shipments using DuPont's truck bill records, it is necessary to filter the records to show only linehaul bill types (each shipment is the subject of only one linehaul bill, but may be the subject of multiple balance due bills or other bills). In addition, records

year period, this averages to {{[redacted]}} trucks per year. More significantly, this is but a tiny fraction of DuPont's total deliveries of caustic soda to the issue destinations in a single year, which DuPont presented at pages II-B-59 to -60 of its Opening Evidence [128] In 2010, DuPont received a total of {[redacted]} net tons of dry sodium caustic, which must be doubled for transportation because it is shipped in a 50% solution The resulting {[redacted]} net tons is the equivalent of {[redacted]} trucks, at 22 tons per truck. Thus, an average of {{[redacted]}} trucks to all destinations in a single year amounts to just 2% of the issue destination volumes.[129]

DuPont previously explained that trucks are used to transport sodium caustic to rail-served customers only for short distances or expedited deliveries Dup Op. Narr II-B-58. Indeed, {{[redacted]}}, or 91%, of DuPont's {{[redacted]}} sodium caustic truck shipments from 2006-10 were below 250 miles [130] Of the {{[redacted]}} truck shipments that exceeded 250 miles, {{[redacted]}}, or 75%, were to a single destination, Pascagoula, MS, that does not have rail service.[131] The remaining movements that exceeded 250 miles contained anywhere from just 1 truck to at most 14 trucks over the entire 5 year period [132] By comparison, the highway miles for the issue

containing a duplicate document number (a document number is associated with only one shipment) should be removed A corrected version of the NS reply workpaper is included as DuPont Rebuttal Workpaper "DuPont Caustic Soda & Sodium Hydroxide Truck Shipments-Rebuttal," and contains an ' Adjustments" worksheet that identifies all adjustments that DuPont made to the data in the workpaper. All further computations and references to sodium caustic trucks in DuPont's rebuttal evidence are based upon DuPont's truck count.

[128] NS ridicules this evidence as a "meaningless special study " NS Reply II-B-153. But NS has clearly misconstrued the purpose for which DuPont submitted this evidence, which was to demonstrate how small a role trucks truly play in the transportation of sodium caustic to the issue destinations. NS also describes this evidence as "truly ridiculous" because it includes DuPont facilities that are not served by NS Id. Whether or not a facility is served by NS is not the point, they are all destinations for the issue movements Some are captive to NS at the origin and others at the destination Because NS is proposing direct truck alternatives from the origin to destination, this data is absolutely relevant regardless whether NS serves the *origin or the destination*

[129] If instead of using the annual average over 5 years from 2006-10, the Board considered the actual number of truck shipments in 2010, this percentage would be even smaller. DuPont actually shipped only {{[redacted]}} trucks of sodium caustic in 2010, which was just 1.5% of the total volume received by the issue destinations Dup. Reb WP "DuPont Caustic Soda & Sodium Hydroxide Truck Shipments-Rebuttal," "Shipment Counts" worksheet

[130] See Dup Reb WP "DuPont Caustic Soda & Sodium Hydroxide Truck Shipments-Rebuttal," "Distance ' worksheet This is based upon DuPont's higher truck count. See supra note 127

[131] Id.

[132] Id.

movements range from 122 to 453 miles, with 6 of the 8 movements exceeding 345 miles, which is well beyond the distance traversed by 75% of DuPont's sodium caustic truck shipments.

NS argues that, because DuPont has received trucks from its sodium caustic suppliers in the past, those suppliers can ship by truck NS Reply II-B-152. But, a key point in DuPont's Opening Evidence was the fact that DuPont is the receiver, not the supplier, of sodium caustic, and that, as a receiver, DuPont cannot unilaterally compel its supplier to incur the greater costs and risks associated with loading trucks of sodium caustic when rail service is an option. Dup Op. Narr. II-B-61 to -62. Although the supplier would incur higher costs, any freight savings would accrue only to DuPont. NS's argument that DuPont's suppliers can ship trucks does not respond to these points.

Moreover, the truck shipments that DuPont has received from its sodium caustic suppliers are almost entirely over short distances or to DuPont facilities that are not rail-served. For example, NS points out that DuPont received {{[redacted]}} trucks of sodium caustic from Olin's McIntosh, AL facility in 2010. NS Reply II-B-152 But every single one of those trucks went to Pascagoula, MS, which is not rail-served and which is only 80 miles from McIntosh.[133] NS also points to {{[redacted]}} trucks[134] from PPG's Natrium facility over 5 years from 2006-10 All but two of those trucks went to three locations that were within just 64 miles (Washington, WV), 138 miles (Belle, WV), and 153 miles (Circleville, OH).[135] Furthermore, as DuPont explained at page II-B-61 of its Opening Evidence, the truck shipments to Belle were all delivered to facilities within the Belle complex that cannot receive rail cars. This data supports DuPont's argument that trucks are used primarily over short distances and to serve locations without rail access.

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[133] Dup Reb. WP "DuPont Caustic Soda & Sodium Hydroxide Truck Shipments-Rebuttal," "McIntosh" worksheet

[134] DuPont has counted {{[redacted]}} trucks Dup Reb WP "DuPont Caustic Soda & Sodium Hydroxide Truck Shipments-Rebuttal," "Natrium" worksheet; see supra note 127.

[135] Dup. Reb WP "DuPont Caustic Soda & Sodium Hydroxide Truck Shipments-Rebuttal," "Natrium" worksheet

NS next argues that the issue movement rail volumes are "eminently truckable" because the highest volume case lane, Lane B-108, averaged just {[redacted]} rail cars per year. NS Reply II-B-153 NS's claim is not credible because it has vastly undercounted the rail cars of sodium caustic that have historically been shipped in each case lane. NS presents its evidence of historic rail car volumes in NS Reply Exhibit II-B-5. That Exhibit, however, presents a significantly different car count from the traffic data that NS produced to DuPont in discovery and that DuPont summarized in its Opening Exhibit II-A-14 for 2009 and 2010.[136] The following table summarizes the different rail car count for each issue movement:

Table II-B-5
Sodium Caustic Rail Car Counts

	Dup. Op. Ex. II-A-14		NS Reply Ex. II-B-5	
Lane #	2009	2010	2009	2010
B-47	{[redacted]}	{[redacted]}	{[redacted]}	{[redacted]}
B-79	{[redacted]}	{[redacted]}	{[redacted]}	{[redacted]}
B-80	{[redacted]}	{[redacted]}	{[redacted]}	{[redacted]}
B-81	{[redacted]}	{[redacted]}	{[redacted]}	{[redacted]}
B-107	{[redacted]}	{[redacted]}	{[redacted]}	{[redacted]}
B-108	{[redacted]}	{[redacted]}	{[redacted]}	{[redacted]}
B-112	{[redacted]}	{[redacted]}	{[redacted]}	{[redacted]}
B-114	{[redacted]}	{[redacted]}	{[redacted]}	{[redacted]}
Total	{[redacted]}	{[redacted]}	{[redacted]}	{[redacted]}

Note that, for Lane B-81, DuPont's rail car count in 2009 exceeds the NS count by {[redacted]} rail cars, and in 2010, NS does not show {[redacted]} where DuPont shows {[redacted]}. Because the NS rail car counts are unsupported and are not based upon any data provided to DuPont in discovery, the Board should not give them any weight.

In addition, there is little to be learned from the average sodium caustic rail car count over several years for a particular origin-destination pair. DuPont purchases sodium caustic from

[136] Because NS only produced traffic data for 2009 and 2010, DuPont can only compare those two years out of the five years presented in NS Reply Exhibit II-B-5 Presumably similar data discrepancies exist in those years

suppliers which have multiple production facilities. For example, in the contested case lanes, DuPont purchases sodium caustic from Olin, which may supply the sodium caustic from facilities in Charleston, TN, McIntosh, AL, or Niagara Falls, NY. Olin, not DuPont, decides from which plant it will supply sodium caustic. Thus, volume may fluctuate significantly over a case lane from one year to the next, even to the point of disappearing altogether, for a variety of reasons of which DuPont may not be aware.[137] Consequently, the highest volume years are more pertinent than a multi-year average when determining how many trucks might be needed to handle the equivalent rail volume of sodium caustic.

Finally, in the discussion of the individual sodium caustic issue movements below, DuPont points to dramatic NS rate increases that range from 60-768% over a brief 2-year period, from 2009-11, as evidence of the exercise of NS market power. Although NS claims that such dramatic rate increases were "{[redacted]}," that does not explain the full magnitude of these rate increases.[138] NS alleges that DuPont's legacy contract that expired in 2009 {[redacted]}.[139] This translates to a 46.8% increase in the contract rates over that time.[140] But during that same time NS's variable costs for transporting sodium caustic increased by 56.6%, which would justify only a 6.7% post-contract rate increase.[141] Therefore, the legacy contract cannot explain more than a tiny fraction of each rate increase.

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[137] One such reason may be due to the fact that sodium caustic and chlorine are co-products. Therefore, a supplier will want to produce sodium caustic closer to where it also has a market for the chlorine in order to minimize the distance that chlorine must be transported. Also, both planned and unplanned plant outages will play a role.

[138] NS Reply II-B-92.

[139] Id. at II-B-92 to -93.

[140] Dup. Reb. Ex. II-B-1, at 1.

[141] Dup. Reb. Ex. II-B-1, Attachment 1, columns (8), (9).

The remainder of this section responds to the NS Reply Evidence as to each of the 8 contested sodium caustic lanes:

Lane B-47 (Charleston, TN to Woodstock, TN): This is a gateway rate from Charleston, TN to an interchange with CN at Memphis, TN. NS contends that an {{[redacted]}} direct truck rate for this 354-mile movement constitutes effective competition. NS Reply II-B-153. The NS analysis is flawed in multiple respects

First, NS has not calculated an accurate truck rate NS inappropriately used the Suttles Truck Leasing contract for the direct truck rate. NS Witness Gordon Heisler purports to have determined all truck costs "based on actual rates available to DuPont today...."[142] NS Reply II-B-106 (underline added). The Suttles contract, however, expired by its terms on July 31, 2009, which is more than 3 years before NS submitted its evidence.[143] Furthermore, Dana Transport acquired Suttles Trucking, effective September 1, 2008 [144] At that time, DuPont and Dana agreed to merge the two carriers' rate schedules, and that the Dana mileage scale rates would replace those in the Suttles contract.[145] Because Mr Heisler used the Suttles mileage scale to determine his alternative truck rate, he in fact was using rates that expired on September 1, 2008, which is more than 4 years before NS submitted its reply evidence Consequently, the NS alternative rate is not a valid current rate [146] DuPont has calculated the direct truck rate using its

[142] It is unclear exactly what date NS equates to its undefined use of the term "today " However, in footnote 107 on page II-B-106, NS purports to have calculated fuel surcharges as of the same date used by DuPont in its Opening Evidence, which means that NS also should have calculated truck rates as of that same date in order to provide an apples-to-apples comparison However, NS represents that date to be May 11, 2012, although DuPont actually used July 11, 2011 for all of its truck rates Dup. Op WP "Direct Truck Costs xls," "Sources" tab Indeed, DuPont could not have used May 11, 2012 since DuPont's Opening Evidence was filed on April 30, 2012

[143] Dup Reb WP "Suttles Contract" 1, in the "Suttles" folder

[144] Dup Reb. WP "Dana Transport Merger Notice pdf" 1, in the "Suttles" folder; Dup Reb WP "Suttles Merger E-mail," in the "Suttles" folder.

[145] Dup Reb WP "Dana Transport Merger Notice pdf" 2-21, in the "Suttles" folder.

[146] Furthermore, NS did not calculate the long-expired Suttles rate accurately In addition to the mileage scale rate for the loaded movement that NS calculated, there is a dead-head charge of {{[redacted]}} Dup Reb WP "Suttles Contract Rate Exhibit," "2nd Revised Page 10" worksheet, in the "Suttles" folder.

contract with {{[redacted]}}, which is {{[redacted]}} higher than the through rail rate. Dup Op. Narr. II-B-60.

Second, the rail rate has only begun to approach the direct truck rate after recent substantial rate increases by NS. In 2010, NS increased its rate by {[redacted]}, and in 2011, it increased that rate by an additional {[redacted]} for a cumulative two year rate increase of {[redacted]}. Dup Op Narr. II-B-60; Dup. Op. Ex. II-B-3. In contrast, over that same time frame, the connecting carrier on this route, CN, raised its rates by {{[redacted]}}, respectively, which illustrates the degree to which NS has exerted its market power. Under NS's logic, it would have possessed *market dominance prior* to 2010 because the direct truck rate exceeded the through rail rate by more than 20%, and thus was not an effective competitive constraint upon rail rates. NS Reply II-B-107. However, now that NS has exercised its market power by aggressively increasing its rate to within 20% of the truck rate, NS claims it no longer possesses market dominance. After NS has increased its rate over such a short period and by such substantial amounts to {{[redacted]}} the rate of an alternative mode, it is not surprising that NS's ability to raise its rate any further might appear to be constrained. But, it is fundamentally illogical for market dominance to exist only until a railroad actually exercises that dominance. Therefore, NS's claim that its alternative truck rate is an effective competitive constraint simply is not credible.

Third, DuPont has not received a single truck shipment over Lane B-47 from 2006-10.[147] Furthermore, the Woodstock facility has received just {[redacted]} sodium caustic trucks over this 5 year period from all other origins.[148] Despite these facts, NS argues the significance of Olin shipping {{[redacted]}} trucks from Charleston to Pascagoula, MS in 2009 and 2010. NS Reply II-B-

[147] Dup. Reb. WP "DuPont Caustic Soda & Sodium Hydroxide Truck Shipments-Rebuttal," "Woodstock" worksheet.

[148] Id.

153. But Pascagoula is not rail-served. Therefore, all this fact proves is that Olin shipped sodium caustic to Pascagoula by the only form of bulk transportation that was physically possible

Lane B-79 (McIntosh, AL to Delisle, MS): This gateway rate from McIntosh to Mobile, AL applies to Lanes B-79 and -81. NS contends that a {{ }} lower direct truck rate for this 1222-mile movement constitutes effective competition [149] NS Reply II-B-154 There are two principal problems with this contention.

The single greatest problem with NS's claim is that Lanes B-79 and -81 are, both individually and in combination, the two largest volume contested sodium caustic movements, by both the DuPont and the NS rail car counts. The DuPont rail car counts show that, in 2009, there were { } cars on Lane B-79 and { } cars on Lane B-81 At a ratio of four trucks per rail car, this would require { } trucks on Lane B-79 and { } trucks on Lane B-81. In total, Olin would have been required to load an average of { } trucks per day at McIntosh every single day of the year just to serve these two destinations. This would be in addition to truck shipments to Olin's other customers, including locations that do not have rail access and thus can only receive truck shipments This explains why {{ }} Dup Op Narr II-B-62 n 119.

Another problem is that the NS argument ignores the fact that the direct truck rate is now lower than the rail rate solely as a result of recent, significant NS rate increases over just two short years. In 2010, NS increased its rate by { }, and in 2011, it increased that rate by an additional { } for a cumulative two-year rate increase of { } Dup Op Narr II-B-60. Dup. Op. Ex II-B-3 In contrast, over that same time frame, the connecting carrier on this route,

[149] The NS narrative states that this rate is provided by {{ }}, although Reply Exhibit II-B-2 and NS Reply WP "Direct Truck Analysis" identify the carrier as {{ }}. DuPont can only replicate the NS rate from the {{ }} contract.

CN. raised its rates cumulatively by {{[redacted]}}. which illustrates the degree to which NS has exerted its market power After NS has increased its rate over such a short period and by such substantial amounts, it is not surprising that NS's ability to raise its rate any further might appear to be constrained. But. it is fundamentally illogical for market dominance to exist only until a railroad actually exercises that dominance. Therefore. NS's claim that its alternative truck rate is an effective competitive constraint simply is not credible.

Lane B-80 (McIntosh, AL to Orange, TX): This is a gateway rate from McIntosh. AL to an interchange with UP at New Orleans NS contends that a {{[redacted]}} lower direct truck rate for this 398-mile movement constitutes effective competition.[150] NS Reply II-B-154. But, this claim ignores the fact that the direct truck rate is now lower than the rail rate solely as a result of a single significant NS rate increase of {[redacted]} in 2011 Dup Op Narr. II-B-60; Dup. Op Ex. II-B-3. In contrast. the connecting carrier on this route, UP. raised its rate cumulatively over both 2010 and 2011 by {{[redacted]}}. which illustrates the degree to which NS has exerted its market power After NS has increased its rate over such a short period and by such substantial amounts. it is not surprising that NS's ability to raise its rate any further might appear to be constrained. But, it is fundamentally illogical for market dominance to exist only until a railroad actually exercises that dominance Therefore. NS's claim that its alternative truck rate is an effective competitive constraint simply is not credible.

Furthermore. like Lanes B-79 and B-81. this movement originates at Olin's McIntosh. AL facility. Converting this lane to trucks would impose even more truck loading demands upon Olin in addition to those that NS would impose in those other lanes. As noted in the discussion of those lanes. {{[redacted]

[150] The NS narrative states that this rate is provided by {{[redacted]}}. although Reply Exhibit II-B-2 and NS Reply WP "Direct Truck Analysis" identify the carrier as {{[redacted]}} DuPont believes that the latter carrier is correct.

[redacted]

Lane B-81 (McIntosh, AL to Woodstock, TN): This gateway rate from McIntosh to Mobile, AL applies to Lanes B-79 and -81. NS contends that a {{[redacted]}} direct truck rate for this 348-mile movement constitutes effective competition NS Reply II-B-154 to -55 There are multiple flaws in the NS's argument

First, as discussed under Lane B-79 above, Lanes B-79 and -81 are the two largest volume contested sodium caustic movements. In 2009, there were {[redacted]} cars on Lane B-79 and {[redacted]} cars on Lane B-81. At a ratio of four trucks per rail car, this would require {[redacted]} trucks on Lane B-79 and {[redacted]} trucks on Lane B-81. In total, Olin would have been required to load an average of {[redacted]} trucks per day at McIntosh every single day of the year just to serve these two lanes. This would be in addition to truck shipments to Olin's other customers, including locations that do not have rail access and thus can only receive truck shipments. This would explain both why {{[redacted]}} Dup. Op. Narr II-B-62 n 119

Second, as discussed under Lane B-47 above, NS has improperly used the {{[redacted]}} contract to determine the direct truck rate.[151] The correct truck rate calculated by DuPont is {{[redacted]}} higher than the through rail rate, which {{[redacted]}} Dup Op. Narr II-B-60. Indeed, even the incorrect NS truck rate {{[redacted]}}

[151] NS also omitted the Suttles dead-head charge of {{[redacted]}}, which would add {{[redacted]}} to the cost of each truck. See supra note 146.

Third, recent significant rate increases by NS prove that the direct truck rate has not been an effective competitive constraint. In 2010, NS increased its rate by {[redacted]}, and in 2011, it increased that rate by an additional {[redacted]} for a cumulative two year rate increase of {[redacted]}. Dup. Op. Narr II-B-60, Dup. Op. Ex. II-B-3. In contrast, over that same time frame, the connecting carrier on this route, CN, raised its rate cumulatively by {{[redacted]}}, which illustrates the degree to which NS has exerted its market power. After NS has increased its rate over such a short period and by such substantial amounts, it is not surprising that NS's ability to raise its rate any further might appear to be constrained. But, it is fundamentally illogical for market dominance to exist only until a railroad actually exercises that dominance. Therefore, NS's claim that its alternative truck rate is an effective competitive constraint simply is not credible.

Lane B-107 (Natrium, WV to Belle, WV): This is a gateway rate from an interchange with CSXT at Cincinnati, OH to Belle. NS contends that a {{[redacted]}} lower direct truck rate for this 140-mile movement constitutes effective competition NS Reply II-B-155. NS also points to the fact that DuPont already ships sodium caustic over this route by trucks Although DuPont ordinarily would not contest market dominance over this lane given these facts, there are other facts that preclude DuPont from using trucks which NS ignores.

As DuPont explained at page II-B-61 of its Opening Evidence, the Belle complex houses different production facilities for four different businesses that consume sodium caustic. Two of those facilities cannot receive rail cars, a third cannot receive trucks, and only the fourth can receive both trucks and rail cars [152] The historic truck shipments from Natrium to Belle have been for the two businesses that cannot receive rail cars The business that cannot receive trucks

[152] DuPont has a point-to-point rate for this lane to handle the volume that cannot be delivered by rail, not because it believes trucking is "a significant enough alternative, to have negotiated a point-to-point rate for the lane" See NS Reply II-B-3; NS Reply WP 'DuPont Point to Point Contract Rates.xls"

is completely captive to NS rail service. Because the truck and rail shipments from Natrium to Belle do not serve the same locations within the Belle plant, they do not represent alternatives to each other.

DuPont's captivity to NS at Belle is exemplified by the magnitude of recent NS rate increases. In 2010, NS increased its rate by {[redacted]}, and in 2011, it increased that rate by an additional {[redacted]} for a cumulative two year rate increase of {[redacted]} Dup. Op Narr. II-B-60; Dup. Op. Ex. II-B-3. In contrast, over that same time frame, the connecting carrier on this route, CSXT, raised its rate cumulatively by {{[redacted]}}, which illustrates the degree to which NS has exerted its market power After facing a {[redacted]} rate increase, with the option to truck for {{[redacted]}} less, DuPont surely would be doing so if it had that option. Therefore, NS's claim that its alternative truck rate is an effective competitive constraint simply is not credible

Lane B-108 (Natrium, WV to Danville, VA): This is a gateway rate from an interchange with CSXT at Lynchburg, VA to Danville. NS contends that a {{[redacted]}} direct truck rate for this 363-mile movement constitutes effective competition. NS Reply II-B-156. This conclusion is fundamentally flawed

First, NS has not used a proper direct truck rate As it did with Lane B-81, NS based its direct truck rate upon a {{[redacted]}} contract that is four years out of date.[153] The direct truck rate calculated by DuPont, which is the only other evidence of a direct truck price, is {{[redacted]}} higher than the rail rate. Dup. Op. Narr. II-B-60.

Second, the truck rate would be even higher but for very recent NS rate increases In 2010, NS increased its rate by {[redacted]}, and in 2011, it increased that rate by an additional {[redacted]} for a cumulative two year rate increase of {[redacted]}. Dup. Op Narr. II-B-60; Dup. Op. Ex. II-B-3.

[153] NS confusingly also refers to a contract by which {{[redacted]}} can provide truck transportation for less than rail transportation, but then refers to the {{[redacted]}} contract that contains a higher rate. NS Reply WP "Direct Truck Analysis" only contains support for the {{[redacted]}} rate

In contrast, over that same time frame, the connecting carrier on this route, CSXT, raised its rates by {{[redacted]}}, respectively, which illustrates the degree to which NS has exerted its market power.[154] After NS has increased its rate over such a short period and by such substantial amounts, it is not surprising that NS's ability to raise its rate any further might appear to be constrained But, it is fundamentally illogical for market dominance to exist only until a railroad actually exercises that dominance. Therefore, NS's claim that its alternative truck rate is an effective competitive constraint simply is not credible

Finally, DuPont did not truck any sodium caustic over this lane, or at its Danville facility, from 2006-10 Dup. Reb. WP "DuPont Caustic Soda & Sodium Hydroxide Truck Shipments-Rebuttal," "Shipment Counts" worksheet.

Lane B-112 (Niagara Falls, NY to Belle, WV): This is a gateway rate from an interchange with CSXT at Columbus, OH to Belle NS contends that a {{[redacted]}} direct truck rate for this 453-mile movement constitutes effective competition. NS Reply II-B-156 to -157. This conclusion is fundamentally flawed.

First, NS has not used a proper direct truck rate. As it did with Lane B-81, NS based its direct truck rate upon a {{[redacted]}} contract that is four years out of date. The direct truck rate calculated by DuPont, which is the only other evidence of a direct truck price, is {{[redacted]}} higher than the rail rate, which exceeds even the exceedingly high 20% threshold that NS uses to determine the rate level at which trucks no longer provide effective competition Dup. Op Narr. II-B-60

Second, the truck rate would be even higher but for very recent NS rate increases. In 2010, NS increased its rate by {[redacted]}, and in 2011, it increased that rate by an additional {[redacted]}

[154] {{[redacted]}} Dup Op Ex II-B-3

for a cumulative two year rate increase of {[redacted]}. Dup. Op. Narr. II-B-60, Dup Op. Ex II-B-3. In contrast, over that same time frame, the connecting carrier on this route, CSXT, raised its rates by {{[redacted]}}, respectively, which illustrates the degree to which NS has exerted its market power. After NS has increased its rate over such a short period and by such substantial amounts, it is not surprising that NS's ability to raise its rate any further might appear to be constrained But, it is fundamentally illogical for market dominance to exist only until a railroad actually exercises that dominance. Therefore, NS's claim that its alternative truck rate is an effective competitive constraint simply is not credible.

Lane B-114 (Niagara Falls, NY to Edgemoor, DE): This is a gateway rate from an interchange with CSXT at Buffalo, NY to Edgemoor. NS contends that a {{[redacted]}} direct truck rate for this 373-mile movement constitutes effective competition. NS Reply II-B-157. This conclusion is fundamentally flawed.

First, NS has not used a proper direct truck rate As it did with Lane B-81, NS based its direct truck rate upon a {{[redacted]}} contract that is four years out of date The direct truck rate calculated by DuPont, which is the only other evidence of a direct truck price, is {{[redacted]}} higher than the rail rate. {{[redacted]}}. Dup. Op. Narr. II-B-60.

Second, the truck rate would be even higher but for very recent NS rate increases. In 2010, NS increased its rate by {[redacted]}, and in 2011, it increased that rate by an additional {[redacted]} for a cumulative two year rate increase of {[redacted]} Dup Op. Narr. II-B-60; Dup. Op Ex. II-B-3. In contrast, over that same time frame, the connecting carrier on this route, CSXT, raised its rates by {{[redacted]}}, respectively, which illustrates the degree to which NS has exerted

its market power [155] After NS has increased its rate over such a short period and by such substantial amounts, it is not surprising that NS's ability to raise its rate any further might appear to be constrained. But, it is fundamentally illogical for market dominance to exist only until a railroad actually exercises that dominance. Therefore, NS's claim that its alternative truck rate is an effective competitive constraint simply is not credible

[155] [redacted] Dup Op Ex II-B-3

h. Dimethyl Ether[156]

In its Opening Evidence, DuPont challenged 5 NS rates for transporting Dimethyl Ether ("DME") from Belle, WV to 7 destinations.[157] In its Reply Evidence, NS has contested its market dominance over all 5 rates, but only to the following 5 destinations:[158]

Table II-B-6
Contested Dimethyl Ether Lanes

Lane #	Origin	Interchange	Destination	Customer
A-3	Belle, WV	NS-Direct	Danville, IL	KIK
B-23	Belle, WV	Chicago, IL	Lorenzo, IL	Diversified CPC
B-42	Belle, WV	Meridian, MS	Winford Spur, LA	Acropress
B-89	Belle, WV	Cincinnati, OH	Gainesville, GA	KIK
B-120	Belle, WV	Pine, IN	Divine, IL	Technical Propellants

As with nearly every issue commodity, the NS Reply Evidence, at pages II-B-157 to -161, essentially is about lower truck rates and the fact that DuPont occasionally has shipped DME on a few of the issue routes by truck But also like nearly every issue commodity, NS completely ignores the fact that truck rates are lower only after NS increased the challenged rates by double and triple digit percentages, and that, to the extent there are any truck shipments on the issue lanes at all, they are few and far between Furthermore, NS is overly dismissive of the substantial obstacles to shipping DME by truck from Belle.

In its Opening Evidence, at page II-B-76, DuPont noted that only 5% of its total DME volume is shipped by truck, and that no more than {{[redacted]}} truck shipments occurred on any issue movement over the entire five year period from 2006-10. Indeed, during that entire 5 year period, DuPont shipped just {{[redacted]}} trucks of DME from Belle to just 10 locations, of which

[156] The evidence and testimony in this section is jointly sponsored by Mary Pileggi, Logistics Manager-NA Region, and John Leusler, U S Account Manager.

[157] Although there are 7 lanes, there are only 5 challenged rates because the NS segment for some of the movements is from the same origin to the same interchange point

[158] *NS has not contested market dominance over lanes B-1 and -30, which are covered by the same rate from Belle, WV to the* Chicago, IL interchange However NS has contested market dominance over Lane B-23, which is the same challenged rate to Chicago but to an interchange with BNSF instead of UP

{{[redacted]}} trucks went to six locations that do not have the ability to receive rail.[159] The amount of DME transported by truck when rail alternatives are available is one of five explicitly identified market dominance indicators in Market Dominance Determinations, 365 I.C.C. at 133

DuPont also explained that it ships so little DME by truck because its Belle plant, and indeed its entire distribution network for DME, is designed around rail transportation. Dup. Op. Narr. II-B-77 to -79 Consequently, Belle has only one truck loading rack that can be used for DME, and that rack is shared with AHM, which is another issue commodity that NS claims can be converted to trucks. Id at II-B-77 to -78

NS claims that the issue movements have sufficiently small volumes that DuPont is not likely to need an additional loading rack NS Reply II-B-158. NS also claims that DuPont has not presented any evidence that building an additional rack would be cost prohibitive. Id NS is wrong on both counts.

First, NS concedes that {[redacted]} additional truck shipments per year would be needed to convert the rail volumes in the contested DME lanes to trucks, which would add {[redacted]} truck loadings per day. Id But {[redacted]} additional trucks per day would consume half the capacity of the only loading rack, which DME shares with a much larger volume of AQM shipments. As discussed in Part II B 2.1, infra, existing truck shipments of AHM and DME currently average {{[redacted]}} truck loadings per day, and NS has proposed to increase AHM truck loadings by {[redacted]} per day. That does not leave any spare capacity at all for additional DME truck loadings no matter how small. Therefore, a new truck loading rack is absolutely necessary.

[159] Those six locations are Apodaca, NL, Channahon, IL; Hillsborough, NJ, Petal, MS, Somerville, NJ, and Sparta, NJ

Second, DuPont has presented evidence that this new truck loading rack would cost {{[redacted]}} plus annual operating costs of {{[redacted]}} for each of 5 additional personnel Dup Op. Narr. II-B-109. NS has either ignored or overlooked that evidence.

NS also rejects DuPont's evidence that it would need to purchase {[redacted]} specialized trailers in order to convert current DME rail volumes to trucks. Dup. Op Narr. II-B-79 to -80. First, NS claims that DuPont has ample trailers available from Sentinel NS Reply II-B-157 to -158, -159 NS does not even acknowledge DuPont's opening evidence that it has just three of the specialized trailers used to transport DME, that those trailers are used to meet the short-term emergency needs of its customers, and that DuPont always uses its private motor carrier. Sentinel, because of special handling requirements Instead, NS seems to assume that DuPont can obtain additional trailers from Sentinel. But the work papers cited by NS do not support its conclusion. NS Reply WP "Sentinel Charleston WV Terminal SOW.pdf" states that "{{[redacted]}}" This document is quite clear that Sentinel provides the tractors, but not the trailers. Furthermore, this document clearly states that Sentinel currently uses its tractors to serve {{[redacted]}} DME customers, which means those tractors are not available for additional truck shipments Therefore, not only would DuPont need more specialized trailers, but Sentinel also would need more specially-equipped tractors.

NS witness, Gordon Heisler, claims that only {[redacted]} trucks would be needed to handle the contested DME volumes, which is completely unrealistic NS Reply II-B-159. NS Reply WP "DME Truck Fleet Size xlsx." Mr Heisler's analysis assumes volume is distributed evenly across all customer lanes throughout the year and that there is no extra hold time or inventory

builds. Typically when customers order material they are planning a production run and require an equivalent of at least 1 railcar of volume in a very short period of time. This would require 4-5 trailers to be delivered to a single customer over the course of 4-5 days and the customer may choose to hold the trailers prior to the start of the run If the trailer fleet is increased by 3 6 trucks (round to 4 trucks), this single customer's demand may be satisfied, but then no other customer shipments could be made at that time. Additionally the annual volume on Lanes A-3 and B-120 each average approximately {[redacted]} per week Therefore, an equivalent of at least {[redacted]} for each of these customer lanes, for a total of {[redacted]}, would be required to satisfy their demand. A drop and swap arrangement would most likely be set up for each of these customers, so the fleet would require each lane to be sized to plan for {[redacted]} available for loading, {[redacted]} in transit, {[redacted]} at the customer, and {[redacted]} for maintenance/ unscheduled delays/or possibly {[redacted]} to be in transit at the same time. Since the other contested DME lanes (B-23, B-42 and B-89) are lower volume, DuPont would plan for at least {[redacted]} to support those lanes and look to manage shipping/delivery schedules across all lanes when those orders are received. If the scenario to transition to truck shipments on a permanent basis actually came to reality, DuPont probably would add another {[redacted]} so it could support a full railcar worth of material to 3 customers simultaneously via truck Therefore, DuPont's estimated need for {[redacted]} additional specialized trailers is a conservative number, whereas Mr. Heisler's estimate is totally inadequate and unrealistic.

Finally, NS perversely asserts that, even if DuPont did need to purchase additional trailers, the truck cost savings is so significant that DuPont economically could do so. NS Reply II-B-159 This is contrary to precedent and illustrates the absurdity of NS's overarching theme

that, so long as trucking is physically feasible, a lower truck rate is conclusive proof of effective competition. As the D.C. Circuit held in Arizona, 742 F.2d at 650-51:

> At the core of the "effective competition" standard is the idea that there are competitive, market pressures on the railroads deterring them from charging monopoly prices for transporting goods. *Of course, any such effective competition will always be relative to a particular price that the railroads charge.* At some point the availability of an alternative such as the horse and buggy or even people carrying oil in buckets theoretically prevents railroads from raising their rates beyond an outer bound. But the mere existence of some alternative does not in itself constrain the railroads from charging rates far in excess of the just and reasonable rates that Congress thought the existence of competitive pressures would ensure. (italics in original)

The NS logic exemplifies the foregoing concerns, because it means that, by exercising its market power to increase rail rates as far above truck rates as possible, a railroad could more strongly immunize itself against a finding of market dominance. In other words, the more a railroad exercises its market dominance, the less likely it would be found to have market dominance.

In the discussion of the individual DME issue movements below, DuPont points to dramatic NS rate increases that range from 54-268% over a brief 2-year period, from 2009-11, as evidence of the exercise of NS market power. Although NS claims that such dramatic rate increases were "{[redacted]}," that cannot explain the full magnitude of these rate increases.[160] NS alleges that DuPont's legacy contract that expired in 2009 {[redacted]}.[161] This translates to a 46.8% increase in the

[160] NS Reply II-B-92.

[161] Id. at II-B-92 to -93.

contract rates over that time.[162] But during that same time NS's variable costs for transporting DME increased by 55.3%, which would justify only a 5.8% post-contract rate increase.[163]

The remainder of this section responds to the NS Reply Evidence as to each of the 5 contested DME lanes.

Lane A-3 (Belle to Danville, IL): This is a single line rate. NS contends that a {{[redacted]}} lower truck rate for this 396 mile movement constitutes effective competition.[164] NS Reply II-B-159. NS, however, ignores the fact that this rate differential is attributable solely to very recent and sizeable NS rate increases. In 2010, NS increased its rate by {[redacted]}, and in 2011, it increased that rate by an additional {[redacted]} for a cumulative two year rate increase of {[redacted]}. Dup. Reb. Ex. II-B-2.[165] After NS has increased its rate over such a short period and by such substantial amounts, it is not surprising that NS's ability to raise its rate any further might appear to be constrained. But, it is fundamentally illogical for market dominance to exist only until a railroad actually exercises that dominance. Therefore, NS's claim that the lower truck rate is an effective competitive constraint simply is not credible.

NS also has not factored in the additional infrastructure that DuPont must build at Belle in order to increase both its truck fleet and its truck loading capacity {{[redacted]

[162] Dup. Reb. Ex. II-B-1, at 1.

[163] Dup. Reb. Ex. II-B-1, Attachment 1, columns (8), (9).

[164] DuPont has calculated a {{[redacted]}} lower truck rate, despite using the same motor carrier as NS. Dup. Op. Narr. II-B-81. The difference is attributable to two NS errors. First, NS calculated the fuel surcharge only as a percent of the mileage scale rate when it also should have included the {{[redacted]}} flat charge. Second, NS uses a 4.4 truck-to-rail ratio whereas DuPont used a 4.5 ratio. For all commodities, DuPont rounded the average truck volumes to the nearest half truck. DuPont's methodology is conservative because, in the real world, a partial truck load would be charged the same rate as a full truck. It would have been more appropriate for DuPont to have rounded up to the nearest whole truck. Therefore, the DuPont rate estimate is closer to reality than the NS estimate, although both are below the true cost.

[165] In preparing its Rebuttal Evidence, DuPont discovered an error in the Excel formula it used to calculate the change in the NS rate for the Exhibit A case lanes in Dup. Op. Ex. II-B-3. Instead of calculating the cumulative rate change from 2009-2011, the formula calculated the cumulative change from 2007-2011. Although NS did not note this error in its Reply Evidence, DuPont has corrected that error in Rebuttal Exhibit II-B-2.

[redacted]}}.

NS Reply WP "DuPont Dimethyl Ether Truck Shipments xls."

Lane B-23 (Belle to Lorenzo, IL): This gateway rate from Belle to Chicago applies to Lanes B-1, -23 and -30, although NS has only contested its market dominance over Lane B-23. NS contends that a {{[redacted]}} lower direct truck rate for this 489-mile movement constitutes effective competition.[166] NS Reply II-B-160. There are multiple flaws in NS's logic.

First, NS ignores the fact that the lower truck rate is the result of very recent and sizeable NS rate increases. In 2010, NS increased its rate by {[redacted]}, and in 2011, it increased the rate by an additional {[redacted]} for a cumulative two year rate increase of {[redacted]}. Dup. Op. Narr. II-B-81; Dup. Op. Ex. II-B-3. In contrast, over that same time frame, the connecting carrier on this route, BNSF, raised its rate cumulatively by {{[redacted]}}, which illustrates the degree to which NS has exerted its market power. After NS has increased its rate over such a short period and by such substantial amounts, it is not surprising that NS's ability to raise its rate any further might appear to be constrained. But, it is fundamentally illogical for market dominance to exist only until a railroad actually exercises that dominance. Therefore, NS's claim that its alternative truck rate is an effective competitive constraint simply is not credible.

Second, NS glosses over the absurdity of a truck rate that is {{[redacted]}} lower than the rail rate on a 489-mile movement. As demonstrated in the preceding paragraph, that differential is attributable to recent NS rate increases, not those of the connecting carrier. NS makes no attempt to address this absurdity, since truck costs are higher than rail costs as distance increases.

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[166] DuPont has calculated a {{[redacted]}} lower truck rate. Dup. Op. Narr. II-B-81. The difference is attributable to two NS errors. First, NS calculated the fuel surcharge only as a percent of the mileage scale rate when it also should have included the {{[redacted]}} flat charge. Second, NS uses a 4.4 truck-to-rail ratio whereas DuPont used a 4.5 ratio. For all commodities, DuPont rounded the average truck volumes to the nearest half truck. DuPont's methodology is conservative because, in the real world, a partial truck load would be charged the same rate as a full truck. It would have been more appropriate for DuPont to have rounded up to the nearest whole truck. Therefore, the DuPont rate estimate is closer to reality than the NS estimate, although both are below the true cost.

Finally, NS has not factored in the additional infrastructure that DuPont must build at Belle in order to increase both its truck fleet and its truck loading capacity. {{[redacted]}}. Dup Op. WP "DME Truck Shipments xls," "Shipments by Case Lane and Year" worksheet, in the "DME" folder.

Lane B-42 (Belle to Winford Spur, LA): This gateway rate from Belle to Meridian, MS applies only to Lane B-42. NS contends that a {{[redacted]}} lower direct truck rate for this 900-mile movement constitutes effective competition.[167] NS Reply II-B-160. There are multiple flaws in NS's logic

First, NS ignores the fact that the lower truck rate is the result of very recent and sizeable NS rate increases. In 2010, NS increased its rate by {[redacted]}, and in 2011, it increased the rate by an additional {[redacted]} for a cumulative two year rate increase of {[redacted]}. Dup Op Narr. II-B-81; Dup. Op. Ex. II-B-3. In contrast, over that same time frame, the connecting carrier on this route, KCS, raised its rate cumulatively by {{[redacted]}}, which illustrates the degree to which NS has exerted its market power. After NS has increased its rate over such a short period and by such substantial amounts, it is not surprising that NS's ability to raise its rate any further might appear to be constrained. But, it is fundamentally illogical for market dominance to exist only until a railroad actually exercises that dominance. Therefore, NS's claim that its alternative truck rate is an effective competitive constraint simply is not credible.

[167] DuPont has calculated a {{[redacted]}} lower truck rate Dup Op Narr II-B-81 The difference is attributable to two NS errors. First, NS calculated the fuel surcharge only as a percent of the mileage scale rate when it also should have included the {{[redacted]}} flat charge Second, NS uses a 4 4 truck-to-rail ratio whereas DuPont used a 4 5 ratio For all commodities, DuPont rounded the average truck volumes to the nearest half truck DuPont's methodology is conservative because, in the real world, a partial truck load would be charged the same rate as a full truck It would have been more appropriate for DuPont to have rounded up to the nearest whole truck. Therefore, the DuPont rate estimate is closer to reality than the NS estimate, although both are below the true cost.

Second, NS glosses over the absurdity of a truck rate that is {{[redacted]}} lower than the rail rate on a 900-mile movement. As demonstrated in the preceding paragraph, that differential is attributable to recent NS rate increases, not those of the connecting carrier. NS makes no attempt to address this absurdity, except to note that DuPont shipped {{[redacted]}} truck on this lane in 2006. NS Reply II-B-160. But this fact exemplifies how few and far between such long distance truck shipments are, and the exceptional circumstances in which they occur, because truck costs are higher than rail costs as distance increases.

Third, NS incorrectly contends that, because there has been only {[redacted]} rail car shipment in this lane over the last 5 years, DuPont can easily convert this lane to truck. NS Reply II-B-160. According to the NS traffic data produced to DuPont in discovery, there were {[redacted]} cars in 2009 and {[redacted]} in 2010. Dup. Reb. WP "Comparison of NS Waybill Data and NS Reply Exhibit II-B-5.pdf." DuPont cannot ascertain whether this same discrepancy exists in other years because NS has not provided traffic data for any other years.

Finally, NS has not factored in the additional infrastructure that DuPont must build at Belle in order to increase both its truck fleet and its truck loading capacity. {{[redacted]}}. NS Reply WP "DuPont Dimethyl Ether Truck Shipments.xls."

Lane B-89 (Belle to Gainesville, GA): This gateway rate from Belle to Cincinnati, OH applies only to Lane B-89. NS contends that a {{[redacted]}} lower direct truck rate for this 411 mile movement constitutes effective competition.[168] NS Reply II-B-160. There are multiple flaws in NS's logic.

[168] DuPont has calculated a {{[redacted]}} lower truck rate. Dup. Op. Narr. II-B-81. The difference is attributable to two NS errors. First, NS calculated the fuel surcharge only as a percent of the mileage scale rate when it also should have included the {{[redacted]}} flat charge. Second, NS uses a 4.4 truck-to-rail ratio whereas DuPont used a 4.5 ratio. For all commodities, DuPont rounded the average truck volumes to the nearest half truck. DuPont's methodology is conservative because, in the real world, a partial truck load would be charged the same rate as a full truck. It would have been more appropriate for DuPont to have rounded up to the

First, NS ignores the fact that the lower truck rate is the result of very recent and sizeable NS rate increases. In 2010, NS increased its rate by {[redacted]}, and in 2011, it increased the rate by an additional {[redacted]} for a cumulative two-year rate increase of {[redacted]}. Dup. Op. Narr. II-B-81, Dup. Op Ex II-B-3. In contrast, over that same time frame, the connecting carrier on this route, CSXT, raised its rate cumulatively by {{[redacted]}}, which illustrates the degree to which NS has exerted its market power. After NS has increased its rate over such a short period and by such substantial amounts, it is not surprising that NS's ability to raise its rate any further might appear to be constrained. But, it is fundamentally illogical for market dominance to exist only until a railroad actually exercises that dominance. Therefore, NS's claim that its alternative truck rate is an effective competitive constraint simply is not credible.

Second, NS glosses over the absurdity of a truck rate that is {{[redacted]}} lower than the rail rate on a 411 mile movement. As demonstrated in the preceding paragraph, that differential is attributable to recent NS rate increases, not those of the connecting carrier. NS makes no attempt to address this absurdity, since truck costs are higher than rail costs as distance increases

Finally, NS has not factored in the additional infrastructure that DuPont must build at Belle in order to increase both its truck fleet and its truck loading capacity {{[redacted]}}. NS Reply WP "DuPont Dimethyl Ether Truck Shipments.xls."

Lane B-120 (Belle to Divine, IL): This gateway rate from Belle to Pine, IN applies only to Lane B-120. NS contends that a {{[redacted]}} lower direct truck rate for this 498 mile movement constitutes effective competition.[169] NS Reply II-B-161 There are multiple flaws in NS's logic.

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nearest whole truck Therefore, the DuPont rate estimate is closer to reality than the NS estimate, although both are below the true cost

[169] DuPont has calculated a {{[redacted]}} lower truck rate Dup Op Narr II-B-81. The difference is attributable to two NS errors First, NS calculated the fuel surcharge only as a percent of the mileage scale rate when it also should have included the {{[redacted]}}

First, NS ignores the fact that the lower truck rate is the result of very recent and sizeable NS rate increases. Over two years from 2010 to 2011, NS increased its rate by {{ }}. Dup. Op. Narr. II-B-81, Dup Op Ex. II-B-3. In contrast, over that same time frame, the connecting carrier on this route, CN, raised its rate cumulatively by {{ }}, which illustrates the degree to which NS has exerted its market power. After NS has increased its rate over such a short period and by such substantial amounts, it is not surprising that NS's ability to raise its rate any further might appear to be constrained. But, it is fundamentally illogical for market dominance to exist only until a railroad actually exercises that dominance. Therefore, NS's claim that its alternative truck rate is an effective competitive constraint simply is not credible.

Second, NS glosses over the absurdity of a truck rate that is {{ }} lower than the rail rate on a 498 mile movement. As demonstrated in the preceding paragraph, that differential is attributable to recent NS rate increases, not those of the connecting carrier. NS makes no attempt to address this absurdity, except to inaccurately assert that DuPont shipped {{ }} trucks on this lane in 2010. NS Reply II-B-161. NS's own work paper shows that, from 2006 to 2010, DuPont shipped just {{ }} trucks and that they were within a five day period in 2009, not 2010. NS Reply WP "DuPont Dimethyl Ether Truck Shipments.xls."[170] This fact exemplifies how few and far between such long distance truck shipments are, and the exceptional circumstances in which they occur, because truck costs are higher than rail costs as distance increases.

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flat charge. Second, NS uses a 4.4 truck-to-rail ratio whereas DuPont used a 4.5 ratio. For all commodities, DuPont rounded the average truck volumes to the nearest half truck. DuPont's methodology is conservative because, in the real world, a partial truck load would be charged the same rate as a full truck. It would have been more appropriate for DuPont to have rounded up to the nearest whole truck. Therefore, the DuPont rate estimate is closer to reality than the NS estimate although both are below the true cost.

[170] NS incorrectly counts a non-linehaul record. Because each shipment is subject to only one linehaul bill, but may also be *subject to other types of bills, only linehaul records should be counted.* See Dup. Op. WP "DME Truck Shipments.xls." "Notes" worksheet, in the "DME" folder (explaining adjustments that DuPont made to remove inaccurate and duplicate records).

Finally, NS has not factored in the additional infrastructure that DuPont must build at Belle in order to increase both its truck fleet and its truck loading capacity.

i. Dimethyl Formamide[171]

In its Opening Evidence, DuPont challenged three NS rates for transporting Dimethyl Formamide ("DMF") from Belle, WV to five destinations.[172] NS, in its Reply Evidence, has contested market dominance over just a single issue movement, Lane B-35, which is a gateway rate from Belle to the East St. Louis interchange with UP, which delivers the DMF to South Coast Terminal in Strang, TX. Although Lanes B-4 and -21 concern the same challenged rate to the same interchange, NS has not contested its market dominance over those movements.

NS contends that a {{ }} direct truck rate for this 1165-mile movement constitutes effective competition. NS Reply II-B-179. This argument is seriously flawed both factually and logically.

Factually, NS has not calculated an even remotely accurate truck rate. DuPont's Opening Evidence, at page II-B-88, showed that the direct truck rate is {{ }}.[173] Although DuPont used a rate from Miller Transporters and NS used Quality Carriers, that does not appear to explain the difference because both contracts contain the same mileage scale of {{ }} and both DuPont and NS have used the same mileage.[174] NS, however, has used a mileage scale of {{ }}, which is a zone rate from the Quality contract.[175] But the contract states that this zone rate is applicable only for

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[171] The evidence and testimony in this section is jointly sponsored by Mary Pileggi, Logistics Manager-NA Region, and Jeff Jirak, Global Business Manager Methylamines.

[172] There are just three rates for five movements because three movements are NS bottleneck segments from the same origin to the same rail interchange point.

[173] This DuPont rate itself is conservatively understated. Both DuPont and NS used a 1.5 truck-to-rail ratio to calculate the rail equivalent truck costs. But DuPont pays the same truck rate for full and partial loads. Therefore, it would be more accurate to round up to 5 trucks in order to calculate the full cost of trucking the same volume as a single rail car.

[174] NS Reply WP "0059266.xls," "1st Revised Page 33" worksheet, in the "DuPont Trucking Contracts" folder, "Quality Carriers" subfolder ({{ }}).

[175] Id. "3rd Revised Page 32" worksheet ({{ }}). Although NS claims that DuPont has a point-to-point rate for this lane, there is no such rate in this contract. See NS Reply WP "DuPont Point to Point Contract Rates.xls." The only point-to-point rates in this contract that apply to DMF are on the "12th Revised Page 28" worksheet of NS Reply WP.

"reloadable shipments," which means that a trailer must be in the area and have back-haul capability, which is very rare [176] In contrast, the mileage scale rate used by DuPont applies to "dedicated" trailers, which is the appropriate service for this movement.[177] This rate calculation error by NS completely destroys its claim that a {{ }} truck rate demonstrates effective competition for Lane B-35.

Logically, even if the NS truck rate were accurate, it would be absurd to conclude that a {{ }} truck rate on a 1165-mile movement is an effective competitive constraint. Truck transportation clearly is a higher cost service at such long distances, because it requires more equipment, personnel, and fuel to transport the same volume as rail transportation This distance also is well beyond any range that trucks have ever been considered to be competitive with rail See Dup. Op. Narr. I-28 n 28

The fact that this would not constitute an effective competitive constraint is demonstrated by a cumulative two-year NS rate increase of { } in 2010 and 2011 Dup. Op. Ex. II-B-3. In contrast, over that same time frame, the connecting carrier on this route, UP, raised its rates by {{ }}, which illustrates the degree to which NS has exerted its market power. Therefore, NS's claim that the truck rate is an effective competitive constraint simply is not credible

Although NS claims that such a dramatic rate increase was "{ }," that cannot explain the full magnitude of this rate increase.[178] NS alleges that DuPont's legacy contract that expired in 2009 {

"0059266 xls." in the "DuPont Trucking Contracts" folder, "Quality Carriers" subfolder, and they apply only to California, not Texas

[176] NS Reply WP "0059266.xls," "3rd Revised Page 32" worksheet, in the "DuPont Trucking Contracts" folder, "Quality Carriers" subfolder

[177] Id., "1st Revised Page 33" worksheet.

[178] NS Reply II-B-92

[redacted].[179] This translates to a 46.8% increase in the contract rates over that time.[180] But during that same time NS's variable costs for transporting DMF increased by 57.4%, which would justify only a 7.2% post-contract rate increase.[181] Thus, the expired legacy contract can only explain an extremely small fraction of the NS rate increase.

[179] Id. at II-B-92 to -93.

[180] Dup. Reb. Ex. II-B-1, at 1.

[181] Dup. Reb. Ex. II-B-1, Attachment 1, columns (8), (9).

j. Dimethyl Sulfate[182]

In its Opening Evidence, DuPont challenged two NS rates for Dimethyl Sulfate ("DMS") from Belle, WV to three destinations.[183] NS, in its Reply Evidence, has contested market dominance over just a single issue movement, Lane B-20, from Belle to Janesville, WI. The challenged rate is a gateway rate to an interchange with UP at Chicago. Although Lane B-27 concerns the same challenged rate to the same interchange, NS has not contested its market dominance over that movement

DMS is a TIH commodity Nowhere in its Reply Evidence does NS acknowledge this fact. NS only recognizes that DMS is a DOT Hazard Class 6 1 "poisonous material." NS Reply II-B-179. But the "poisonous" label also applies to many non-TIH commodities, such as aniline oil, which is another case commodity. NS clearly does not want to remind the Board that it is proposing that DuPont truck DMS 579 miles over public highways solely to get a lower rate for Lane B-20

NS contends that a {{[redacted]}} lower direct truck rate for this 579-mile movement constitutes effective competition.[184] NS Reply II-B-180 to -181 But, NS ignores the fact that the lower truck rate is the result of very recent and sizeable NS rate increases. In 2010, NS increased its rate by {[redacted]}, and in 2011, it increased the rate by an additional {[redacted]} for a cumulative two year rate increase of {[redacted]} Dup Op Narr. II-B-96; Dup. Op Ex. II-B-3. In contrast, over that same time frame, the connecting carrier on this route, UP, raised its rates by

[182] The evidence and testimony in this section is jointly sponsored by Mary Pileggi, Logistics Manager-NA Region, and Jeff Jirak, Global Business Manager Methylamines.

[183] There are just two rates for three movements because two of the movements are NS bottleneck segments from the same origin to the same interchange point

[184] DuPont has calculated a {{[redacted]}} lower truck rate on the same carrier. Dup Op Ex II-B-1. The difference appears to be attributable to NS using the contract's mileage rate scale, even though this contract has a point-to-point rate, which DuPont used Point-to-point rates take precedence over mileage scale rates Therefore, the DuPont rate is correct. Furthermore, both the DuPont and NS rates are in fact understated because they are based upon a 4 5 truck-to-rail ratio DuPont still must pay the same full truck rate even for partial loads

{{[redacted]}}, respectively, which illustrates the degree to which NS has exerted its market power. After NS has increased its rate over such a short period and by such substantial amounts, it is not surprising that NS's ability to raise its rate any further might appear to be constrained. But, it is fundamentally illogical for market dominance to exist only until a railroad actually exercises that dominance. Therefore, NS's claim that its alternative truck rate is an effective competitive constraint simply is not credible

Although NS claims that such a dramatic rate increase was "{[redacted]}," that cannot explain the full magnitude of this rate increase.[185] NS alleges that DuPont's legacy contract that expired in 2009 {[redacted]}.[186] This translates to a 46.8% increase in the contract rates over that time.[187] But during that same time NS's variable costs for transporting DMS increased by 52.5%, which would justify only a 3.9% post-contract rate increase.[188] This does not come close to explaining a {[redacted]} rate increase.

NS also ignores the absurdity of a truck rate that is {{[redacted]}} lower than the rail rate on a 579-mile movement. As demonstrated in the preceding paragraph, that differential is attributable to recent NS rate increases, not those of the connecting carrier. Truck transportation clearly is a higher-cost service at such long distances, because it requires more equipment, personnel, and fuel to transport the same volume as rail transportation. This distance also is beyond any range that trucks have ever been considered to be competitive with rail See Dup. Op. Narr. I-28 n.28.

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[185] NS Reply II-H-92

[186] Id. at II-B-92 to -93.

[187] Dup. Reb. Ex. II-B-1, at 1

[188] Dup. Reb. Ex. II-B-1, Attachment 1, columns (8), (9)

NS attempts to counter the foregoing facts with evidence that DuPont can and does transport some DMS by trucks. NS Reply II-B-179 to -180. But, NS must do more than simply count the number of truck shipments Market Dominance Determinations, at 133, states that a relevant factor is the amount of trucks "where rail alternatives are available." Of DuPont's {{[redacted]}} truck shipments of DMS over the five year period from 2006-10, {{[redacted]}}, or 85%, were to locations without rail access, and another {{[redacted]}} were moves to repair/cleaning shops [189] Thus, DuPont clearly ships very little DMS to rail-served destinations, which is consistent with its claims that trucks are used to primarily to serve non-rail customers and to serve rail customers over short distances, for small volumes, or when expedited transportation is needed.

NS also incorrectly contends that DuPont's customer on Lane B-20, Evonik, received {{[redacted]}} trucks of DMS from DuPont from 2006-10. NS Reply II-B-180 to -181. In fact, Evonik only received {{[redacted]}} trucks during this 5 year period [190] According to NS Reply Exhibit II-B-5, over a 4½ year period from 2008 through June 2012, Evonik received {[redacted]} rail cars of DMS from DuPont At 4.5 trucks per rail car, this would equate to {[redacted]} trucks This suggests that Evonik receives about {{[redacted]}} of its DMS by truck, which is consistent with the use of trucks primarily for smaller volume and expedited shipments.

[189] Dup Reb. WP "DuPont Dimethyl Sulfate Truck Shipments-Rebuttal xlsx," "Rail Capability" and "Repair Counts" worksheets NS's truck shipment counts are incorrect because NS fails to account for duplicate invoice records and the different types of billing records in the data To obtain an accurate count of truck shipments using DuPont's truck bill records, it is necessary to filter the records to show only linehaul bill types (each shipment is the subject of only one linehaul bill, but may be the subject of multiple balance due bills or other bills) and remove linehaul records containing a duplicate document number (a document number is associated with only one shipment) See Dup Op WP "DMS Truck Shipments xls," "Notes" worksheet, in the "DMS" folder (explaining adjustments that DuPont made to remove inaccurate and duplicate records) A corrected version of the NS reply workpaper is included as DuPont Rebuttal Workpaper "DuPont Dimethyl Sulfate Truck Shipments-Rebuttal xlsx," and contains an "Adjustments" worksheet that identifies all adjustments that DuPont made to the data in the workpaper Unless otherwise indicated, this workpaper is the source of all truck counts in this section

[190] Dup Reb. WP DuPont Dimethyl Sulfate Truck Shipments-Rebuttal xlsx," "Evonik" worksheet. In addition to other counting errors, NS erroneously counted an additional {{[redacted]}} trucks that DuPont also shipped to Janesville, but to a different customer, Abitec, which does not have rail service.

k. Lime[191]

In its Opening Evidence, DuPont challenged a single NS rate for transporting lime on Lane B-96, which is a joint-line movement from Danville, VA to Ampthill, VA. The NS rate applied to the Danville to Petersburg, VA segment of the movement NS, in its Reply Evidence, has contested market dominance over this lane, claiming that {{ }} direct truck transportation constitutes effective competition.[192]

NS ignores the significant storage costs that accompany the use of trucks to ship lime from Danville to Ampthill. As DuPont noted on page II-B-100, it keeps {{ }} of inventory constantly stored in a dedicated fleet of {{ }} railcars that currently operate in rotation on this lane. If DuPont shifts a portion of this rail traffic to truck, it would also have to shift a portion this storage to truck trailers, which NS does not dispute. Although NS claims that "DuPont fails to demonstrate that [storing lime in tank truck trailers] would be economically infeasible, or even that it would cost more to use trucks for storage instead of railcars."[193] DuPont stated in its Opening evidence narrative that it would cost {{ }} per month to lease each trailer needed for storage and that it owns outright the railcars currently used for storage.[194] That is, DuPont essentially enjoys free storage by storing lime in its railcars, and switching to trucks would require DuPont to incur a substantial monthly expense, without any railcar savings to provide an offset. This expense would exist, without offset, regardless whether DuPont could repurpose its rail cars. NS's failure to account for the cost of truck storage undermines its claim that trucking is a lower cost option than rail.

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[191] The evidence and testimony in this section is jointly sponsored by Mary Pileggi, Logistics Manager-NA Region, and Michael Faciszewski, Contract Manufacturing Manager

[192] NS Reply II-B-182, NS Reply Ex. II-B-2

[193] NS Reply II-B-182

[194] Dup. Op Narr. II-B-100

Also, NS's assertion that DuPont has access to the tank truck trailers needed to transport lime by direct truck over this lane is baseless.[195] Currently, DuPont has access to only {{ }}.[196] Given that NS transported {{ }} carloads of lime on this lane in 2011, DuPont will need to acquire a significant number of additional trailers to shift a material amount of the lane volumes to truck. Also, NS has not indicated whether {{ }}, the carriers that NS claims provide effective competition, have any equipment available to transport the lime on this lane. Nor does NS account for the demurrage costs if DuPont were to store the lime in the carriers' equipment rather than purchase or lease the equipment itself.

NS also confuses the type of lime shipped on this lane with all types of lime, resulting in serious misrepresentations of DuPont's ability to use direct truck transportation. As DuPont indicated on page II-B-98 of its Opening evidence narrative, {{ }}

Accordingly, NS's claim that DuPont trucked {{ }} truckloads of lime, of any type, from 2006 through 2010[198] seriously misstates DuPont's ability to truck lime on this lane. Indeed, DuPont has only trucked {{ }} shipments of this type of lime from 2006 through

[195] See NS Reply II-B-182

[196] Dup Op Narr II-B-99.

[197] Dup. Op Narr II-B-98.

[198] NS Reply II-B-181

2010, of which only {{ }} were on this lane.[199] The other {{ }} shipments were export shipments to the port of Portsmouth, VA.[200] These export shipments should be excluded from the market dominance analysis because they involve only super sack shipments of the case-lane lime.[201] Ampthill is not equipped to receive super-sack shipments.[202] and the NS rate applies to only bulk shipments.

Likewise, NS's statement that DuPont's Ampthill facility "{{ }}"[203] during the period from 2006 through 2010 misstates DuPont's ability to receive the case-lane lime at Ampthill. Only {{ }} of the truck shipments were of the case-lane lime from Danville.[204]

By conflating the super-sack and bulk-truck shipments from Danville facility, NS also glosses over important constraints on the facility's ability to load the case-lane lime into trucks As explained on page II-B-99 of DuPont's Opening Evidence, the facility is not designed for loading bulk trucks. Indeed, bulk trucks must be loaded at the railcar loading spot, which requires them to maneuver backward through narrow alleyways to get there.[205] Also, as DuPont explained on pages II-B-98 and -99 of its Opening Evidence, {{ }}

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[199] DuPont Rebuttal Workpaper "DuPont Lime Truck Shipments-Rebuttal," "Danville" worksheet NS's truck counts fail to account for duplicate invoice records and the different types of billing records in the data To obtain an accurate count of truck shipments using DuPont's truck bill records, it is necessary to filter the records to show only linehaul bill types (each shipment is the subject of only one linehaul bill, but may be the subject of multiple balance due bills or other bills) and remove linehaul records containing a duplicate document number (a document number is associated with only one shipment) See Dup Op. WP "Lime Truck Shipments xls," "Notes" worksheet, in the Lime" folder (explaining adjustments that DuPont made to remove inaccurate and duplicate records) A corrected version of the NS reply workpaper is included as DuPont Rebuttal Workpaper "DuPont Lime Truck Shipments-Rebuttal.xlsx," and contains an "Adjustments" worksheet that identifies all adjustments that DuPont made to the data in the workpaper

[200] Id.

[201] Dup Op Narr II-B-99

[202] Dup Op Narr II-B-100.

[203] NS Reply II-B-181

[204] Dup Reb WP "DuPont Lime Truck Shipment-Rebuttal," "Ampthill" worksheet

[205] Dup Op Narr II-B-99.

[redacted]}}.[206] This cannot be guaranteed when loading trucks. Thus, the Danville facility's ability to load bulk trucks is extremely constrained. NS fails to account for this when asserting that trucking is practical.

Also, just because DuPont has shipped some of the case-lane lime by bulk truck on limited occasions in the past does not say anything about its ability to ship significant amounts of this lime by truck as the primary mode of transportation. From 2008 through 2010, DuPont shipped just {{[redacted]}} truckloads of this lime from Danville to Ampthill.[207] Over the same period, it shipped {[redacted]} railcars of the lime on this lane.[208] Thus, NS transported {{[redacted]}} of the lime traffic travelling between Danville and Ampthill.[209] Given that NS transports such a dominant share of the traffic between Danville and Ampthill, NS's claim that its rate is constrained by the ability of DuPont to shift a substantial volume of this traffic to trucks is simply not credible.

Finally, NS suggests a direct truck alternative that violates DMIR. Under DMIR, direct trucking to the final destination is not an alternative where the challenged rate only applies to an interchange. See supra Part I.A.2.g

[206] Indeed, the lime must be {{[redacted]}}

[207] Dup. Reb. WP "DuPont Lime Truck Shipments-Rebuttal," "Danville" worksheet

[208] NS Reply Ex. II-B-5

[209] DuPont uses a conversion factor of 4 to convert railcars of lime to truckloads

I. Methylamines, Anhydrous[210]

In its Opening Evidence, DuPont challenged 8 NS rates for transporting Anhydrous Methylamines ("AHM")[211] from Belle, WV to 19 destinations.[212] NS, in its Reply Evidence, has contested market dominance over 7 rates to the following 16 destinations [213]

Table II-B-7
Contested Anhydrous Methylamines Lanes

Lane #	Origin	Interchange	Destination	Customer
A-9	Belle, WV	NS-Direct	Wyandotte, MI	Taminco
B-6	Belle, WV	E. St. Louis, IL	Cadet, MO	Buckman Labs
B-10	Belle, WV	E. St. Louis, IL	Youens (Conroe), TX	Huntsman
B-11	Belle, WV	E. St. Louis, IL	Corsicana, TX	Corsicana Technologies
B-14	Belle, WV	E. St. Louis, IL	Ethyl, AR	Albemarle
B-18	Belle, WV	New Orleans, LA	Garyville, LA	Nalco Company
B-19	Belle, WV	New Orleans, LA	Geismar, LA	BASF
B-32	Belle, WV	New Orleans, LA	St. Gabriel, LA	Taminco
B-36	Belle, WV	E. St. Louis, IL	Strang, TX	DuPont (internal movement)
B-39	Belle, WV	E. St. Louis, IL	Texas City, TX	Int'l Specialty Products
B-40	Belle, WV	E. St. Louis, IL	Verona, MO	BCP Ingredients
B-41	Belle, WV	Kansas City, MO	W. Memphis, AR	BASF
B-43	Belle, WV	E. St. Louis, IL	Wichita, KS	Air Products
B-90	Belle, WV	Atlanta, GA	Port Bienville, MS	Polychemie, Inc
B-91	Belle, WV	Cincinnati, OH	Theodore, AL	SKW Quab Chemicals
B-121	Belle, WV	Logansport, IN	Mapleton, IL	Lonza, Inc.

The NS Reply Evidence, at pages II-B-142 to -151, is the epitome of NS's overarching theme that, if a truck has ever been used to transport a commodity at any time, over any distance, and between any two points, then trucks must be an effective competitive constraint for the issue movement, so long as the transportation cost is not more than 20% above the challenged rail rate

[210] The evidence and testimony in this section is jointly sponsored by Mary Pileggi, Logistics Manager-NA Region, and Jeff Jirak, Global Business Manager Methylamines.

[211] DuPont collectively refers to anhydrous monomethylamine ("MMA"), anhydrous dimethylamine ("DMA") and anhydrous trimethylamine ("TMA") as "AHMs"

[212] Although there are 19 lanes, there are only eight challenged rates because the NS segment for many of the movements is from the same origin to the same interchange point

[213] NS has not contested market dominance over lanes B-5, -15 and -24, which are covered by the same rate from Belle, WV to the Chicago, IL interchange

In the case of AHMs, the facts shine an especially glaring spotlight on the absurdity of NS's position and how the NS argument is inconsistent with the market dominance guidelines in Market Dominance Determinations

NS has failed to properly apply the market dominance guidelines Those guidelines consider, among other factors, both the amount of the product in question that is transported by motor carrier where rail alternatives are available, and the amount of the product that is transported by motor carrier under transportation circumstances similar to rail Market Dominance Determinations, 365 I.C.C at 133. The largest proportion of AHM shipments transported by truck in any single year from 2006-10 was just 15%, which occurred in 2010 when DuPont experienced a 23% spike in truck shipments due to four separate *force majeure* events that required DuPont to supply its customers on a just-in-time basis with truck service to prevent shutdowns at their facilities due to a lack of AHM Dup. Op. Narr. II-B-104 to -105. Furthermore, half of those truck shipments went to a single customer without any rail access Id. Indeed, of DuPont's {{ }} AHM truck shipments from 2006-10, {{ }} of them went to destinations where rail service was not available, which accounts for 88% of the total.[214] Therefore, the overwhelming majority of DuPont's AHM truck shipments were delivered to customers without access to rail service or occurred under emergency conditions that required expedited service to a rail-served customer. NS has completely ignored those very important and highly relevant facts.

NS instead contends that trucks provide effective competition because "DuPont has transported a substantial amount of methylamines via truck." NS Reply II-B-143. There are several problems with this contention.

[214] Dup. Reb. WP "DuPont Methylamine Anhydrous Truck Shipments-Rebuttal xlsx," "Rail Capability" worksheet

First, NS has incorrectly counted the number of AHM truck shipments. NS includes Aqueous Methylamines ("AQM") in its truck count, although AQM is a different issue commodity.[215] See Part II B.2.m. Furthermore, NS has over-counted even the number of AHM trucks. Over the 5-year period from 2006-10, NS claims that DuPont shipped {{[redacted]}} trucks of MMA, {{[redacted]}} trucks of DMA, and {{[redacted]}} trucks of TMA, for a total of {{[redacted]}} AHM trucks. NS Reply II-B-143. In reality, DuPont shipped {{[redacted]}} trucks of MMA, {{[redacted]}} trucks of DMA, and {{[redacted]}} trucks of TMA, for a total of {{[redacted]}}, which is 19% fewer trucks than NS claims DuPont shipped.[216]

Second, the truck totals provided by NS are aggregated over a 5-year period in order to appear larger than they really are. They average just one truck per day over the entire five year period. This is hardly a substantial number of truck shipments. According to NS Reply Exhibit II-B-5, the contested AHM movements alone have averaged one rail car per day over the past 5 years, which would require DuPont to quadruple the total number of all its truck shipments in order to convert just the issue rail traffic to trucks.[217]

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[215] AQM is a heavily diluted form of AHM, which requires several more trucks to transport the same quantity as undiluted AHM. AQMs also do not require the special pressurized trailers that are needed to transport AHMs. See Dup Op Ev II-B-114 to -115, NS Reply II-B-166.

[216] Dup Reb, WP - "DuPont Methylamine Anhydrous Truck Shipments-Rebuttal.xlsx," "Truck Counts" worksheet. DuPont attributes this error to NS's failure to account for duplicate invoice records and the different types of billing records in the data. To obtain an accurate count of truck shipments using DuPont's truck bill records, it is necessary to filter the records to show only linehaul bill types (each shipment is the subject of only one linehaul bill, but may be the subject of multiple balance due bills or other bills) and remove linehaul records containing a duplicate document number (a document number is associated with only one shipment). See Dup Op WP "AHM Truck Shipments.xls," "Notes" worksheet, in the "AHMs" folder (explaining adjustments that DuPont made to remove inaccurate and duplicate records). A corrected version of the NS reply workpaper is included as DuPont Rebuttal Workpaper "DuPont Methylamine Anhydrous Truck Shipments-Rebuttal.xlsx," and contains an "Adjustments" worksheet that identifies all adjustments that DuPont made to the data in the workpaper. Even these counts are overstated because they include "Isotank" shipments, which are not comparable to tank truck shipments, and equipment shipments to maintenance facilities. Dup Reb WP "DuPont Methylamine Anhydrous Truck Shipments-Rebuttal.xlsx," "Truck Counts" worksheet (not filtered for Isotanks or shipments to {{[redacted]}}, which is the maintenance facility. NS included these shipments in its truck count.

[217] NS has submitted a "Corrected" version of Reply Ex. II-B-5 that deletes 2007 data because the NS data source undercounted rail cars in that year. See NS Reply Errata (filed Jan. 25, 2013). Therefore, the increase in truck shipments could be even greater than stated in the above text.

Third, the aggregated truck count cited by NS reveals nothing about the issue movements. In fact, only 5 of the 16 contested AHM movements received even a single truck from 2007-10 [218] Lane B-6 received just {{[redacted]}} trucks compared with {[redacted]} rail cars; Lane B-14 received {{[redacted]}} trucks compared with {[redacted]} rail cars; Lane B-39 received {{[redacted]}} trucks compared with {[redacted]} rail cars; Lane B-90 received {{[redacted]}} trucks compared with {[redacted]} rail cars,[219] and Lane B-91 received {{[redacted]}} trucks compared with {[redacted]} rail cars.[220] At a ratio of 4 trucks per rail car, the lane with the highest proportion of truck shipments is Lane B-6 at just {{[redacted]}} As DuPont explained at page II-B-108 of its Opening Evidence, AHM poses significant safety, health, and environmental issues. For all of those reasons, DuPont's rail-served customers do not want trucks, and they are far more likely to switch to a supplier who will deliver AHM by rail than to accept truck shipments from DuPont. The small proportion of truck shipments on just a third of the issue movements (the other two-thirds received zero trucks) is consistent with a commodity that is trucked only short distances, in less than rail car volumes, when expedited delivery is needed, or when rail service is unavailable

NS tacitly has recognized that it must consider distances when evaluating whether motor carrier transportation occurs under transportation circumstances similar to rail. The highway

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[218] The customer in a sixth lane, B-11, receives DMA only by truck because it purchases DMA in smaller volumes, and thus DMA is not the issue movement The issue movement is TMA, which has never moved in even a single truck shipment Therefore, DuPont has not included Lane B-11 among the issue AHM movements that have received a truck shipment from 2007-10.

[219] NS has grossly undercounted the number of rail cars in Lane B-90 For example, NS only counts {[redacted]} rail cars each in 2009 and 2010.NS Reply Ex. II-B-5, even though the NS traffic tapes show {[redacted]} rail cars, respectively, Dup. Reb WP "Comparison of NS Waybill Data and NS Reply Exhibit II-B-5 pdf" Similar but less dramatic discrepancies (*e g* 1-6 rail cars per year) have also been identified in the rail car counts for Lanes B-6, -10, -14, -32, -36, -40 and -41 Although NS may have made similar misrepresentations for other years, it has not produced traffic data for those years that would enable DuPont to verify its figures

[220] Compare Dup Reb. WP "DuPont Methylamine Anhydrous Truck Shipments-Rebuttal xlsx." "Lane Counts" worksheet with NS Reply Ex II-B-5 DuPont has compared truck and rail shipments in calendar years 2007-10 because those are the years for which these two data sources overlap The truck shipments cover calendar years 2006-10, whereas the rail shipments cover calendar years 2007-June 2012. Although NS has submitted a "Corrected" version of Reply Ex II-B-5 that deletes 2007 data because it undercounted rail cars, this means that the proportion of trucks to rail cars could be even less See NS Reply Errata (filed Jan 25, 2013).

distances for all but one of the contested AHM movements ranges from 520 miles to 1233 miles, with half of those over 900 miles long.[221] These are clearly distances well beyond the range within which trucks historically have been deemed competitive. See Dup Op Narr. I-28 n 28 NS, however, suggests that the Board should ignore these long distances because DuPont itself has trucked AHM over similar distances. NS Reply II-B-143 But, the flaw in this argument is the absence of any evidence that DuPont has shipped AHM such long distances by truck to any rail-served location on a routine basis. An isolated truck shipment over a long distance route that is regularly served by rail exemplifies the fact that trucks are used only as an exception, when absolutely necessary.

NS casually dismisses DuPont's evidence of equipment and infrastructure constraints on the expanded use of trucks to transport AHM. Although special pressurized trailers are required to transport AHM by truck, NS baldly proclaims that "DuPont has access to the appropriate equipment." NS Reply II-B-143 to -144. As DuPont testified in its Opening Evidence, at page II-B-105, it has just 12 trailers for AHM shipments and it does not use trailers provided by commercial carriers Second, NS claims that the Sentinel terminal at Belle maintains the necessary equipment. NS Reply II-B-144. But the cited work paper, NS Reply WP "Sentinel Charleston, WV Terminal Scope of Work," states that "{{[redacted]}} Sentinel does not provide any trailers for AHM transportation. Furthermore, that very same work paper states that "{{[redacted]}}" Because those are all customers who receive only truck deliveries, DuPont would have to remove capacity from them in order to convert any of the issue movements from rail to truck; DuPont

[221] See Dup Op Ex II-B-1; Dup Op Narr. II-B-105

also would jeopardize its ability to truck emergency shipments to rail-served customers. Finally, NS asserts that DuPont has used other carriers besides Sentinel for AHM truck shipments. Id. Although it is true that DuPont occasionally uses commercial carrier tractors and drivers for AHM shipments, it does so only in very limited circumstances, and it never uses trailers provided by commercial carriers [222] Dup Op. Narr. II-B-105. Thus, DuPont in fact would have to purchase {{ }} additional trailers, at a cost of {{ }} each, in order to convert the issue movements from rail to truck transportation. Id. at II-B-109.

Even more costly, however, DuPont would need to build an additional truck loading rack for AHMs, including a truck scale and concrete pads, at a cost of approximately {{ }}, and hire at least 5 additional personnel at an annual cost of {{ }} per person. Id NS applies faulty logic and poor math to discount this claim. Specifically, NS claims that over { } of the issue lane movement volumes could be converted to truck without additional infrastructure, and that, since it is not necessary to convert 100% of the volume in order to exert competitive pressure, this would be adequate. NS Reply II-B-144 to -145 The reality is that, at best, DuPont might be able to convert a third of the issue rail volume to trucks, if DuPont operated its existing truck loading rack 24/7 all year round and it could control when its customers require AHM deliveries. Those are major qualifiers that would occur only in an ideal world.

For its calculations, NS has accepted DuPont's evidence that the existing truck loading rack is used for both AHM and DME truck loading, which is another issue commodity, and that the rack has the capacity to load the equivalent volume of one rail car in 24 hours (*e g* 4-5

[222] DuPont uses Sentinel for nearly all AHM movements, because Sentinel drivers are specially qualified to unload AHM trucks DuPont may use commercial carriers in the following situations that do not require the carrier to unload the AHM (1) export shipments in isotanks, because the entire loaded tank is lifted from the trailer onto the ocean vessel, (2) shipments to Moses Lake, WA, because the customer unloads the trucks, and (3) relay transportation, where DuPont will use a commercial carrier from Belle, when Sentinel trucks are not available at Belle, to an interchange location at a Sentinel terminal near the destination, and Sentinel delivers and unloads the truck at the destination

trucks) NS calculates that the average annual number of AHM and DME rail car shipments for the issue movements is {[redacted]}, of which 75% could be handled by DuPont's existing truck loading rack. But as DuPont demonstrates in note 219, above, NS has significantly understated the total number of AHM rail shipments by at least {[redacted]} rail cars annually and probably more At a ratio of 4 trucks per rail car, {[redacted]} rail cars annually would require at least {[redacted]} additional trucks per day NS also proposes to increase DME truck shipments from the same loading rack by {[redacted]} trucks per year, or approximately {[redacted]} per day. NS Reply II-B-158. Thus, the total increase in truck shipments would be {[redacted]} per day at a loading rack that only has the capacity to load four trucks per day.

Furthermore, this does not account for the trucks that already are consuming existing loading rack capacity According to NS's own evidence at page II-B-143 and -158, DuPont loaded {{[redacted]}} trucks with AHM from 2006-10 (excluding the AQM shipments that NS improperly counted) and {{[redacted]}} trucks of DME, which is an average of {{[redacted]}} trucks per year, or 1 2 trucks per day, every day of the year. Thus, at most, there is capacity to load only 3 of the {[redacted]} additional trucks that NS has proposed DuPont could handle without any additional infrastructure. Furthermore, this is based upon the highly unrealistic and impractical assumption that DuPont could spread these truck shipments evenly across the entire year and operate the truck rack 24/7 all year round. The reality would be much less

Finally, in the discussion of the individual AHM issue movements below, DuPont points to dramatic NS rate increases that range from 34%-190% over a brief 2-year period, from 2009-11, as evidence of the exercise of NS market power. Although NS claims that such dramatic rate increases were "{[redacted]}."

that cannot explain the full magnitude of these rate increases.[223] NS alleges that DuPont's legacy contract that expired in 2009 {[redacted]} [224] This translates to a 46 8% increase in the contract rates over that time.[225] But during that same time NS's variable costs for transporting AHMs increased by 54.6%, which would justify only a 5 3% post-contract rate increase [226]

The remainder of this section responds to the NS Reply Evidence as to each of the 16 contested AHM lanes

Lane A-9 (Belle to Wyandotte, MI): This is a single line rate. NS contends that a {{[redacted]}} lower truck rate for this 344 mile movement constitutes effective competition [227] NS Reply II-B-145 NS, however, ignores the fact that this rate differential is attributable solely to very recent and sizeable NS rate increases. In 2010, NS increased its rate by {[redacted]}, and in 2011, it increased the rate by an additional {[redacted]} for a cumulative two year rate increase of {[redacted]} Dup. Reb. Ex II-B-2.[228] {{[redacted]}}. After NS has increased its rate over such a short period and by such substantial amounts, it is not surprising that NS's ability to raise its rate any further might appear to be constrained. But, it is fundamentally illogical for market dominance to exist only until a railroad actually exercises that dominance. Therefore, NS's claim that its alternative truck rate is an effective competitive constraint simply is not credible

[223] NS Reply II-B-92

[224] Id. at II-B-92 to -93

[225] Dup Reb Ex. II-B-1, at 1.

[226] Dup Reb Ex II-B-1, Attachment 1, columns (8), (9)

[227] DuPont has calculated a {{[redacted]}} lower truck rate Dup Op Narr II-B-106 The difference is attributable to NS incorrectly applying the fuel surcharge to just the mileage-based rate, when it should have applied the fuel surcharge to the sum of the mileage-based rate plus the {{[redacted]}} flat fee

[228] In preparing its Rebuttal Evidence, DuPont discovered an error in the Excel formula it used to calculate the change in the NS rate for the Exhibit A case lanes in Dup Op Ex. II-B-3 Instead of calculating the cumulative rate change from 2009-2011, the formula calculated the cumulative change from 2007-2011. Although NS did not note this error in its Reply Evidence, DuPont has corrected that error in Rebuttal Exhibit II-B-2

NS also has not factored in the additional infrastructure that DuPont must build at Belle in order to increase both its truck fleet and its truck loading capacity. {{[redacted]}}. Dup Op Narr II-B-111.

Lane B-6 (Belle to Cadet, MO): This gateway rate from Belle to East St. Louis applies to Lanes B-6, -10, -11, -14, -36, -39, -40 and -43. NS contends that a {{[redacted]}} lower direct truck rate for this 583 mile movement constitutes effective competition.[229] NS Reply II-B-145 to -146. NS also asserts that DuPont shipped {{[redacted]}} trucks of DMA and {{[redacted]}} trucks of MMA over this lane in 2009 and 2010, which NS labels as "strong evidence" of effective competition. Id. at II-B-146. There are multiple flaws in both NS's logic and its facts.

First, NS has incorrectly counted the number of AHM trucks in this lane. DuPont shipped only {{[redacted]}} trucks in 2009 and {{[redacted]}} trucks in 2010, which is half of the NS count.[230] Furthermore, as DuPont explained at page II-B-104 of its Opening Evidence, four separate *force majeure* events forced it to ship more AHM by truck in 2010 because DuPont needed to expedite shipments to customers when their AHM inventory ran low and threatened a plant shutdown. Thus, DuPont's shipment of just a few trucks, far from being strong evidence of effective competition, is proof that trucks are used to serve rail-served customers primarily when expedited service is required.

Second, NS ignores the fact that the lower truck rate is the result of very recent and sizeable NS rate increases. In 2010, NS increased its rate by {[redacted]}, and in 2011, it increased the rate by an additional {[redacted]} for a cumulative two year rate increase of {[redacted]}. Dup. Op

[229] DuPont also has calculated a {{[redacted]}} lower truck rate. Dup Op Narr. II-B-106.

[230] This error can be verified in NS Reply WP "DuPont Methylamine Truck Shipments.xls", which is data that DuPont produced to NS in discovery. NS should only have counted shipments with a "Bill Type" in Column M of "Linehaul". NS erroneously also counted other "Bill Types," which represent the accessorial charges paid on the line-haul movements. NS only made this error on a few lanes.

Narr. II-B-106; Dup Op Ex II-B-3 In contrast, over that same time frame, the connecting carrier on this route, UP, raised its rates by {{ }}, respectively, which illustrates the degree to which NS has exerted its market power. After NS has increased its rate over such a short period and by such substantial amounts, it is not surprising that NS's ability to raise its rate any further might appear to be constrained But, it is fundamentally illogical for market dominance to exist only until a railroad actually exercises that dominance. Therefore, NS's claim that its alternative truck rate is an effective competitive constraint simply is not credible

Third, NS glosses over the absurdity of a truck rate that is {{ }} lower than the rail rate on a 583 mile movement. As demonstrated in the preceding paragraph, that differential is attributable to recent NS rate increases, not those of the connecting carrier. NS's only attempt to address this absurdity is to invoke the few times that DuPont has shipped trucks over this lane or over similar distances on other lanes. NS Reply II-B-146. But NS ignores how few and far between such long distance truck shipments are, and the exceptional circumstances in which they occur.

Finally, NS has not factored in the additional infrastructure that DuPont must build at Belle in order to increase both its truck fleet and its truck loading capacity {{ }}. Dup Op. Narr. II-B-111

Lane B-10 (Belle to Conroe, TX): This gateway rate from Belle to East St Louis applies to Lanes B-6, -10, -11, -14, -36, -39, -40 and -43. NS contends that a {{ }} direct truck rate for this 1113 mile movement constitutes effective competition [231] NS Reply II-B-146 There are multiple flaws in this argument.

[231] DuPont also has calculated a {{ }} truck rate but a 1133 mile distance Dup Op Narr II-B-106; Dup Op Ex. II-B-3

First, NS ignores the fact that the rail rate came to {{[redacted]}} only after recent and sizeable NS rate increases. In 2010, NS increased its rate by {[redacted]}, and in 2011, it increased the rate by an additional {[redacted]} for a cumulative two year rate increase of {[redacted]}.[232] Dup. Op. Narr II-B-106; Dup Op. Ex II-B-3. {{[redacted]}}. Under NS's logic, it would have possessed market dominance prior to 2010 because the direct truck rate exceeded the through rail rate by more than 20%, and thus was not an effective competitive constraint upon rail rates. NS Reply II-B-107 However, now that NS has exercised its market power by aggressively increasing its rate to within 20% of the truck rate, NS claims it no longer possesses market dominance After NS has increased its rate over such a short period and by such substantial amounts, it is not surprising that NS's ability to raise its rate any further might appear to be constrained. But, it is fundamentally illogical for market dominance to exist only until a railroad actually exercises that dominance. Therefore, NS's claim that its alternative truck rate is an effective competitive constraint simply is not credible.

Second, NS ignores the absurdity of a {{[redacted]}} truck rate on a 1113 mile movement. Truck transportation clearly is a higher cost service at such long distances, because it requires more equipment, personnel and fuel to transport the same volume as rail transportation. This distance also is well beyond any range that trucks have ever been considered to be competitive with rail. See Dup. Op Narr. I-28 n.28.

[232] By NS's logic, in 2010, NS would have possessed market dominance over this movement because of a significantly higher truck rate However, by increasing its rate over the following two years, in order to {{[redacted]}} the truck rate, NS claims that it no longer possesses market dominance.

Third, this customer location physically cannot receive trucks without making special modifications to its facilities and obtaining approval from DuPont This is why there are no truck shipments to this customer location in DuPont's truck shipment data from 2006-2010.[233]

Finally, NS has not factored in the additional infrastructure that DuPont must build at Belle in order to increase both its truck fleet and its truck loading capacity. {{[redacted]}} Dup Op. Narr II-B-111

Lane B-11 (Belle to Corsicana, TX): This gateway rate from Belle to East St. Louis applies to Lanes B-6, -10, -11, -14, -36, -39, -40 and -43 NS contends that a {{[redacted]}} lower direct truck rate for this 1058 mile movement constitutes effective competition.[234] NS Reply II-B-146 to -147. NS also asserts that DuPont shipped {{[redacted]}} trucks of DMA over this lane in 2009 and 2010. Id. at II-B-147 There are multiple flaws in both NS's logic and its facts.

First, NS has incorrectly counted the number of AHM trucks in this lane. DuPont shipped only {{[redacted]}} trucks of DMA in 2009 and 2010, which is nearly half of the NS count.[235] Furthermore, as DuPont explained at page II-B-111 of its Opening Evidence, this customer receives all of its DMA by truck, because the customer purchases DMA in smaller volumes.[236] The issue movements are for TMA, which the customer can receive only by rail due to storage constraints. Id This is confirmed by the fact that this customer has never received a single truck

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[233] See NS Reply WP "DuPont Methylamine Truck Shipments xls"

[234] DuPont also has calculated a {{[redacted]}} lower-truck rate Dup Op. Narr II-B-106

[235] Dup. Reb. WP "DuPont Methylamine Anhydrous Truck Shipments-Rebuttal xlsx, "Corsicana" worksheet; see supra note 216.

[236] DuPont has a point-to-point rate for this lane to handle the DMA volume, not because it believes trucking is "a significant enough alternative...to have negotiated a point-to-point rate for the lane " See NS Reply II-B-3 and NS Reply WP " DuPont Point to Point Contract Rates.xls"

shipment of TMA. Thus, DuPont's shipment of DMA by truck is not evidence of effective competition for the transportation of TMA by rail.

Second, NS ignores the fact that the lower truck rate is the result of very recent and sizeable NS rate increases. In 2010, NS increased its rate by {[redacted]}, and in 2011, it increased the rate by an additional {[redacted]} for a cumulative two year rate increase of {[redacted]} Dup Op. Narr. II-B-106, Dup. Op. Ex. II-B-3. In contrast, over that same time frame, the connecting carrier on this route, UP, raised its rates by {{[redacted]}}, respectively, which illustrates the degree to which NS has exerted its market power Under NS's logic, it would have possessed market dominance prior to 2010 because the direct truck rate exceeded the through rail rate by more than 20%, and thus was not an effective competitive constraint upon rail rates. NS Reply II-B-107. However, now that NS has exercised its market power by aggressively increasing its rate to within 20% of the truck rate, NS claims it no longer possesses market dominance. After NS has increased its rate over such a short period and by such substantial amounts, it is not surprising that NS's ability to raise its rate any further might appear to be constrained. But, it is fundamentally illogical for market dominance to exist only until a railroad actually exercises that dominance. Therefore, NS's claim that its alternative truck rate is an effective competitive constraint simply is not credible

Third, NS glosses over the absurdity of a truck rate that is {{[redacted]}} lower than the rail rate on a 1058 mile movement. As demonstrated in the preceding paragraph, that differential is attributable to recent NS rate increases, not those of the connecting carrier. Truck transportation clearly is a higher cost service at such long distances, because it requires more equipment, personnel and fuel to transport the same volume as rail transportation. This distance also is well

beyond any range that trucks have ever been considered to be competitive with rail See Dup. Op. Narr. I-28 n.28.

Finally, NS has not factored in the additional infrastructure that DuPont must build at Belle in order to increase both its truck fleet and its truck loading capacity. {{[redacted]}}. Dup Op Narr II-B-111.

Lane B-14 (Belle to Ethyl, AR): This gateway rate from Belle to East St. Louis applies to Lanes B-6, -10, -11, -14, -36, -39, -40 and -43 NS contends that a {{[redacted]}} lower direct truck rate for this 857 mile movement constitutes effective competition.[217] NS Reply II-B-147. NS also asserts that DuPont shipped {{[redacted]}} trucks of DMA over this lane over a four-year period from 2006 through 2009. Id. There are multiple flaws in the NS logic.

First, {{[redacted]}} trucks over 4 years on a lane that, according to NS, averages {[redacted]} rail cars per year is hardly evidence of effective competition. See NS Reply Ex II-B-5. Rather, DuPont's shipment of a few trucks per year is proof that trucks are used to serve rail-served customers primarily when expedited service is required.

Second, NS ignores the fact that the lower truck rate is the result of recent and sizeable NS rate increases. In 2010, NS increased its rate by {[redacted]}, and in 2011, it increased the rate by an additional {[redacted]} for a cumulative two year rate increase of {[redacted]}. Dup. Op. Narr II-B-106. Dup Op. Ex. II-B-3. In contrast, over that same time frame, the connecting carrier on this route, UP, raised its rates by {{[redacted]}}, respectively, which illustrates the degree to which NS has exerted its market power. After NS has increased its rate over such a short period and by such substantial amounts, it is not surprising that NS's ability to raise its rate any further might

[217] DuPont also has calculated a {{[redacted]}} lower truck rate Dup Op Narr II-B-106; Dup Op Ex II-B-3.

appear to be constrained. But, it is fundamentally illogical for market dominance to exist only until a railroad actually exercises that dominance. Therefore, NS's claim that its alternative truck rate is an effective competitive constraint simply is not credible.

Third, NS glosses over the absurdity of a truck rate that is {{ }} lower than the rail rate on an 857 mile movement. As demonstrated in the preceding paragraph, that differential is attributable to recent NS rate increases, not those of the connecting carrier. Truck transportation clearly is a higher cost service at such long distances, because it requires more equipment, personnel and fuel to transport the same volume as rail transportation. This distance also is well beyond any range that trucks have ever been considered to be competitive with rail. See Dup. Op. Narr. I-28 n.28.

Finally, NS has not factored in the additional infrastructure that DuPont must build at Belle in order to increase both its truck fleet and its truck loading capacity. {{ }}. Id. at II-B-111.

Lane B-18 (Belle to Garyville, LA): This gateway rate from Belle to New Orleans applies to Lanes B-18, -19 and -32. NS contends that a {{ }} lower direct truck rate for this 915 mile movement constitutes effective competition.[238] NS Reply II-B-147. NS, however, ignores the fact that the lower truck rate is the result of recent and sizeable NS rate increases. In 2010, NS increased its rate by { }, and in 2011, it increased the rate by an additional { } for a cumulative two year rate increase of { }. Dup. Op. Narr. II-B-106; Dup. Op. Ex. II-B-3. In contrast, over that same time frame, the connecting carrier on this route, CN, raised its rates by {{ }}, respectively, which illustrates the degree to which NS has exerted

[238] DuPont also has calculated a {{ }} lower truck rate. Dup. Op. Narr. II-B-106; Dup. Op. Ex. II-B-3.

its market power. After NS has increased its rate over such a short period and by such substantial amounts, it is not surprising that NS's ability to raise its rate any further might appear to be constrained. But, it is fundamentally illogical for market dominance to exist only until a railroad actually exercises that dominance Therefore, NS's claim that its alternative truck rate is an effective competitive constraint simply is not credible

Furthermore, NS glosses over the absurdity of a {{ }} lower truck rate on a 915 mile movement Truck transportation clearly is a higher cost service at such long distances, because it requires more equipment, personnel and fuel to transport the same volume as rail transportation. This distance also is well beyond any range that trucks have ever been considered to be competitive with rail See Dup. Op. Narr. I-28 n.28.

NS also has not factored in the additional infrastructure that DuPont must build at Belle in order to increase both its truck fleet and its truck loading capacity {{ }}.

Lane B-19 (Belle to Geismar, LA): This gateway rate from Belle to New Orleans applies to Lanes B-18, -19 and -32. NS contends that a {{ }} lower direct truck rate for this 937 mile movement constitutes effective competition.[239] NS Reply II-B-147 to -150 NS, however, ignores the fact that the lower truck rate is the result of recent and sizeable NS rate increases. In 2010, NS increased its rate by { }, and in 2011, it increased the rate by an additional { } for a cumulative two year rate increase of { }. Dup. Op Narr II-B-106, Dup Op. Ex. II-B-3 In contrast, over that same time frame, the connecting carrier on this route, CN, raised its rates by {{ }}, respectively, which illustrates the degree to which NS has exerted its market power After NS has increased its rate over such a short period and by

[239] DuPont also has calculated a {{ }} lower truck rate Dup Op. Narr. II-B-106, Dup Op Ex. II-B-3.

such substantial amounts. It is not surprising that NS's ability to raise its rate any further might appear to be constrained. But, it is fundamentally illogical for market dominance to exist only until a railroad actually exercises that dominance. Therefore, NS's claim that its alternative truck rate is an effective competitive constraint simply is not credible.

Furthermore, NS ignores the absurdity of a {{ }} lower truck rate on a 937-mile movement. Truck transportation clearly is a higher cost service at such long distances, because it requires more equipment, personnel and fuel to transport the same volume as rail transportation. This distance also is well beyond any range that trucks have ever been considered to be competitive with rail. See Dup. Op. Narr. I-28 n.28.

NS also has not factored in the additional infrastructure that DuPont must build at Belle in order to increase both its truck fleet and its truck loading capacity. {{ }}. Dup. Op. Narr. II-B-111. {{ }}.

Lane B-32 (Belle to St. Gabriel, LA): This gateway rate from Belle to New Orleans applies to Lanes B-18, 19 and 32. NS contends that a {{ }} lower direct truck rate for this 959-mile movement constitutes effective competition.[241] NS Reply II-B-148.

[240] {{ }}

[241] DuPont also has calculated a {{ }} lower truck rate. Dup. Op. Narr. II-B-106, Dup. Op. Ex. II-B-3.

Of all the issue movements in this case, Lane B-32 is unique because {[redacted]} {{[redacted]}}.

This example is a major red-herring. {{[redacted]}}

Furthermore, NS glosses over the absurdity of a {{[redacted]}} lower truck rate on a 959-mile movement. Truck transportation clearly is a higher cost service at such long distances, because it requires more equipment, personnel and fuel to transport the same volume as rail transportation. This distance also is well beyond any range that trucks have ever been considered to be

[242] {{[redacted]}}

[243] {{[redacted]}}

competitive with rail. See Dup. Op. Narr I-28 n.28 {{[redacted]}} NS also has not factored in the additional infrastructure that DuPont must build at Belle in order to increase both its truck fleet and its truck loading capacity.

Lane B-36 (Belle to Strang, TX): This gateway rate from Belle to East St. Louis applies to Lanes B-6, -10, -11, -14, -36, -39, -40 and -43. NS contends that a {{[redacted]}} lower direct truck rate for this 1165 mile movement constitutes effective competition.[244] NS Reply II-B-148 NS, however, ignores the fact that the lower truck rate is the result of recent and sizeable NS rate increases. In 2010, NS increased its rate by {[redacted]}, and in 2011, it increased the rate by an additional {[redacted]} for a cumulative two year rate increase of {[redacted]}. Dup. Op. Narr. II-B-106; Dup Op Ex II-B-3 In contrast, over that same time frame, the connecting carrier on this route, UP, raised its rates by {{[redacted]}}, respectively, which illustrates the degree to which NS has exerted its market power. Under NS's logic, it would have possessed market dominance prior to 2010 because the direct truck rate exceeded the through rail rate by more than 20%, and thus was not an effective competitive constraint upon rail rates. NS Reply II-B-107 However, now that NS has exercised its market power by aggressively increasing its rate to within 20% of the truck rate, NS claims it no longer possesses market dominance. After NS has increased its rate over such a short period and by such substantial amounts, it is not surprising that NS's ability to raise its rate any further might appear to be constrained But, it is fundamentally illogical for market dominance to exist only until a railroad actually exercises that dominance.

[244] DuPont also has calculated a {{[redacted]}} lower truck rate, but a 1165 mile distance Dup. Op Narr. II-B-106; Dup. Op Ex. II-B-3

Therefore, NS's claim that its alternative truck rate is an effective competitive constraint simply is not credible.

Furthermore, NS glosses over the absurdity of a lower truck rate on a 1165 mile movement. Truck transportation clearly is a higher cost service at such long distances, because it requires more equipment, personnel and fuel to transport the same volume as rail transportation This distance also is well beyond any range that trucks have ever been considered to be competitive with rail See Dup. Op. Narr I-28 n.28. NS also has not factored in the additional infrastructure that DuPont must build at Belle in order to increase both its truck fleet and its truck loading capacity

Lane B-39 (Belle to Texas City, TX): This gateway rate from Belle to East St. Louis applies to Lanes B-6, -10, -11, -14, -36, -39, -40 and -43. NS contends that a {{[redacted]}} direct truck rate for this 1188 mile movement constitutes effective competition.[245] NS Reply II-B-149 NS also asserts that DuPont shipped {{[redacted]}} trucks of MMA over this lane in 2007. Id. There are multiple flaws in the NS logic.

First, {{[redacted]}} trucks in a single year out of five years of trucking data provided by DuPont to NS is hardly evidence of effective competition. Rather, DuPont's shipment of just {{[redacted]}} trucks over a 5-year span is proof that trucks are used to serve rail-served customers primarily when expedited service is required.

Second, NS ignores the fact that the {{[redacted]}} truck rate is the result of recent and sizeable NS rate increases. In 2010, NS increased its rate by {[redacted]}, and in 2011, it increased the rate by an additional {[redacted]} for a cumulative two-year rate increase of {[redacted]}. Dup. Op. Narr II-B-106, Dup. Op. Ex. II-B-3 In contrast, over that same time frame, the connecting

[245] DuPont also has calculated a {{[redacted]}} truck rate Dup. Op. Narr II-B-106; Dup Op Ex II-B-3

carrier on this route. UP, raised its rates by {{ }}, respectively, which illustrates the degree to which NS has exerted its market power Under NS's logic, it would have possessed market dominance prior to 2010 because the direct truck rate exceeded the through rail rate by more than 20%, and thus was not an effective competitive constraint upon rail rates. NS Reply II-B-107. However, now that NS has exercised its market power by aggressively increasing its rate to within 20% of the truck rate, NS claims it no longer possesses market dominance After NS has increased its rate over such a short period and by such substantial amounts, it is not surprising that NS's ability to raise its rate any further might appear to be constrained. But, it is fundamentally illogical for market dominance to exist only until a railroad actually exercises that dominance. Therefore, NS's claim that its alternative truck rate is an effective competitive constraint simply is not credible.

Furthermore, NS ignores the absurdity of a {{ }} truck rate on a 1188 mile movement. Truck transportation clearly is a higher cost service at such long distances, because it requires more equipment, personnel and fuel to transport the same volume as rail transportation. This distance also is well beyond any range that trucks have ever been considered to be competitive with rail. See Dup Op. Narr I-28 n.28. NS also has not factored in the additional infrastructure that DuPont must build at Belle in order to increase both its truck fleet and its truck loading capacity.

Lane B-40 (Belle to Verona, MO): This gateway rate from Belle to East St Louis applies to Lanes B-6, -10, -11, -14, -36, -39, -40 and -43 NS contends that a {{ }} lower direct truck rate for this 766 mile movement constitutes effective competition.[246] NS Reply II-B-149. NS, however, ignores the fact that the lower truck rate is the result of recent and sizeable

[246] DuPont also has calculated a {{ }} lower truck rate Dup Op Narr II-B-106, Dup Op Ex. II-B-3.

NS rate increases In 2010, NS increased its rate by {[redacted]}, and in 2011, it increased the rate by an additional {[redacted]} for a cumulative two-year rate increase of {[redacted]}. Dup Op Narr. II-B-106; Dup. Op. Ex II-B-3 In contrast, over that same time frame, the connecting carrier on this route, UP, raised its rates by {{[redacted]}}, respectively, which illustrates the degree to which NS has exerted its market power After NS has increased its rate over such a short period and by such substantial amounts, it is not surprising that NS's ability to raise its rate any further might appear to be constrained But, it is fundamentally illogical for market dominance to exist only until a railroad actually exercises that dominance. Therefore, NS's claim that its alternative truck rate is an effective competitive constraint simply is not credible.

Furthermore, NS glosses over the absurdity of a lower truck rate on a 766 mile movement Truck transportation clearly is a higher cost service at such long distances, because it requires more equipment, personnel and fuel to transport the same volume as rail transportation. This distance also is well beyond any range that trucks have ever been considered to be competitive with rail. See Dup Op Narr. I-28 n.28.

Finally, NS has not factored in the additional infrastructure that DuPont must build at Belle in order to increase both its truck fleet and its truck loading capacity. {{[redacted]}}.

Lane B-41 (Belle to West Memphis, AR): This gateway rate from Belle to Kansas City applies only to Lane B-41. NS contends that a {{[redacted]}} lower direct truck rate for this 602 mile movement constitutes effective competition [247] NS Reply II-B-149. NS, however, ignores the fact that the lower truck rate is the result of recent and sizeable NS rate increases In 2010, NS increased its rate by {[redacted]}, and in 2011, it increased the rate by an additional {[redacted]} for a

[247] DuPont also has calculated an {{[redacted]}} lower truck rate Dup Op Narr II-B-106, Dup. Op. Ex II-B-3

cumulative two year rate increase of {[redacted]}. Dup. Op Narr. II-B-106, Dup Op. Ex II-B-3. In contrast, over that same time frame, the connecting carrier on this route, UP, raised its rates cumulatively by {{[redacted]}}, respectively, which illustrates the degree to which NS has exerted its market power. After NS has increased its rate over such a short period and by such substantial amounts, it is not surprising that NS's ability to raise its rate any further might appear to be constrained. But, it is fundamentally illogical for market dominance to exist only until a railroad actually exercises that dominance Therefore, NS's claim that its alternative truck rate is an effective competitive constraint simply is not credible.

Furthermore, NS glosses over the absurdity of a lower truck rate on a 602 mile movement Truck transportation clearly is a higher cost service at such long distances, because it requires more equipment, personnel and fuel to transport the same volume as rail transportation This distance also is well beyond any range that trucks have ever been considered to be competitive with rail. See Dup. Op. Narr. I-28 n.28

Finally, NS has not factored in the additional infrastructure that DuPont must build at Belle in order to increase both its truck fleet and its truck loading capacity. {{[redacted]}}

Lane B-43 (Belle to Wichita, KS): This gateway rate from Belle to East St Louis applies to Lanes B-6, -10, -11, -14, -36, -39, -40 and -43 NS contends that an {{[redacted]}} lower direct truck rate for this 955 mile movement constitutes effective competition.[248] NS Reply II-B-150 NS, however, ignores the fact that the lower truck rate is the result of recent and sizeable NS rate increases. In 2010, NS increased its rate by {[redacted]}, and in 2011, it increased the rate by

[248] DuPont also has calculated an {{[redacted]}} lower truck rate. Dup. Op Narr II-B-106, Dup Op Ex II-B-3

an additional {[redacted]} for a cumulative two year rate increase of {[redacted]} Dup. Op. Narr. II-B-106, Dup. Op Ex. II-B-3. In contrast, over that same time frame, the connecting carrier on this route, BNSF, raised its rates cumulatively by {{[redacted]}}, which illustrates the degree to which NS has exerted its market power. After NS has increased its rate over such a short period and by such substantial amounts, it is not surprising that NS's ability to raise its rate any further might appear to be constrained. But, it is fundamentally illogical for market dominance to exist only until a railroad actually exercises that dominance. Therefore, NS's claim that its alternative truck rate is an effective competitive constraint simply is not credible.

Furthermore, NS glosses over the absurdity of a lower truck rate on a 955 mile movement. Truck transportation clearly is a higher cost service at such long distances, because it requires more equipment, personnel, and fuel to transport the same volume as rail transportation This distance also is well beyond any range that trucks have ever been considered to be competitive with rail. See Dup Op. Narr. I-28 n 28.

Finally, NS has not factored in the additional infrastructure that DuPont must build at Belle in order to increase both its truck fleet and its truck loading capacity {{[redacted]}}.

Lane B-90 (Belle to Port Bienville, MS): This gateway rate from Belle to Atlanta applies only to Lane B-90 NS contends that a {{[redacted]}} lower direct truck rate for this 853 mile movement constitutes effective competition NS Reply II-B-150. NS also asserts that DuPont shipped {{[redacted]}} trucks of DMA over this lane in 2010. Id. There are multiple flaws in both NS's logic and its facts.

First, NS has incorrectly counted the number of AHM trucks in this lane. DuPont shipped only {{ }} trucks in 2010.[249] Furthermore, as DuPont explained at page II-B-104 of its Opening Evidence, four separate *force majeure* events forced it to ship more AHM by truck in 2010 because DuPont needed to expedite shipments to customers when their AHM inventory ran low and threatened a plant shutdown. Thus, DuPont's shipment of trucks in 2010, far from being strong evidence of effective competition, is proof that trucks are used to serve rail-served customers primarily when expedited service is required

Second, NS ignores the fact that the lower truck rate is the result of very recent and sizeable NS rate increases In 2010, NS increased its rate by {{ }}. Dup Op Narr II-B-106, Dup. Op Ex II-B-3. In contrast, the connecting carrier on this route, CSXT, raised its rate by {{ }}, which illustrates the degree to which NS has exerted its market power. Therefore, NS's claim that the lower truck rate is an effective competitive constraint simply is not credible.

Third, NS glosses over the absurdity of a truck rate that is {{ }} lower than the rail rate on an 853 mile movement. As demonstrated in the preceding paragraph, that differential is attributable to recent NS rate increases, not those of the connecting carrier Truck transportation clearly is a higher cost service at such long distances, because it requires more equipment, personnel, and fuel to transport the same volume as rail transportation This distance is well beyond any range that trucks have ever been considered to be competitive with rail See Dup. Op. Narr. I-28 n.28. NS's only attempt to address this absurdity is to invoke DuPont's use of trucks over this lane in 2010. NS Reply II-B-150 But NS ignores the exceptional circumstances in which those truck shipments occurred.

[249] Dup Reb WP "DuPont Methylamine Anhydrous Truck Shipments-Rebuttal xlsx," "Lane Counts" worksheet, see supra note 216

Finally, NS has not factored in the additional infrastructure that DuPont must build at Belle in order to increase both its truck fleet and its truck loading capacity {{ }} Dup Op. Narr. II-B-112

Lane B-91 (Belle to Theodore, AL): This gateway rate from Belle to Cincinnati applies only to Lane B-91. NS contends that a {{ }} lower direct truck rate for this 816 mile movement constitutes effective competition.[250] NS Reply II-B-150. NS also asserts that DuPont shipped {{ }} trucks of TMA over this lane in recent years Id. There are multiple flaws in both NS's logic and its facts.

First, NS misrepresents the facts when it claims that there have been several TMA truck shipments over this lane in recent years. In fact, from 2006-2010, the data presented by NS shows that there have been just {{ }} truck shipments, all of which occurred in October 2007.[251] {{ }} These were not loaded trucks. Because the customer had a leaking rail car, DuPont sent these trucks to assist with the clean-up effort. In any event, that same year, DuPont's customer received { } rail cars according to NS Reply Ex. II-B-5 [252] Thus, the shipment of a few trucks in 2007, far from being strong evidence of effective competition, would be consistent with DuPont's testimony that trucks are used to serve rail-served customers primarily when expedited service is required.

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[250] DuPont also has calculated an {{ }} lower truck rate Dup Op Narr II-B-106, Dup. Op. Ex II-B-3

[251] See Dup Reb WP "DuPont Methylamine Anhydrous Truck Shipments-Rebuttal xlsx," "Lane Counts" worksheet, see supra note 216

[252] NS has submitted a "Corrected" version of Reply Ex II-B-5 that deletes 2007 data because it undercounted rail cars See NS Reply Errata (filed Jan 25, 2013) Therefore, the potential that NS has understated the 2007 rail car count in this lane would mean that trucks accounted for an even smaller proportion of the total volume

Second, NS ignores the fact that the lower truck rate is the result of very recent and sizeable NS rate increases In 2010, NS increased its rate by {[redacted]}, and in 2011, it increased the rate by an additional {[redacted]} for a cumulative two year rate increase of {[redacted]}. Dup. Op. Narr. II-B-106; Dup. Op. Ex. II-B-3 In contrast, over that same time frame, the connecting carrier on this route, CSXT, raised its rates by {{[redacted]}}, respectively, which illustrates the degree to which NS has exerted its market power. Under NS's logic, it would have possessed market dominance prior to 2010 because the direct truck rate exceeded the through rail rate by more than 20%, and thus was not an effective competitive constraint upon rail rates. NS Reply II-B-107. However, now that NS has exercised its market power by aggressively increasing its rate to within 20% of the truck rate, NS claims it no longer possesses market dominance. After NS has increased its rate over such a short period and by such substantial amounts, it is not surprising that NS's ability to raise its rate any further might appear to be constrained But, it is fundamentally illogical for market dominance to exist only until a railroad actually exercises that dominance. Therefore, NS's claim that its alternative truck rate is an effective competitive constraint simply is not credible.

Third, NS ignores the absurdity of a truck rate that is {{[redacted]}} lower than the rail rate on an 816 mile movement. As demonstrated in the preceding paragraph, that differential is attributable to recent NS rate increases, not those of the connecting carrier Truck transportation clearly is a higher cost service at such long distances, because it requires more equipment, personnel, and fuel to transport the same volume as rail transportation This distance also is well beyond any range that trucks have ever been considered to be competitive with rail. See Dup Op. Narr. I-28 n.28. NS's only attempt to address this absurdity is to invoke DuPont's shipment of {{[redacted]}} trucks over this lane in 2007. NS Reply II-B-150 to -151. But NS ignores how few and

far between such long distance truck shipments are, and the exceptional circumstances in which they occur. Finally, NS has not factored in the additional infrastructure that DuPont must build at Belle in order to increase both its truck fleet and its truck loading capacity.

Lane B-121 (Belle to Mapleton, IL): This gateway rate from Belle to Logansport, IN applies only to Lane B-121. NS contends that a {{ }} lower direct truck rate for this 520-mile movement constitutes effective competition.[253] NS Reply II-B-151. NS ignores the fact that the lower truck rate is the result of very recent and sizeable NS rate increases. In 2010, NS increased its rate by {{ }}, and in 2011, it increased the rate by an additional {{ }} for a cumulative two year rate increase of {{ }}. Dup. Op. Narr. II-B-106, Dup. Op. Ex. II-B-3. In contrast, over that same time frame, the connecting carrier on this route, TPW, raised its rates by {{ }}, respectively, which illustrates the degree to which NS has exerted its market power. Therefore, NS's claim that the lower truck rate is an effective competitive constraint simply is not credible.

NS also ignores the absurdity of a truck rate that is {{ }} lower than the rail rate on a 520-mile movement, which is just beyond the outermost range at which trucks historically have been considered competitive with rail. See Dup. Op. Narr. I-28 n.28. As demonstrated in the preceding paragraph, that differential is attributable to recent NS rate increases, not those of the connecting carrier. Truck transportation clearly is a higher cost service at such long distances, because it requires more equipment, personnel and fuel to transport the same volume as rail transportation.

[253] DuPont has calculated a {{ }} lower truck rate. Dup. Op. Narr. II-B-106, Dup. Op. Ex. II-B-3. The difference is attributable to NS incorrectly applying the fuel surcharge to just the mileage-based rate, when it should have applied the fuel surcharge to the sum of the mileage-based rate plus the {{ }} flat fee.

Furthermore, this customer location physically cannot receive trucks without making special modifications to its facilities and obtaining approval from DuPont. This is why there are no truck shipments in the DuPont's truck shipment data from 2006-2010 [254]

Finally, NS has not factored in the additional infrastructure that DuPont must build at Belle in order to increase both its truck fleet and its truck loading capacity {{[redacted]}}.

[254] See NS Reply WP "DuPont Methylamine Truck Shipments.xls"

[255] See Dup Op Narr. II-B-112.

m. Methylamines, Aqueous[256]

In its Opening Evidence, DuPont challenged 3 NS rates for transporting Aqueous Methylamines ("AQMs")[257] from Belle, WV to 5 destinations.[258] In its Reply Evidence, NS has contested its market dominance over 2 rates to the following 3 destinations [259]

Table II-B-8
Contested Aqueous Methylamines Lanes

Lane #	Origin	Interchange	Destination	Customer
B-8	Belle, WV	E. St Louis, MO	Channelview, TX	Lyondell Chemical
B-17	Belle, WV	E. St Louis, MO	Freeport, TX	Nalco Company
B-33	Belle, WV	Kansas City, MO	St Joseph, MO	Albaugh Chemical

The sum total of the NS Reply Evidence, at pages II-B-166 to -169, is that allegedly lower truck rates, over distances that range from 800-1200 miles,[260] are effective competitive constraints because DuPont is capable of shipping AQMs by truck and occasionally has shipped a truck over comparable distances This is a perpetuation of NS's overarching theme that, if a truck has ever been used to transport a commodity at any time, over any distance, and between any two points, then trucks must be an effective competitive constraint for the issue movement, so long as the transportation cost is not more than 20% above the challenged rail rate. This argument is inconsistent with the market dominance guidelines in Market Dominance Determinations, 365 I.C.C. at 133.

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[256] The evidence and testimony in this section is jointly sponsored by Mary Pileggi, Logistics Manager-NA Region, and Jeff Jirak, Global Business Manager Methylamines

[257] DuPont collectively refers to aqueous monomethylamine ("MMA"), aqueous dimethylamine ("DMA") and aqueous trimethylamine ("TMA") as "AQMs."

[258] Although there are 5 lanes, there are only 3 challenged rates because the NS segment for some of the movements is from the same origin to the same interchange point.

[259] NS has not contested market dominance over lanes B-13 and 25, which are covered by the same rate from Belle, WV to the Chicago, IL interchange

[260] See Dup Op Ex II-B-1; Dup. Op Ev II-B-115

NS attempts to make much of the fact that DuPont has shipped {{[redacted]}} trucks of AQM over five years from 2006-2010.[261] NS Reply II-B-167 But, of these truck shipments, {{[redacted]}}, or 92%, were delivered to locations without rail service.[262] This is consistent with DuPont's testimony that rail-served customers seldom receive trucks except over short distances, in small volumes, or on an expedited basis. This fact also satisfies one of the five explicitly-identified market dominance factors in Market Dominance Determinations.

In a nod towards the relevance of distance to the effectiveness of truck competition, NS contends that "[m]any" of DuPont's AQM truck shipments were over long distances. Id. But, NS's definition of "many" appears to be {{[redacted]}} trucks from Belle to Los Angeles in 2008 and {{[redacted]}} trucks from Belle to Winnipeg, Canada over 4 years.[263] It is telling, however, that the Los Angeles truck shipments are in Lane B-25, to which NS does not contest market dominance. Presumably NS does not contest market dominance because the truck rate is over 20% above the rail rate. This actually proves DuPont's point that trucks are used to serve rail customers over long distances only when time is of the essence or for small volume purchases, not because they are effective competition for rail transportation.

NS's suggestion that the Board should ignore the long distances of 800-1200 miles for the issue movements, because DuPont itself has trucked AQM over similar distances, is seriously flawed because there is no evidence that DuPont has shipped AQM such long distances by truck

[261] Although NS refers to {{[redacted]}} trucks, the correct number is {{[redacted]}} Dup. Reb WP "DuPont Methylene Aqueous Truck Shipments-Rebuttal xlsx," "Shipment Counts" worksheet DuPont attributes this discrepancy to NS's failure to account for duplicate invoice records and the different types of billing records in the data To obtain an accurate count of truck shipments using DuPont's truck bill records, it is necessary to filter the records to show only linehaul bill types (each shipment is the subject of only one linehaul bill, but may be the subject of multiple balance due bills or other bills) and remove linehaul records containing a duplicate document number (a document number is associated with only one shipment) See Dup Op WP "AQM Truck Shipments xls," "Notes" worksheet, in the "AQM" folder (explaining adjustments that DuPont made to remove inaccurate and duplicate records) A corrected version of the NS reply workpaper is included as DuPont Rebuttal Workpaper "DuPont Methylene Aqueous Truck Shipments-Rebuttal xlsx," and contains an "Adjustments" worksheet that identifies all adjustments that DuPont made to the data in the workpaper.

[262] Dup Reb WP "DuPont Methylene Aqueous Truck Shipments-Rebuttal xlsx " "Rail Capability" worksheet

[263] Dup Reb WP "DuPont Methylene Aqueous Truck Shipments-Rebuttal xlsx," "Shipment Counts" worksheet.

to any rail-served location on a routine basis. These are clearly distances well beyond the range within which trucks historically have been deemed competitive. See Dup. Op Narr. I-28 n.28. An isolated truck shipment over a long distance route that is regularly served by rail exemplifies the fact that trucks are used only as an exception when absolutely necessary In other words, trucks are seldom used to transport AQM under transportation circumstances similar to rail This is a second relevant factor expressly identified in Market Dominance Determinations, 365 I C C. at 133

NS also disregards DuPont's evidence of {{ }} in additional infrastructure that is needed in order to load more AQM into trucks Dup Op. Narr. II-B-117 to -118 NS appears to misunderstand DuPont's evidence to claim that DuPont would need to build another truck loading rack, when in fact the additional infrastructure need is for additional storage tanks and reconfigured piping.[264] Id Because AQM and AHM share the same anhydrous supply piping, DuPont cannot produce AQM when loading trucks of AHM and vice versa Id Because NS has proposed to increase the number of truck loadings for both issue commodities, it is necessary to reconfigure the piping to remove this bottleneck. The NS Reply, however, focuses only on the smaller number of additional AQM truck loadings, without any consideration of the six additional truck loadings per day that would be needed to transport the AHM issue traffic. See Part II-B.2 I. Furthermore, the AQM storage capacity is inadequate for additional truck loadings. Id. DuPont has only one small tank each for mono-AQM and di-AQM. And, despite having two truck loading racks, DuPont cannot simultaneously load both types of AQM. NS has failed to properly recognize and address these issues.

[264] Further evidence of NS's confusion is its claim that Belle has three methylamine truck loading spots See NS Reply II-B-167 Although Belle has one truck loading rack for AHMs and two for AQMs, they are not interchangeable This is expressed quite clearly in NS Reply WP "Barge and Truck Spots xls" Therefore, it is improper for NS to lump them together

NS also dismisses DuPont's evidence that the customers for the issue movements rely upon rail cars for storage NS Reply II-B-167. DuPont witnesses testified based upon their knowledge of these customers that the destinations for Lanes B-8 and 17 have very small storage tanks that hold less volume than a single rail car Dup. Op Narr. II-B-119. DuPont also provided evidence that the customers in these lanes hold the loaded rail cars for an average of {[redacted]} days Id. Such evidence is far more than an "unsupported hypothesis."

Finally, in the discussion of the individual AQM issue movements below, DuPont points to dramatic NS rate increases that range from {[redacted]} over a brief 2-year period, from 2009-11, as evidence of the exercise of NS market power. Although NS claims that such dramatic rate increases were "{[redacted]}," that cannot explain the full magnitude of these rate increases [265] NS alleges that DuPont's legacy contract that expired in 2009 {[redacted]}.[266] This translates to a 46.8% increase in the contract rates over that time.[267] But during that same time NS's variable costs for transporting AQM increased by 54.7%, which would justify only a 5 4% post-contract rate increase.[268] This does not even begin to explain rate increases of {[redacted]}

The remainder of this section responds to the NS Reply Evidence as to each of the 3 contested AQM lanes:

Lane B-8 (Belle to Channelview, TX): This gateway rate from Belle to East St. Louis applies to Lanes B-8 and -17. NS contends that a {{[redacted]}} direct truck rate for this 1160-

[265] NS Reply II-B-92

[266] Id. at II-B-92 to -93

[267] Dup Reb Ex. II-B-1, at 1.

[268] Dup Reb Ex. II-B-1, Attachment 1, columns (8), (9).

mile movement constitutes effective competition [269] NS Reply II-B-168. This NS evidence and argument is both factually and logically flawed

First, NS inappropriately used the Sentinel contract for the direct truck rate. {{[redacted]}}. That is why, in over 5 years from 2006-10, Sentinel transported just {{[redacted]}} out of {{[redacted]}} truck shipments, or just {{[redacted]}}.[271] All other AQM truck shipments were performed by commercial carriers, of which the lowest cost carrier, {{[redacted]}}, handled 56% of the shipments.[272] {{[redacted]}} is DuPont's primary motor carrier for AQM shipments because it has dedicated a fleet of specially equipped trailers for AQM shipments for DuPont's use. Hence, DuPont used the {{[redacted]}} contract for its truck rate evidence.[273] {{[redacted]}}

[269] DuPont has calculated a {{[redacted]}} higher truck rate, which would place this lane above the 10% threshold used by DuPont, but still below the 20% threshold used by NS. Dup. Op. Narr. II-B-116. The difference is attributable to the use of different carrier contracts to develop truck rates. DuPont used {{[redacted]}}, whereas NS used Sentinel.

[270] See NS Reply WP "Sentinel Charleston WV Terminal Scope of Work.pdf" (identifying the DuPont products that Sentinel handles to/from Belle, WV). AQM is not discussed anywhere in that document.

[271] Dup. Reb. WP "DuPont Methylene Aqueous Truck Shipments-Rebuttal.xlsx," "Carrier Counts" worksheet.

[272] Id.

[273] In addition to inappropriately using Sentinel in the first place, NS also did not calculate the Sentinel rate correctly. Because AQM transportation is not within the Sentinel scope of work, there are no point-to-point rates for Lane B-8 or any other AQM movement. Therefore, NS was forced to use the mileage scale rates, which are designed for occasional back-up movements. Although NS accurately calculated the mileage base rate, it omitted the cleaning charge. {{[redacted]}}. See NS Reply WP "0059403.xls," "Original Page 32" worksheet, in the Sentinel contract folder. Assuming that actual cost would be comparable to the {{[redacted]}} per truck rate that DuPont used to calculate the {{[redacted]}} rate, the NS per rail car equivalent truck cost increases by {{[redacted]}} to {{[redacted]}}, which makes the truck rate {{[redacted]}} higher than the rail rate.

[redacted]

Second, NS ignores the fact that the rate differential is attributable solely to very recent and sizeable NS rate increases. In 2010, NS increased its rate by {[redacted]}, and in 2011, it increased the rate by an additional {[redacted]} for a cumulative two year rate increase of {[redacted]}. Dup Op. Narr. II-B-116, Dup. Op. Ex II-B-3. In contrast, over that same time frame, the connecting carrier on this route, UP, raised its rates by {{[redacted]}}, respectively, which illustrates the degree to which NS has exerted its market power After NS has increased its rate over such a short period and by such substantial amounts to {{[redacted]}} the rate of an alternative mode, it is not surprising that NS's ability to raise its rate any further might appear to be constrained.

Third, NS incorrectly argues that, despite the distance, DuPont has shipped {{[redacted]}} trucks of AQM over this lane from 2008-10. NS Reply II-B-168. Its own work paper shows only {{[redacted]}} trucks during this time period and all of those shipments occurred over two weeks in January 2008 and 1 week in July 2008, which is consistent with trucks being used on an exception basis.[274] This contrasts with {[redacted]} rail cars in 2008, which means that trucks accounted for just {{[redacted]}} of the total AQM volume shipped on Lane B-8.[275]

Finally, NS has not factored in the additional infrastructure that DuPont must build at Belle in order to increase its AQM storage capacity and to reconfigure its piping to permit more trucks to be loaded.

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[274] See NS Reply WP "DuPont Methylamine Aqueous Truck Shipments xls," "Monomethylamine Aqueous 2006-2010" worksheet

[275] See NS Reply Ex II-B-5 The NS total rail car count for 2008 likely is understated For example, the NS traffic tapes show {[redacted]}} Dup Reb WP "Comparison of NS Waybill Data and NS Reply Exhibit II-B-5 pdf" DuPont cannot ascertain whether this same discrepancy exists in 2008 because NS has not produced traffic data for that year

Lane B-17 (Belle to Freeport, TX): This gateway rate from Belle to East St Louis applies to Lanes B-8 and 17. NS contends that a {{ }} truck rate for this 1213 mile movement constitutes effective competition [276] NS Reply II-B-168. This NS evidence and argument is both factually and logically flawed.

First, NS inappropriately used the Sentinel contract for the direct truck rate. This point is identical to the same discussion under Lane B-8, above. Therefore, DuPont incorporates that discussion by reference [277]

Second, NS ignores the fact that the rate differential is attributable solely to very recent and sizeable NS rate increases. In 2010, NS increased its rate by { }, and in 2011, it increased the rate by an additional { } for a cumulative two year rate increase of { }. Dup Op. Narr II-B-116, Dup. Op. Ex II-B-3. In contrast, over that same time frame, the connecting carrier on this route, UP, raised its rates by {{ }}, respectively, which illustrates the degree to which NS has exerted its market power. After NS has increased its rate over such a short period and by such substantial amounts, it is not surprising that NS's ability to raise its rate any further might appear to be constrained The reality, however, is that NS has increased its rate to match that of a much higher cost alternative

Third, NS argues that, despite the distance, DuPont has shipped {{ }} trucks of AQM over this lane in 2010. NS Reply II-B-168. Although this fact is correct, NS conveniently

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[276] DuPont has calculated a {{ }} higher truck rate, which would place this lane above both the 10% threshold used by DuPont and the 20% threshold used by NS. Dup Op Narr II-B-116 The difference is attributable to the use of different carrier contracts to develop truck rates DuPont used {{ }}, whereas NS used Sentinel

[277] In addition to inappropriately using Sentinel in the first place, NS also did not calculate the Sentinel rate correctly Because AQM transportation is not within the Sentinel scope of work, there are no point-to-point rates for Lane B-17 or any other AQM movement. Therefore, NS was forced to use the mileage scale rates, which are designed for occasional back-up movements Although NS accurately calculated the mileage base rate, it omitted the cleaning charge. {{ }}. See NS Reply WP "0059-103.xls," Original Page 32" worksheet, in the Sentinel contract folder Assuming that actual cost would be comparable to the {{ }} per truck rate that DuPont used to calculate the {{ }} rate, the NS per rail car equivalent truck cost increases by {{ }} to {{ }}, which makes the truck rate {{ }} higher than the rail rate

ignores DuPont's evidence that four separate *force majeure* events at Belle in 2010 caused DuPont to ration its methylamines production across its customer base by using expedited truck shipments to supply a customer whenever a shortage threatened to shut down their plant.[278] This is consistent with DuPont's argument that trucks are not used to serve rail customers over long distances except when expedited transportation is required.

Finally, NS has not factored in the additional infrastructure that DuPont must build at Belle in order to increase its AQM storage capacity and to reconfigure its piping to permit more trucks to be loaded.

Lane B-33 (Belle to St. Joseph, MO): This gateway rate from Belle to Kansas City, MO applies only to Lane B-33. NS contends that a {{ }} lower truck rate for this 800-mile movement constitutes effective competition.[279] NS Reply II-B-169 This NS evidence and argument is both factually and logically flawed.

First, NS inappropriately used the Sentinel contract for the direct truck rate This point is identical to the same discussion under Lane B-8, above. Therefore, DuPont incorporates that discussion by reference.[280]

Second, NS ignores the fact that this rate differential is attributable solely to a {{ }} NS rate increase in 2011. Dup. Op. Narr. II-B-116, Dup Op Ex II-B-3. In contrast, the connecting carrier on this route, UP, raised its rate by {{ }}, which illustrates the degree

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[278] See Dup Op Narr II-B-104 n 228 Although this footnote appears in the AIIM evidence, it applies equally to AQM shipments because AQM is just AIIM diluted in water. Id. at II-B-114

[279] DuPont has calculated a {{ }} lower truck rate. Dup Op Narr. II-B-116 The difference is attributable to the use of different carrier contracts to develop truck rates DuPont used {{ }}, whereas NS used Sentinel

[280] In addition to inappropriately using Sentinel in the first place, NS also did not calculate the Sentinel rate correctly Because AQM transportation is not within the Sentinel scope of work, there are no point-to-point rates for Lane B-33 or any other AQM movement Therefore, NS was forced to use the mileage scale rates, which are designed for occasional back-up movements Although NS accurately calculated the mileage base rate, it omitted the cleaning charge. {{ }} See NS Reply WP "0059103 xls," "Original Page 32" worksheet, in the Sentinel contract folder Assuming that actual cost would be comparable to the {{ }} per truck rate that DuPont used to calculate the {{ }} rate, the NS per rail car equivalent truck cost increases by {{ }} to {{ }}, which makes the truck rate {{ }} lower than the rail rate.

to which NS has exerted its market power After NS has increased its rate over such a short period and by such substantial amounts, it is not surprising that NS's ability to raise its rate any further might appear to be constrained. The reality, however, is that NS has increased its rate to match that of a much higher cost alternative.

Finally, NS has not factored in the additional infrastructure that DuPont must build at Belle in order to increase its AQM storage capacity and to reconfigure its piping to permit more trucks to be loaded.

n. Petroleum Coke[281]

In its Opening Evidence, DuPont challenged 5 NS rates for transporting calcined petroleum coke ("Pet Coke") to DuPont's Edge Moor facility from 5 origins NS, in its Reply Evidence has contested market dominance over all of these rates, which involve the following joint-line movements

Table II-B-9
Contested Pet Coke Lanes

Lane #	Origin	Interchange	Destination	Supplier
B-48	Cresap, WV	Hagerstown	Edge Moor, DE	Rain CII
B-69	Enid, OK	East St Louis	Edge Moor, DE	Oxbow Calcining International LLC
B-75	Lemont, IL	Chicago	Edge Moor, DE	Oxbow Calcining International LLC
B-98	Enid, OK	East St. Louis	Edge Moor, DE	Oxbow Calcining International LLC
B-123	Lemont, IL	Chicago	Edge Moor, DE	Oxbow Calcining International LLC

While the rates on Lanes B-69 and B-98 cover the same geographical movement, the B-69 rate applies to transportation in private railcars, and the B-98 rate applies to transportation in NS-owned railcars.[282] The same is true for Lanes B-75 and B-123, respectively [283]

NS's argument turns on its understatement of the costs that DuPont must incur to modify the Edge Moor facility to receive a substantial amount of Pet Coke truck shipments. First, NS characterizes the {{ }} cost of these modifications as "not an unreasonable amount for a shipper to spend to take advantage of a competitive option, particularly one that could replace nearly { } railcars every year "[284] But DuPont ships less than { } carloads of Pet Coke on

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[281] The evidence and testimony in this section is jointly sponsored by Mary Pileggi, Logistics Manager-NA Region, and Paul Kostrzewski, Senior Buyer -Petroleum Coke.

[282] Dup. Op. Narr II-B-123

[283] Id

[284] NS Reply II-B-162

average to Edge Moor each year.[285] NS arrives at its railcar count by failing to differentiate between carloads shipped under the rates for private railcars and the rates for NS-owned railcars. Thus, NS counts each carload twice, under each type of rate.[286] Accordingly, the cost of these modifications will be spread across a smaller volume of traffic than NS claims.

Indeed, DuPont would not be able to break-even, in nominal dollars, the modification cost within {{ }}, based on its 2011 shipment data. In 2011, the last full year for which NS provided traffic counts for the case lanes, DuPont shipped {{ }} carloads of Pet Coke to Edge Moor, across all 5 issue movements.[287] NS alleges that DuPont would {{ }} per carload by transloading this traffic.[288] At this {{ }} rate, recouping the {{ }} modification cost would require DuPont to shift {{ }} carloads to the transload alternative that NS proposes. This would require DuPont to shift {{ }} of its 2011 volume for {{ }} (which was higher than the yearly average from 2008 through 2011). Moreover, these calculations do not take into account DuPont's cost of capital, which would extend the recovery period even further. Thus, NS's claim that {{ }} is a reasonable amount to spend to take advantage of a competitive option is not credible for these issue movements.[289]

Second, NS inappropriately dismisses necessary expenses listed in DuPont's cost estimate for the modifications. Specifically, NS claims that the only legitimate expense is the {{ }} cost of a new building over the existing rail hopper, with enough clearance for

[285] NS Reply Ex. II-B-5

[286] NS Reply WP "Exhibit II-B-5 errata & backup." That is, for each rate covering a Pet Coke origin-destination pair, NS counts the total number of railcars that travel between the origin-destination pair instead of the total number of rail cars that travel between the origin-destination pair under that rate.

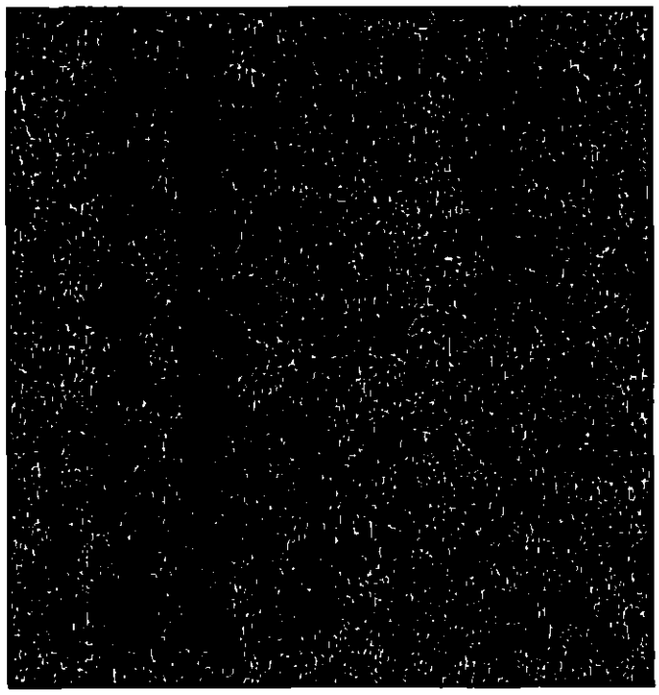
[287] NS Reply Ex. II-B-5. Only Lanes B-75 and 123 had any traffic in 2011. Because these lanes are the same movement, NS Reply Ex. II-B-5 reflects the same {{ }} rail cars in each lane.

[288] NS Reply Ex. II-B-3

[289] NS Reply II-B-162

trucks.[290] NS concludes that other items like {{ }} are unnecessary. But, as DuPont explained on pages II-B-124 and -125, DuPont's existing facility is a covered railcar unloading spot, where cars bottom-unload Pet Coke through floor grates and onto conveyors that are beneath the floor. Because there is no road access to the unloading spot and the track leading to and from the unloading spot is exposed, DuPont must construct road access and spend an additional {{ }}[291] on installing new star track and associated paving to permit the trucks to drive along the track and unload onto the conveyors. Figure II-B-1 is a schematic of the modifications that DuPont must make to the railcar unloading spot to facilitate increased truck unloading

Figure II-B-1[292]
Diagram of Pet Coke Unloading Spot Modifications{{



}}

[290] NS Reply II-B-162

[291] Dup Op WP "Coke Unloading Study," "Buildings" worksheet, in the "Pet Coke" folder

[292] The parallel blue lines roughly identify the road that needs to be constructed

Also, the {{ }} figure that NS cites is the basic estimate of the building, and does not include a reasonable contingency factor, freight costs for the material, quality assurance and procurement costs, and other costs that DuPont must factor in before even attempting to build the structure.[293] Indeed, the estimate that DuPont provided shows that these costs compose a substantial portion of the estimate.

In the discussion of the individual Pet Coke issue movements below, DuPont points to dramatic NS rate increases that range from 53-171% over a brief 2-year period, from 2009-11, as evidence of the exercise of NS market power After NS has increased its rates over such a short period and by such substantial amounts, it is not surprising that NS's ability to raise its rates any further might appear to be constrained. But, it is fundamentally illogical for market power to exist only until a railroad actually exercises that power. Therefore, NS's claim that its alternative truck rate is an effective competitive constraint simply is not credible

Although NS claims that such dramatic rate increases were "{ }," that cannot explain the full magnitude of these rate increases.[294] NS alleges that DuPont's legacy contract that expired in 2009 { }.[295] This translates to a 46.8% increase in the contract rates over that time.[296] But during that same time NS's variable costs for transporting Pet Coke increased by 74.6%, which would justify only a 19% post-contract rate increase.[297]

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[293] See Dup. Op. WP "Coke Unloading Study," "Total" worksheet, in the "Pet Coke" folder. For example, DuPont includes {{ }} for PG&S (Power, General, and Services), which includes the road costs. Also, DuPont includes {{ }} for L&HO (Engineering and Home Office), which accounts for engineering and administrative support costs associated with the project.

[294] NS Reply II-B-92

[295] Id. at II-B-92 to -93.

[296] Dup. Reb. Ex. II-B-1, at 1.

[297] Dup. Reb. Ex. II-B-1, Attachment 1, columns (8), (9)

The remainder of this section responds to the NS Reply Evidence as to each of the contested lanes:

Lane B-48 (Cresap, WV to Edge Moor). The challenged rate on Lane B-48 is NS's rate from Hagerstown, MD to Edge Moor. NS claims that a {{[redacted]}}[298] direct truck rate and an {{[redacted]}}[299] rail-truck transload option constitute effective competition.[300]

First, NS has not used a proper motor carrier or proper rate to calculate the direct truck rate DuPont calculated the direct truck rate for this lane in its Opening Evidence using its contract with Quality Carriers,[301] whereas NS used a contract with Blue Flash Express [302] The direct truck rate in the Quality Carriers contract is {{[redacted]}} the challenged rate, whereas the Blue Flash Rate used by NS is {{[redacted]}} the challenged rate [303] NS cannot use the Blue Flash Express contract because Blue Flash does not have equipment available to handle Pet Coke and its terminals are not located near the supplier's site in Cresap, WV.[304] Indeed, NS uses a rate for hopper trucks,[305] but DuPont expressly stated in discovery that dump trucks are needed [306] Accordingly, market dominance should be determined with reference to the {{[redacted]}} direct truck rate that DuPont calculated as the lowest cost direct truck alternative in its Opening Evidence [307]

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[298] NS Reply Ex II-B-2

[299] NS Reply Ex II-B-3

[300] NS Reply II-B-162 to -163

[301] Dup Op Ex II-B-1

[302] NS Reply Ex II-B-2

[303] Dup Op Ex II-B-1

[304] Blue Flash's website indicates that Blue Flash has terminals in New Iberia, LA, Gable, SC, Markham, IL, Jonesboro, GA, and Charlotte, NC Blue Flash Express, LLC, http //www blfe com/railyard asp (last visited April 4, 2013)

[305] Dup. Op WP "Blue Flash Express #0801-0001 Exhibit A.xls," "Original Page 2" worksheet, in the "Truck Contracts" folder.

[306] NS Reply WP "Trailer Types and Specifics Info xls" in the "Other Documents Produced by DuPont" folder, "DuPont INT Response on Truck Type" subfolder

[307] Dup Op Ex. II-B-1

Second, NS ignores the fact that the rail rate came to {{ }} the truck rate and {{ }} upon the transload rate only after recent and sizeable NS rate increases In 2010, NS increased its rate by {{ }}. and in 2011, it increased the rate by an additional {{ }} for a cumulative two-year rate increase of {{ }} [308] In contrast. during this same period, the connecting carrier increased its rates by a cumulative {{ }}. which illustrates the degree to which NS has exerted its market power

Indeed. under NS's logic. transloading would not have been effective competition before 2010 because NS's total transloading cost exceeded the total cost of rail by more than the 20% threshold[309] that NS uses to determine effective competition. Yet now that NS has exercised its market power by aggressively increasing its rate to within 20% of the transload option rate, NS claims it no longer has market dominance. Acknowledging the existence of market dominance only up until the market dominant railroad exercises its market power is fundamentally illogical. Therefore. NS's claim that the total transloading cost is an effective competitive constraint is not credible

Moreover. that NS voluntarily imposed a large cumulative increase over a short period, placing the rail rate {{ }} than the direct truck rate. confirms that NS truly does not believe that trucking is a viable alternative to rail on this lane. Indeed. trucks do not transport any of the Pet Coke that travels from Cresap to Edge Moor.[310] even after these increases.

Third. NS has not factored in the infrastructure modifications that DuPont must make at Edge Moor to increase its truck unloading capacity

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[308] Dup Op Ex. II-B-3

[309] In 2009. the cost of rail was {{ }}. Dup Op Ex II-B-3 Thus. the {{ }} total transloading cost that NS uses in NS Reply Exhibit II-B-3 is {{ }} than the 2009 rail cost.

[310] NS Reply WP "DuPont Petcoke Truck Shipments."

Lanes B-69 and B-98 (Enid, OK to Edge Moor). The challenged rates on Lanes B-69 and B-98 apply to the same geographical joint-line segment, from East St Louis to Edge Moor, but as explained above, the B-69 rate applies to transportation in private railcars, and the B-98 rate applies to transportation in NS-owned railcars.[311] NS, in its Reply Evidence, has contested market dominance over both lanes, contending that a {{ }} transload option cost constitutes effective competition.[312]

NS ignores the fact that the rail rate came to {{ }} the transload option cost only after recent and sizeable NS rate increases. In 2010, NS increased its Lane B-69 rate by { }, and in 2011, it increased the rate by an additional { } for a cumulative two-year rate increase of { }.[313] As for Lane B-98, NS increased its rate by { } in 2010, and in 2011, it increased the rate by an additional { }, for a cumulative two-year rate increase of { }.[314] In contrast, during this same period, the connecting carrier increased its rates by a cumulative {{ }}, which illustrates the degree to which NS has exerted its market power.

Indeed, under NS's logic, transloading would not have been effective competition before 2011 on Lane-B-69 and 2010 on Lane B-98 because NS's total transloading cost exceeded the total cost of rail by more than the 20% threshold[315] that NS uses to determine effective competition. However, now that NS has exercised its market power by aggressively increasing its rate {{ }} the transload rate, NS claims it no longer has market dominance. Acknowledging the existence of market dominance only up until the market dominant railroad

[311] Dup Op Narr II-B-123.

[312] NS Reply II-B-163.

[313] Dup. Op Ex II-B-3

[314] Dup Op Ex II-B-3

[315] In 2010, the cost of rail on Lane B-69 was {{ }} Dup Op Ex II-B-3 Thus, the {{ }} total transloading cost that NS uses for Lane B-69 in NS Reply Exhibit II-B-3 is {{ }} than the 2010 rail cost. For Lane B-98, the 2009 cost of rail was {{ }} Dup Op. Ex. II-B-3 Thus, the {{ }} total transloading cost that NS uses for Lane B-98 in NS Reply Exhibit II-B-3 is {{ }} than the 2009 rail cost.

exercises its market power is fundamentally illogical. Therefore, NS's claim that the total transloading cost is an effective competitive constraint is not credible.

Moreover, that NS voluntarily imposed a large cumulative increase over a short period, placing the rail rate {{ }} than the transloading cost, confirms that NS truly does not believe that transloading is a viable alternative to rail on this lane. Indeed, DuPont does not transload the Pet Coke that travels from Enid to Edge Moor,[316] even after these increases.

Finally, NS has not factored in the infrastructure modifications that DuPont must make at Edge Moor to increase its truck unloading capacity.

Lanes B-75 and B-123 (Lemont, IL to Edge Moor). The challenged rates on Lanes B-75 and B-123 apply to the same geographical joint-line segment, from Chicago to Edge Moor, but as explained above, the B-75 rate applies to transportation in private railcars, and the B-123 rate applies to transportation in NS-owned railcars.[317] NS, in its Reply Evidence, has contested market dominance over both lanes, contending that an approximately {{ }} transload option cost constitutes effective competition.[318]

NS ignores the fact that the rail rate came to {{ }} the transload option cost only after recent and sizeable NS rate increases. In 2010, NS increased its Lane B-75 rate by { }, and in 2011, it increased the rate by an additional { } for a cumulative two-year rate increase of { }.[319] As for Lane B-123, NS increased rate by { }, and in 2011, it increased the rate by an additional { } for a cumulative two-year rate increase of { }.[320] In contrast, during

[316] See NS Reply WP "DuPont Petcoke Truck Shipments."

[317] Dup Op Narr II-B-123

[318] NS Reply II-B-161

[319] Dup. Op. Ex. II-B-3

[320] Dup. Op. Ex. II-B-3

this same period, the connecting carrier increased its rates by a cumulative {{ }}, which illustrates the degree to which NS has exerted its market power

Indeed, under NS's logic, transloading would not have been effective competition before 2010 on these lanes because NS's total transloading cost exceeded the total cost of rail by more than the 20% threshold[321] that NS uses to determine effective competition. However, now that NS has exercised its market power by aggressively increasing its rate {{ }} the transload rate, NS claims it no longer has market dominance. Acknowledging the existence of market dominance only up until the market dominant railroad exercises its market power is fundamentally illogical. Therefore, NS's claim that the total transloading cost is an effective competitive constraint is not credible.

Moreover, that NS voluntarily imposed a large cumulative increase over a short period, placing the rail rate {{ }} than the transloading rate, confirms that NS truly does not believe that transloading is a viable alternative to rail on this lane. Indeed, DuPont does not transload the Pet Coke that travels from Lemont to Edge Moor,[322] even after these increases.

Finally, NS has not factored in the infrastructure modifications that DuPont must make at Edge Moor to increase its truck unloading capacity.

[321] In 2009, the cost of rail on Lane B-75 was {{ }} Dup Op. Ex II-B-3 Thus, the {{ }} total transloading cost that NS uses for Lane B-75 in NS Reply Exhibit II-B-3 is {{ }} than the 2009 rail cost For Lane B-123, the 2009 cost of rail was {{ }} Dup Op Ex II-B-3 Thus, the {{ }} total transloading cost that NS uses for Lane B-123 in NS Reply Exhibit II-B-3 is {{ }} than the 2009 rail cost

[322] See NS Reply WP "DuPont Petcoke Truck Shipments"

o. Polyethylene[323]

In its Opening Evidence, DuPont challenged two NS rates for low density polyethylene ("Polyethylene") over four case lanes comprising two origins and two destinations. NS, in its Reply Evidence, has contested market dominance over both rates, but only for the following 3 issue movements:[324]

Table II-B-10
Contested Polyethylene Lanes

Lane #	Origin	Interchange	Destination	Customer
B-45	Bloomington, TX	E. St. Louis, IL	Washington, NJ	Albea f/ka Twist Beauty Packaging
B-82	Orange, TX	New Orleans, LA	Greenville, SC	Rexam
B-83	Orange, TX	E St. Louis, IL	Washington, NJ	Albea f/k/a Twist Beauty Packaging

The two origins are DuPont production facilities in Texas. Each plant ships to both customer destinations, which are captive to NS. NS handles each movement from an interchange point with the origin carrier to the destination.

NS practically scoffs at the notion that it could even possess market dominance over the transportation of polymers simply because polymers can be, and are, trucked and transloaded NS Reply II-B-169 to -171. But NS all but ignores that there is a much higher cost associated with providing these transportation alternatives and that the polymer industry has an extensive investment in infrastructure that is built around rail transportation [325] As a consequence of these

[323] The evidence and testimony in this section is jointly sponsored by Mary Pilegge, Logistics Manager-NA Region, and Travis Bond, Global Supply Chain Manager.

[324] NS has not contested market dominance over Lane B-44, even though the challenged rate from the New Orleans interchange to the Greenville, SC destination is the same as Lane B-82

[325] E.g., GWI Switching Servs., L.P – Operation Exemption – Lines of S. Pac. Transp. Co., STB Docket No 32481, slip op at 2 (served Aug. 7, 2001) ("[I]t has been the practice [of polymer manufacturers] to load the pellets into shipper-controlled covered

higher costs, direct trucking is used only for serving non-rail destinations, for short hauls, for small volumes, or for expedited shipments. Dup. Op. Narr II-B-130. Similarly, transloading is used primarily to serve non-rail destinations at longer distances more economically than direct trucking or to expedite a shipment to a rail-served customer when there is inventory at a bulk terminal that is closer than the production plant Id. at II-B-133 to -134. The fact that railroads can and do exercise market dominance over the transportation of polymers is evidenced by the Board's recent decision in M&G Polymers USA, LLC v. CSX Transportation, Inc., Docket NOR 42123 (served Sept 27, 2012), concluding that CSXT possessed market dominance over 36 of 42 challenged rates that were applicable to 60 of 69 issue movements.

The derision in the NS Reply is most evident when attacking DuPont's summary of the testimony presented by a former railroad executive, Larry Ruple, on behalf of the Society of the Plastics Industries ("SPI"), in Union Pac. Corp et al —Control and Merger—Southern Pac. Rail Corp et al., Finance Docket No. 32760. See Dup Op. Narr. II-B-130 to -133 Rather than focus upon the substance of that evidence, NS attacks DuPont for presenting evidence that mirrors a portion of the evidence submitted by Total Petrochemicals USA, Inc. in Docket NOR 42121. NS Reply II-B-170 But the similarity between the evidence is not surprising, because both complainants quoted extensively from Mr. Ruple's testimony, and DuPont and Total are represented by the same counsel. Also, there is no need to reinvent the wheel to make the same point in both proceedings

When NS finally does say something substantive about this DuPont evidence, it completely misses the point. NS tries to miscast DuPont's evidence as dated and focused on just "some polyethylene consumers." NS Reply II-B-171. But DuPont submitted this evidence to

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hopper cars for Storage-In-Transit "): Union Pac. Corp. – Control and Merger – S. Pac. Rail Corp., 1 S.T.B. 233, 426 (1996) ("There is widespread agreement among the parties that SIT capacity is a critical element in service to the plastics industry.")

show how and why the entire polymer industry is so dependent upon rail transportation and to show that this dependency is not unique to DuPont or just a few customers. This is highly relevant to the third enumerated market dominance factor in Market Dominance Determinations, 365 I.C.C at 133, which considers the amount of polyethylene transported using trucks by shippers with similar needs. Through this evidence, DuPont has demonstrated that its dependency upon rail is no different from those of the polymer industry as whole. Moreover, this evidence is more true today than it was 16 years ago, as the industry has continued to increase its investment in rail infrastructure.

NS also wrongly asserts that the SPI testimony is irrelevant because it was rejected by the Board in Union Pacific Corp.—Control and Merger—Southern Pacific Rail Corp., 1 S.T.B 233, 394-96 (1996) NS Reply II-B-171 n.170 The Board did not reject SPI's testimony as to the dependence of polymer producers and consumers upon rail transportation. The portion of the decision that NS cites to support its proposition clearly indicates that the Board rejected SPI's contention that the merger would reduce rail competition, because UP had negotiated a settlement agreement that would replace competition previously provided by SP with new competition from BNSF. That competition has worked out well, as exemplified by the competitive rates that DuPont receives on the origin segments of the issue traffic. DuPont's Complaint, in contrast, covers the captive NS destinations that were not the subject of the foregoing merger decision.

Principally, NS relies upon the fact that DuPont has transported {{[redacted]}}[326] polyethylene shipments by truck over the 5-year period from 2006 to 2010. NS Reply II-B-169.

[326] Although NS refers to {{[redacted]}} trucks, the correct number is {{[redacted]}} Dup Reb WP "DuPont Plastics Truck Shipments (corrected)-Rebuttal xlsx," "Rail Capability" worksheet DuPont attributes this discrepancy to NS's failure to account for duplicate invoice records and the different types of billing records in the data To obtain an accurate count of truck shipments using DuPont's truck bill records, it is necessary to filter the records to show only linehaul bill types (each shipment is the subject of only one linehaul bill, but may be the subject of multiple balance due bills or other bills) and remove linehaul records

But Market Dominance Determinations, at 133, is clear that this fact does not establish effective competition All that this fact can establish is that trucks are a physically feasible alternative to rail. When it comes to determining whether an alternative is an effective competitive constraint, the relevant issue is the quantity of polyethylene that is transported by truck where rail alternatives are available under transportation circumstances similar to rail Of DuPont's {{[redacted]}} polyethylene truck shipments, {{[redacted]}}, or 80% were to destinations without rail service.[327] Furthermore, only {{[redacted]}} of the {{[redacted]}} rail-to-truck transload shipments, or 6%, were delivered to rail-served destinations.[328] These facts are strong indicators that trucks do not compete for most rail-served customers either directly or through a rail-to-truck transload.

Finally, as DuPont discussed at page II-B-135 of its Opening Evidence, DuPont and NS must include inventory carrying costs in the transloading costs that they use in their evidence. Once again, NS's first line of attack is to accuse DuPont of "crib[ing]" from Total's arguments. NS Reply II-B-171. But of course DuPont would raise the same point as Total, because inventory carrying costs are an expense for all polymer producers when selling through bulk terminals.

Contrary to NS's charge, inventory carrying costs are not "a quirk of DuPont's invoicing practices." Id When DuPont ships a rail car directly to a customer, DuPont can book that sale and invoice the customer immediately. When DuPont ships a rail car to a bulk terminal, there is no customer for DuPont to invoice, because it has not made a sale. The sale occurs when the

containing a duplicate document number (a document number is associated with only one shipment) See Dup Op WP "Polyethylene Truck Shipments xls," 'Notes" worksheet, in the "Polyethylene' folder (explaining adjustments that DuPont made to remove inaccurate and duplicate records) A corrected version of the NS reply workpaper is included as DuPont Rebuttal Workpaper ' DuPont Plastics Truck Shipments (corrected)-Rebuttal.xlsx, ' and contains an "Adjustments" worksheet that identifies all adjustments that DuPont made to the data in the workpaper All further computations and references to polyethylene trucks in DuPont's rebuttal evidence are based upon DuPont's truck count

[327] Dup Reb WP 'DuPont Plastics Truck Shipments (corrected)-Rebuttal xlsx," "Rail Capability" worksheet

[328] Id.

customer orders a truck from the bulk terminal, which is the first opportunity that DuPont has to invoice the customer. There is no definitive way for DuPont to know how long it will have to carry the rail car contents in its inventory at the bulk terminal before the customer places a truck order. Also, although a rail car can hold the equivalent of four trucks of polyethylene, the truck customer will only purchase one truck at a time, which further defers DuPont's ability to invoice for the latter-timed truck deliveries

NS seems to believe that inventory carrying costs are an invoicing "quirk" based upon an unrealistic assumption that DuPont would ship a rail car to a bulk terminal only after it received a truck order from the customer, which would enable DuPont to invoice the customer at the same time as a direct rail shipment. But that would be completely unacceptable to a customer who orders trucks. Customers order rail cars well in advance of their needs because they can use the cars for storage In the absence of this on-site rail car inventory, customers expect a truck order to be delivered within 48 hours. This, of course, would be impossible if the shipment originated by rail and had to move through a bulk terminal for transloading into trucks Therefore, DuPont must anticipate its customers' polyethylene needs and stage an inventory of loaded rail cars at bulk terminals near its customers in order to be able to respond quickly to a truck order. That inventory effectively is dedicated to the customer(s) served through that bulk terminal, even though DuPont is unable to invoice those customers until they actually place an order. The practical effect of this is that DuPont becomes responsible for the inventory carrying costs at the bulk terminal, instead of the customer carrying the inventory on its books at the destination when it receives a rail car delivery.

The remainder of this section responds to the NS Reply Evidence as to each of the 3 contested polyethylene lanes:

Lane B-45 (Bloomington, TX to Washington, NJ): This is a gateway rate from the East St. Louis interchange with UP to Washington, NJ. NS contends that a {{[redacted]}} rate for a transload alternative in Philadelphia constitutes effective competition. NS Reply II-B-171 to -172. Although DuPont evaluated on page II-B-134 of its Opening Evidence a transload alternative at the same bulk terminal that NS uses, it calculated a rate that was {{[redacted]}} because it used a different motor carrier. As DuPont discussed at page II-B-135 of its Opening Evidence, this transload rate differential would actually be even higher because of inventory carrying costs. DuPont has addressed inventory carrying costs in the general discussion of polyethylene above.

Even using the NS-selected carrier, {{[redacted]}}. DuPont has not been able to replicate the NS truck rate from the contract purportedly used by NS. The correct truck rate is {{[redacted]}}[329] This adds up to {{[redacted]}}, which at 4 trucks per rail car equals {{[redacted]}} per rail car equivalent. When added to the rail cost of {{[redacted]}} and the bulk terminal charge of {{[redacted]}}, the total transload cost should be {{[redacted]}}, rather than the {{[redacted]}}[330] calculated by NS. This is even higher than the rate calculated by DuPont in its Opening Exhibit II-B-2.

Lane B-82 (Orange, TX to Greenville, SC): This is a gateway rate from the New Orleans interchange with UP to Greenville, SC. NS contends that a {{[redacted]}} higher direct truck rate for this 831-mile movement constitutes effective competition. NS Reply II-B-172.

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[329] NS Reply WP "006024.xls," "5th Revised Page 4," "4th Revised Page 6," "1st Revised Page 7" worksheets, in the "DuPont Trucking Contracts" folder, "{{[redacted]}}" subfolder. NS Reply WP "{{[redacted]}}," in the "DuPont Trucking Contracts" folder, "{{[redacted]}}" subfolder.

[330] NS Reply Ex. II-B-3.

DuPont accepts the NS direct truck rate with one adjustment. NS omitted a {{ }} per vacuum transfer charge.[331] which at a ratio of 3 trucks per rail car for this movement,[332] adds {{ }} to the NS estimated truck cost of {{ }} for a total truck cost of {{ }} [333] This makes the NS alternative {{ }} higher than the rail rate. In either case, this is above the 10% threshold used by DuPont, and very close to the 20% threshold used by NS.

In arguing that this higher truck rate is a competitive constraint merely because it is not more than 20% above the challenged rail rate, NS is oblivious to the absurdity that a truck rate would be a competitive constraint upon a rail rate on an 831-mile movement. Truck transportation clearly is a higher cost service at such long distances, because it requires more equipment, personnel and fuel to transport the same volume as rail transportation. This distance is well beyond any range that trucks have ever been considered to be competitive with rail. See Dup. Op. Narr I-28 n.28. Thus, far from demonstrating that trucks are an effective constraint, the NS evidence demonstrates that NS has exercised its market power to the outer limits permitted by a higher cost truck alternative. DuPont (Plastics), slip op. at 7-8 (noting that the "outer limit" constraint of a higher cost alternative does not equate to "effective competition")

Lane B-83 (Orange, TX to Washington, NJ): This is a gateway rate from the East St Louis interchange with UP to Washington, NJ NS has presented both a direct truck and a transload alternative for this movement. While the rates for both of NS's alternatives are higher than the challenged rate, the direct truck rate is {{ }} higher and the transload rate is {{ }} higher.

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[331] NS Reply WP "006024.xls," "1st Revised Page 7" worksheet, in the "DuPont Trucking Contracts" folder, "A&R Transport" subfolder

[332] DuPont uses smaller capacity rail cars for Lane B-82

[333] See NS Reply Ex II-B-2.

DuPont accepts the NS direct truck rate with one adjustment, which makes that rate {{ }} higher. This is the same adjustment that DuPont made to the NS direct truck rate for Lane B-82, above. Regardless whether the Board uses the DuPont or the NS rate, that rate is above the 10% threshold used by DuPont, and close to the 20% threshold used by NS. Also as with Lane B-82, it is absurd for NS to contend that a direct truck rate is an effective competitive constraint over 1440 miles.

DuPont does not accept the NS transload rate. DuPont has not been able to replicate the NS truck rate from the {{ }} contract purportedly used by NS. The correct truck rate is {{ }}.[334] This adds up to {{ }}, which at 3 trucks per rail[335] car equals {{ }} per rail car equivalent. When added to the rail cost of {{ }} and the bulk terminal charge of {{ }}, the total transload cost should be {{ }}, rather than the {{ }}[336] calculated by NS. This corrected cost is {{ }} higher than the total rail cost. Moreover, the inventory carrying cost would further inflate this differential.

[334] NS Reply WP "006024.xls," "5th Revised Page 4," "4th Revised Page 6," "1st Revised Page 7" worksheets, in the "DuPont Trucking Contracts" folder, "A&R Transport" subfolder.

[335] DuPont uses smaller capacity rail cars for Lane B-83.

[336] NS Reply Ex. II-B-3.

p. Sodium Methylate[337]

In its Opening Evidence, DuPont challenged an NS rate for transporting sodium methylate over Lane B-86, which is a joint-line movement from DuPont's facility at Strang, TX to its facility at Lemoyne, AL. The NS rate covers the New Orleans to Lemoyne segment of the movement. NS, in its Reply Evidence, has contested market dominance over this lane, claiming that {{ }} direct truck transportation constitutes effective competition.[338]

NS ignores that the difference in cost between rail and direct truck transportation is the result of very recent and large NS rate increases. From 2009 to 2011, the NS rate has increased {{ }}.[339] In contrast, over that same period, the connecting carrier on this lane raised its rates by {{ }}.[340] which illustrates the degree to NS has already exercised its market power. Moreover, that NS voluntarily imposed such a large cumulative increase in such a short period, placing the rail rate {{ }} than the direct truck rate, confirms that NS truly does not believe that trucking is a viable alternative to rail on this lane. Indeed, trucks do not transport any of the sodium methylate that travels from Strang to Lemoyne,[341] even after these increases.

Although NS claims that such dramatic rate increases were "{ }," that cannot explain the full magnitude of these rate increases.[342] NS alleges that DuPont's legacy contract that expired in 2009 {

[337] The evidence and testimony in this section is jointly sponsored by Mary Pileggi, Logistics Manager-NA Region, and Greg Rupert, Senior Process Engineer.

[338] NS Reply II-B-185

[339] Dup Op Ex. II-B-3

[340] Id.

[341] NS Reply WP "DuPont Sodium Methylate Truck Shipments"

[342] NS Reply II-B-92

{[redacted]}.[343] This translates to a 46.8% increase in the contract rates over that time.[344] But during that same time NS's variable costs for transporting sodium methylate increased by 56.7%, which would justify only a 6.7% post-contract rate increase.[345] This is far less than the {[redacted]} NS rate increases since the contract expired.

Insufficient truck loading capacity nearly eliminates DuPont's ability to use trucks on this lane. In its Opening Evidence, DuPont noted that there is only 1 truck loading spot at Strang, and it only has the capacity to support limited loading operations.[346] DuPont also noted that, because this spot is in constant use by another business unit, DuPont can only use the spot to load 1-2 shipments a month, depending on whether the other business unit has a break in its loading operations.[347] Moreover, the low annual lane volume[348] does not eliminate this obstacle because DuPont produces and ships sodium methylate in 3 month campaigns that produce up to 8 railcars.[349] In fact, DuPont's Strang facility did not ship any truck shipments of sodium methylate from 2006 through 2010,[350] which confirms the significance of these truck loading obstacles.

DuPont's ability to ship by truck is also constrained by its reliance on railcars for storage at Lemoyne.[351] To remove this impediment, DuPont must construct fixed storage for {{[redacted]}}.[352]

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[343] Id. at II-B-92 to -93.

[344] Dup. Reb. Ex. II-B-1, at 1.

[345] Dup. Reb. Ex. II-B-1, Attachment 1, columns (8), (9).

[346] Dup. Op. Narr. II-B-136.

[347] Dup. Op. Narr. II-B-136 to -137.

[348] See NS Reply II-B-185.

[349] Dup. Op. Narr. II-B-136.

[350] See NS Reply WP "DuPont Sodium Methylate Truck Shipments."

[351] Dup. Op. Narr. II-B-137 to -138.

[352] Dup. Op. Narr. II-B-139.

In suggesting that DuPont can avoid these obstacles to trucking by transloading to trucks from railcar storage at Strang.[353] NS overlooks the costs and limitations of transloading. As DuPont explained on page II-B-137 of its Opening Brief, "[d]ue to environmental regulations, DuPont cannot simply pull a truck up to a railcar and transload—it must vent the railcar and truck to a vapor abatement device that is approved by the Environmental Protection Agency [] and the truck must be loaded on a concrete pad equipped with a sump system." DuPont only has one truck loading spot available to perform this operation, which is essentially unavailable for loading sodium methylate, as described above. Accordingly, to transload from railcar storage to trucks at Strang, DuPont will need to build a specially equipped loading spot, which DuPont estimates will cost {{ }}.[354] NS has not disputed the need for this special infrastructure nor recognized the cost of this infrastructure in its Reply.

Further complicating transloading is that Strang has only one railcar loading and unloading spot.[355] Thus, transloading must occur when this spot is not being used. Also, because Strang produces and stores sodium methylate in two concentrations, it takes 12-24 hours to swap railcars at this spot.

Moreover, NS's suggested direct truck solution does not avoid the need to build storage at Lemoyne. Lemoyne uses the sodium methylate in production campaigns, during which it needs 4 to 5 truckloads of sodium methylate per month. This demand far exceeds the 1-2 trucks per month that DuPont can transload from railcar storage at Strang and ship. Thus, to support its Lemoyne production campaigns without using railcar storage, DuPont will need to ship trucks well in advance of the production campaign and store the sodium methylate in fixed storage at

[353] NS Reply II-B-185

[354] Dup Op Narr II-B-137

[355] NS Reply WP "Barge and Truck Spots xls," in the "Other Documents Produced by DuPont" folder

Lemoyne Since Lemoyne only has enough fixed storage for just over 2 truckloads, it will need to build additional storage

NS's claim that effective competition is illustrated by the volume of sodium methylate truck shipments that DuPont has made to its customers completely ignores that those shipments involved a different grade of sodium methylate. As mentioned above, DuPont does not ship the grade of sodium methylate carried over Lane B-86 by truck

Finally, NS suggests a direct truck alternative that violates DMIR. Under DMIR, direct trucking to the final destination is not an alternative where the challenged rate only applies to an interchange. See supra Part I.A 2 g

q. Sulfur Trioxide (SO_3)[356]

In its Opening Evidence at II-B-141 to -145, DuPont challenged the NS rates for transportation of sulfur trioxide, which is a TIH, in two lanes. NS has contested its market dominance over just Lane B-102, while conceding its market dominance over Lane B-122. NS Reply II-B-187 to -188.

Lane B-102 is a gateway rate from an interchange with CSXT in Chattanooga, TN to a DuPont customer in Gracewood, GA. NS contends that a {{ }} lower direct truck rate for this 566-mile TIH movement constitutes effective competition. Id. at II-B-188; NS Reply Ex. II-B-2. But prior to substantial NS rate increases in 2010 and 2011, trucking was far more expensive than rail transportation over Lane B-102. Trucking became less expensive than rail for the very first time in 2010 when NS increased its Rule 11 rate by {{ }} followed by another {{ }} increase in 2011, for a cumulative two-year rate increase of {{ }}. Dup Op. Narr. II-B-144, Dup. Op. Ex. II-B-3. In contrast, over that same time frame, the connecting carrier on this route, CSXT, raised its rates by {{ }}, respectively, which illustrates the degree to which NS has exerted its market power.[357]

Under NS's logic, it would have possessed market dominance prior to 2010 because the direct truck rate exceeded the through rail rate by more than 20%, and thus was not an effective competitive constraint upon rail rates. NS Reply II-B-107. However, now that NS has exercised its market power by aggressively increasing its rate {{ }} the truck rate, NS claims it no longer possesses market dominance. After NS has increased its rate over such a short period and by such substantial amounts, it is not surprising that NS's ability to raise its rate any further

[356] The evidence and testimony in this section is jointly sponsored by Mary Pileggi, Logistics Manager-NA Region, and Ted Edward Morris, Operations Business Leader-Sulfur Products.

[357] This discrepancy is even more striking when one considers the fact that {{ }}. See Dup. Op. Ex. II-B-3.

might appear to be constrained. But, it is fundamentally illogical for market dominance to exist only until a railroad actually exercises that dominance. Therefore, NS's claim that its alternative truck rate is an effective competitive constraint simply is not credible

Although NS claims that this dramatic rate increase was "{ }," that does not explain the full magnitude of this rate increase.[358] NS alleges that DuPont's legacy contract that expired in 2009 { }.[359] This translates to a 46.8% increase in the contract rates over that time.[360] But during that same time NS's variable costs for transporting sulfur trioxide increased by 52.7%, which would justify only a 4.0% post-contract rate increase.[361] This cannot justify a { } rate increase.

NS also disregards the absurdity of a lower truck rate on a 566-mile TIH movement. Truck transportation clearly is a higher cost service at such long distances, because it requires more equipment, personnel and fuel to transport the same volume as rail transportation. This distance also is beyond the range that trucks historically have been considered to be competitive with rail. See Dup. Op. Narr. I-28 n.28.

Furthermore, NS ignores DuPont's equipment limitations for sulfur trioxide. At pages II-B-141 to -142 of its Opening Evidence, DuPont explained, based upon documents that it produced in discovery, that it uses dedicated, privately-owned DOT-312 trailers that are insulated and equipped with a glycol heating system. DuPont also explained that it has only 31 of these specialized trailers and that truck drivers must have special training. Significantly,

[358] NS Reply II-B-92

[359] Id. at II-B-92 to -93

[360] Dup Reb Ex II-B-1, at 1.

[361] Dup Reb Ex II-B-1, Attachment 1, columns (8), (9)

DuPont presented documented evidence that, due to equipment and driver limitations, it requires customers to pre-schedule truck deliveries. Id. at II-B-142 Because these capacity constraints exist at current truck volumes,[362] it is unrealistic to convert rail shipments to additional trucks, or to assume that rail-served customers would accept the inconvenience of these capacity constraints NS has not even attempted to address any of these facts.

Finally, NS fails to consider the TIH nature of the sulfur trioxide when it suggests that DuPont should truck an average of {[redacted]} rail cars annually,[363] which equates to {[redacted]} trucks,[364] over 566 miles.[365] DuPont does not use trucks to transport this TIH when rail is an option Of the {{[redacted]}} trucks that DuPont shipped over 5 years from 2006-10, {{[redacted]}}, or over 98%, were to destinations without rail access [366] This is consistent with DuPont's claim that trucks are primarily used to serve non-rail customers, or to serve rail customers over short distances, for small volumes, or for expedited shipments

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[362] NS incorrectly contends that DuPont shipped {{[redacted]}} truckloads of sulfur trioxide from 2006-10 NS Reply II-B-188 The correct number is {{[redacted]}} DuPont attributes this discrepancy to NS's failure to account for duplicate invoice records and the different types of billing records in the data To obtain an accurate count of truck shipments using DuPont's truck bill records, it is necessary to filter the records to show only linehaul bill types (each shipment is the subject of only one linehaul bill, but may be the subject of multiple balance due bills or other bills) and remove linehaul records containing a duplicate document number (a document number is associated with only one shipment) See Dup Op WP - DuPont Sulfur Trioxide Truck Shipments xls," "Notes" worksheet, in the "Sulfur Trioxide" folder (explaining adjustments that DuPont made to remove inaccurate and duplicate records) A corrected version of the NS reply workpaper is included as DuPont Rebuttal Workpaper "DuPont Sulfur Trioxide Truck Shipments-Rebuttal xlsx," and contains an "Adjustments" worksheet that identifies all adjustments that DuPont made to the data in the workpaper Even the correct lower volume, when averaged across all 5 years, means that each DuPont trailer must complete a round trip every 7 days New trailers must be specially built at a minimum cost of {{[redacted]}} each. Dup. Op Narr II-B-142

[363] See NS Reply Ex II-B-5

[364] NS incorrectly asserts that {[redacted]} trucks would be needed annually, because it calculated this figure using a fraction of a railcar and assumed that 1 railcar is equivalent to {[redacted]} trucks DuPont does not ship fractional amounts, and the conversion factor should be {[redacted]} trucks per railcar which is what NS used to compare its rate to the direct truck rate NS Reply WP "Direct Truck Analysis "

[365] The NS rail shipment evidence is inconsistent The NS traffic tapes produced in discovery show that {[redacted]} rail cars in 2009, and {[redacted]} in 2010, moved over Lane H-102 See Dup Reb. WP "Comparison of NS Waybill Data and NS Reply Exhibit II-B-5 pdf" However, NS Reply Ex II-B-5 shows only {[redacted]} rail cars, respectively, in each of those years Thus, there appears to be a significant undercount of rail cars, which means that even more trucks would be required If one averages the 2 years of rail cars in the NS traffic tapes, over {[redacted]} trucks would be needed

[366] Dup Reb. WP "DuPont Sulfur Trioxide Truck Shipments-Rebuttal xlsx," - Rail Capability" worksheet.

r. Titanium Dioxide[367]

In its Opening Evidence, DuPont challenged 15 NS rates for transporting titanium dioxide slurry from DuPont production facilities at Edge Moor, DE and New Johnsonville, TN to 25 destinations.[368] NS, in its Reply Evidence, has contested market dominance over 11 rates to the following 18 destinations:

Table II-B-11
Contested Titanium Dioxide Lanes

Lane #	Origin	Interchange	Destination	Customer
A-11	Edge Moor, DE	NS-Direct	Chicago, IL	Superior Carriers (Carry Transit)
A-12	Edge Moor, DE	NS-Direct	Chillicothe, OH	Ph Glatfelter
A-13	Edge Moor, DE	NS-Direct	Mahrt, AL	Meadwestvaco
B-50	Edge Moor, DE	Meridian, MS	Garland, TX	Valspar Corp.
B-51	Edge Moor, DE	Chicago, IL	Groos, MI	NewPage Corporation
B-52	Edge Moor, DE	E. St Louis, MO	Laredo, TX	DuPont Mexico (c/o Interamerica Forwarding)
B-55	Edge Moor, DE	Buffalo, NY	Port Huron, MI	Domtar Pulp & Paper Products Inc.
B-56	Edge Moor, DE	Mechanicville, NY; Ayer, MA	Portland, ME	Monson Companies Inc
B-58	Edge Moor, DE	Chicago, IL	Quinnesec, MI	Verso Paper
B-59	Edge Moor, DE	Mechanicville, NY, Ayer, MA	Rileys, ME	Verso Paper
B-60	Edge Moor, DE	Mechanicville, NY; Ayer, MA	Rumford, ME	NewPage Corporation
B-62	Edge Moor, DE	Mechanicville, NY, Ayer, MA	Shawmut, ME	SAPPI NA
B-67	Edge Moor, DE	Meridian, MS	West Monroe, LA	Graphic Packaging International
B-68	Edge Moor, DE	Chicago, IL	Wheeling, IL	Valspar Corp.

[367] The evidence and testimony in this section is jointly sponsored by Mary Pileggi, Logistics Manager-NA Region, and Leslie Muir, North America Logistics Planner, DuPont Titanium Technologies. Unless otherwise specified, all DuPont Rebuttal Workpapers referenced in this section are located in the "Titanium Dioxide" folder of the Part II-B DuPont Rebuttal Workpaper disk.

[368] Although there are 25 lanes, there are only 15 challenged rates because the NS segment for many of the movements is from the same origin to the same interchange point.

Lane #	Origin	Interchange	Destination	Customer
B-97	Edge Moor, DE	Cincinnati, OH	New Johnsonville, TN	DuPont
B-109	New Johnsonville, TN	Cincinnati, OH	Chapman, PA	Behr Process Corp
B-111	New Johnsonville, TN	Chattanooga, TN	Morrow, GA	Sherwin Williams Company
B-124	New Johnsonville, TN	Chattanooga, TN	McDonough, GA	Behr Process Corp.

NS's assertion that effective competition exists for eighteen titanium dioxide lanes is not based on fact or, in many lanes, real-world practice To form this assertion, NS misconstrues DuPont's truck shipment history for titanium dioxide and misrepresents DuPont's ability to shift some rail volumes of titanium dioxide to truck transportation in emergency situations as an ability to shift significant volumes to trucks on a sustained basis. NS also ignores the infrastructure investments needed to support a shift to trucks and the practical obstacles to transloading from trucks into rail cars, which does not occur in the real world. Moreover, NS downplays the degree to which DuPont's substantial investment in its railcar fleet and storage track discourages shifting traffic to truck transportation

DuPont's history of shipping titanium dioxide by truck confirms that trucks are not effective competition to NS rail transportation on the contested titanium dioxide lanes. A review of DuPont's titanium dioxide truck shipments reveals that only {{ }} of {{ }}[369] shipments from 2006 to 2010 involved the contested titanium dioxide lanes [370] Furthermore,

[369] NS incorrectly claims that DuPont shipped a total of {{ }} shipments. NS Reply II-B-128 NS fails to account for duplicate invoice records and the different types of billing records in the data To obtain an accurate count of truck shipments using DuPont's truck bill records, it is necessary to filter the records to show only linehaul bill types (each shipment is the subject of only one linehaul bill, but may be the subject of multiple balance due bills or other bills) and remove linehaul records containing a duplicate document number (a document number is associated with only one shipment) See Dup Op. WP "Titanium Dioxide Truck Shipments.xls," "Notes" worksheet, in the "Titanium Dioxide" folder (explaining adjustments that DuPont made to remove inaccurate and duplicate records) A corrected version of the NS reply workpaper is included as DuPont Rebuttal Workpaper "DuPont Titanium Dioxide Truck Shipments (corrected)-Rebuttal xlsx," and contains an "Adjustments" worksheet that identifies all adjustments that DuPont made to the data in the workpaper

[370] Dup. Reb. WP "DuPont Titanium Dioxide Truck Shipments (corrected)-Rebuttal," "Case Lane Shipments by Year" worksheet.

from 2008 to 2010, only {{ }} of the case lane shipments travelled by truck.[371] From this perspective, truck transportation can hardly be characterized as effective competition to NS rail transportation on the contested case lanes. Rather, DuPont's titanium dioxide shipment history merely indicates that trucking titanium dioxide is feasible, which is a fact that DuPont does not dispute.

Likewise, DuPont's history of transloading titanium dioxide from rail cars into trucks does not indicate that transloading from trucks into rail cars is feasible. DuPont does not do this in the real-world and is not aware of any other titanium dioxide producer who does so.[372] Nor has NS demonstrated that anyone else does this in the real world. In SAC evidence, the parties must demonstrate the feasibility of their evidence based upon real-world railroading.[373] The same standard should be relevant to determining the feasibility of alternative transportation.

Furthermore, DuPont's history of transloading titanium dioxide also does not indicate that traditional transloading from rail cars into trucks provides effective competition for the three lanes where NS has proposed that more realistic transload alternative (Lanes B-109, -111 & -124). To illustrate that DuPont "has the capacity and willingness to use trucking and transloading as an alternative to rail shipments,"[374] NS points to {{ }}[375] trucks that were loaded with DuPont titanium dioxide at {{ }}, and {{ }} trucks at {{ }} transloading facilities in {{ }}. NS Reply

[371] From 2008 to 2010, there were {{ }} truck shipments (Dup. Reb. WP "DuPont Titanium Dioxide Truck Shipments (corrected)-Rebuttal," worksheet "Case Lane Shipments by Year") and {{ }} railcar shipments on the case lanes (NS Reply Ex. II-B-5). To convert the railcar shipments to an equivalent number of truck shipments, DuPont uses a factor of 4.5.

[372] Dup. Op. Narr. II-B-151.

[373] Duke/NS, 7 S.T.B. 89, 101 n.19 (2003).

[374] NS Reply II-B-129.

[375] NS incorrectly claimed that {{ }} trucks were loaded at these facilities. See supra note 369. The correct figure is located in the "Transloading Totals" worksheet of DuPont Rebuttal Workpaper "DuPont Titanium Dioxide Truck Shipments (corrected)-Rebuttal."

II-B-129. But the significance of this transloading history is undermined by the fact that only {{ }} of the rail-to-truck transloads at the {{ }} facilities and {{ }} at {{ }} facilities, representing just 23% of the total, were destined for facilities that had access to direct rail service.[376] In other words, the vast majority of DuPont's transloading occurs when the destination is not rail-served, which indicates that these transloading facilities do not compete with rail transportation.

Moreover, NS's proposed transloading alternatives do not account for practical concerns. For example, NS proposes extensive use of truck-to-rail transloading for Edge Moor origin traffic. But transloading Edge Moor origin traffic from trucks into rail cars would give rise to additional car washing costs, for which NS does not account.[377] At Edge Moor, DuPont washes each railcar transporting titanium dioxide after each load.[378] DuPont recycles the wastewater from car washing back into its titanium dioxide production process, which has environmental and cost benefits Id. If washing is not performed at Edge Moor, product integrity concerns dictate that DuPont send the cars to carefully selected facilities for washing. There are only four such facilities, and none of them are the bulk terminals where NS contends that transloading can occur.[379] Also, the facility that is closest to the bulk terminals is in Altoona, PA and on the NS.[380] Accordingly, under NS's suggested transloading alternatives, railcars must be switched for a fee after each movement between the bulk terminal and Edge Moor or another washing facility, and NS is still involved in the transportation.[381] Furthermore, off-site car washing denies

[376] Dup Reb WP "DuPont Titanium Dioxide Truck Shipments (corrected)-Rebuttal," "Transloading Totals" worksheet.

[377] NS Reply Ex. II-B-3 does not account for increased car washing costs

[378] Dup Op Narr II-B-151

[379] NS Reply Ex II-B-3.

[380] Dup. Op Narr II-B-152

[381] Dup Op Narr II-B-151 to -152

DuPont the ability to recycle the wastewater back into the titanium dioxide production process NS has not accounted for any of these costs or lost efficiencies.

Transloading Edge Moor origin traffic will also result in increased maintenance costs, for which NS has not accounted.[382] DuPont inspects and maintains its Edge Moor titanium dioxide railcars at its railcar maintenance facility at Edge Moor.[383] Any railcars that are shifted to a bulk terminal to support transloading will have to be maintained and inspected by the bulk terminal for a fee, which likely will include a profit margin that DuPont currently avoids by performing such services itself. Furthermore, DuPont would not realize any savings because it still must operate its maintenance facility for its other rail shipments.

NS also conflates DuPont's capacity to load trucks at New Johnsonville and Edge Moor with the existence of effective truck competition. DuPont does not dispute that it has the ability to load trucks at these locations or that it takes {{ }} to fill[384] a truck at Edge Moor. DuPont, however, needs this truck loading capacity to serve customers without rail access and to deal with emergency situations like those that plagued both Edge Moor and New Johnsonville in 2010. DuPont does not have the truck loading capacity to implement NS's proposed alternatives as a means to exert competitive pressure on NS without displacing existing truck traffic.

In fact, contrary to NS's assertions, the circumstances surrounding past temporary shifts by DuPont of titanium dioxide volume from rail transportation to truck transportation clearly demonstrate that truck transportation does not effectively compete with NS rail transportation. As NS notes, in July 2010, DuPont increased truck shipments of titanium dioxide from Edge

[382] NS Reply Ex. II-B-3 does not account for increased railcar maintenance costs.

[383] Dup. Op. Narr. II-B-151.

[384] NS implies that total loading time is {{ }}. NS Reply II-B-129. But NS Reply Workpaper "Truck Loading-Unloading.xls," expressly states that this is the time to fill a truck, once the loading pump is turned on. The total loading time is 1.5 hours, which includes hook-ups, weighing, and sampling.

Moor because of an unexpected shutdown of DuPont's Edge Moor titanium dioxide production plant and related production difficulties.[385] A second unexpected shutdown occurred in November 2010, prolonging DuPont's increased reliance on trucks through the end of 2010. During these shutdown events and while recovering from them, DuPont could not ship railcar quantities[386] to its customers and continue to serve its entire customer base.[387] Instead, DuPont needed to transition to a just-in-time distribution system, where DuPont's customers received titanium dioxide as they consumed it and carried minimal inventory. Thus, DuPont shifted to trucks during the Edge Moor shutdowns because using rail transportation would have resulted in customer shutdowns and damage to DuPont's business. These emergency situations are like walking a tight-rope where one slip can be disastrous for the customer, which is why it is not acceptable for DuPont to operate this way in the ordinary course of business.

For similar reasons, DuPont shifted New Johnsonville rail volumes to truck transportation in May and June 2010.[388] During this period, flooding cut-off rail access at New Johnsonville.[389] Thus, DuPont had only one transportation option: trucks.

Also, as DuPont has found while dealing with such situations, utilizing a significant portion of its emergency truck loading capacity is unsustainable over the long term. For example, when dealing with the Edge Moor production difficulties in the latter half of 2010, DuPont encountered significant difficulty in finding enough stainless steel trucks without rubber

[385] NS Reply II-B-129

[386] Because railcars hold a large volume of titanium dioxide, it may take a substantial amount of time for a customer to consume the entire railcar. Accordingly, a large portion of a railcar shipment simply becomes inventory for the customer.

[387] Dup. Op. Narr. II-B-150

[388] Id.

[389] Id.

lining[390] to support the needed shift to truck shipments. Additionally, shipment processing times increase dramatically with trucks. While it may take {{[redacted]}} to fill a truck, the total time to prepare a truck shipment is approximately {{[redacted]}}, which includes positioning the truck on the loading rack, sampling after loading, unhooking the truck, and shuttling the truck off the loading rack. In contrast, the total time to prepare a railcar shipment, which is equivalent to 4.5 trucks, is {{[redacted]}}.

NS's simplistic argument concerning DuPont's ability to shift rail volumes to truck transportation ignores the commercial aspect of DuPont's business. NS suggests that DuPont's use of trucks to avoid customer shutdowns during temporary supply chain disruptions indicates that NS is subject to effective competition from truck transportation. In other words, DuPont would have chosen to shut down its customers if NS was truly market dominant. Shutting down customers, however, would cause substantial damage to DuPont's business and erode its goodwill and strong reputation as a trusted supplier. In order to avoid this situation, DuPont was willing to pay a premium for truck transportation. In the ordinary course of business, however, DuPont would never consider trucks for those movements.

NS also ignores the infrastructure investments needed at Edge Moor to switch rail volume to direct truck shipments and truck-to-rail transload shipments. As DuPont noted on page II-B-149 of its Opening Evidence, Edge Moor currently lacks the storage and loading capacity needed to load significantly more titanium dioxide into trucks. And DuPont cannot simply pull a truck up to a railcar and transload into the truck. For environmental reasons, the railcar and truck must be positioned on loading/unloading spots that are equipped with sumps that will capture any spilled titanium dioxide. The Edge Moor facility only has one of each type

[390] To avoid rust contamination and discoloration, titanium dioxide must be shipped in stainless steel tank trucks without rubber lining. Dup Op Narr. II-B-150

of spot.[391] and they are located on opposite sides of the facility Also, because DuPont uses railcars for storage, it must use the single railcar spot for loading while the plant is running. That is, DuPont can only transload while the plant is shut down, which mostly explains why DuPont was able to increase its reliance on trucks during the Edge Moor plant shutdowns in late 2010. DuPont's only options for eliminating this restriction are to build an additional rail spur and loading/unloading spot or build fixed storage and load directly into trucks. NS has not addressed the added cost of these options in its Reply.

But it is not practical for DuPont to eliminate its use of railcars for storage and store titanium dioxide in fixed storage tanks. At Edge Moor, DuPont produces multiple grades of titanium dioxide, one at a time Thus, for any particular grade, it must keep enough inventory of the grade in stock to satisfy all potential orders that could be made before the next production run of the grade. Because mixing the grades together in large fixed-storage tanks would destroy their individual properties, DuPont stores titanium dioxide in railcars, by grade, until shipped to a customer Also, if DuPont used fixed storage tanks, each tank would need to have enough capacity to store an entire campaign for its assigned grade. Railcar storage is more efficient, because when a railcar is emptied, DuPont can use it to store other grades. This "rolling" storage capability essentially allows DuPont to use fewer resources to store the same amount of volume.

Even if it were practical to use fixed-storage and increase reliance on trucks for Edge Moor-origin shipments, as NS suggests, DuPont would strand its railcar fleet. Contrary to NS's assertions, DuPont cannot avoid this by simply releasing or repurposing some of the railcars. Releasing cars is not a practical solution because DuPont owns, rather than leases, all but one of its titanium dioxide railcars.[392] As far as repurposing, NS assumes that DuPont's needs for

[391] NS Reply WP "Barge and Truck Spots xls" in the "Other Documents Produced by DuPont" folder

[392] DuPont has already released nearly all of its leased titanium dioxide cars, releasing 21 in 2012 alone.

general purpose railcars are not satisfied, but has not provided any evidence to support that assumption.

Even if DuPont has a need for repurposed cars, NS ignores the costs and feasibility of repurposing a portion of DuPont's titanium dioxide railcars. First, these cars are too small to be effectively or efficiently repurposed DuPont's other businesses use railcars that are twice the size of these railcars.[393] This creates multiple problems. These cars do not match up to the loading and unloading racks of DuPont's other business units, which are custom-built for the larger railcars used by these business units This will cause longer loading and unloading times for the same volume of material, if the racks can even unload these cars Also, using titanium dioxide cars to move the same volume of material as a conventional car requires DuPont to pay twice the maintenance costs and twice the freight[394] than it would if it used a conventional car.

Second, these cars cannot be freely repurposed because they do not meet the regulatory standards for transporting hazardous materials. Specifically, DuPont has installed a sparger system[395] and modified the valves and fittings on each car, making these cars non-compliant with specifications for handling hazardous materials. Also, some cars do not meet the Department of Transportation's testing and inspection schedule required for hazardous materials tank cars. This is a substantial limitation because the vast majority of other commodities for which DuPont uses tank cars are hazardous materials.

Third, repurposing the cars to carry hazardous materials is expensive. DuPont estimates that removing the sparger system and installing valves and fittings that meet DOT tank car

[393] DuPont's titanium dioxide railcars are only 11,500-gallon and 14,000-gallon cars whereas the cars that DuPont uses for other commodities usually are about twice the size, between 18,000 and 23,000 gallons

[394] DuPont is subject to per car freight charges, which are based on a conventional-sized tank car

[395] A sparger system uses compressed air to agitate the titanium dioxide slurry to prevent settlement within the slurry solution and reduce heels

requirements for hazardous materials transportation will cost approximately $15,000 per car. On top of this, DuPont will have to spend another $20,000[396] to qualify the cars to carry hazardous materials. In total, DuPont conservatively estimates that repurposing one titanium dioxide railcar will cost $35,000. And, due to the smaller capacity of these cars, DuPont will need to spend twice this amount just to repurpose the same capacity as it could gain by acquiring a conventional tank car.

Even if no railcars are stranded by increased reliance on trucks, other infrastructure would be, and NS fails to recognize these costs. Specifically, NS fails to account for DuPont's storage track and other rail infrastructure that would be stranded by NS's origin transloading and direct truck suggestions.[397] For example, at Edge Moor, DuPont owns storage track to hold up to 53 cars of titanium dioxide.[398] Utilization of this storage track would plummet from NS's direct truck and origin transloading proposals, undermining DuPont's ability to recover its recent investment in this infrastructure.

In the discussion of the individual titanium dioxide issue movements below, DuPont points to dramatic NS rate increases of up to 133% over a brief 2-year period, from 2009-11, as evidence of the exercise of NS market power. Although NS claims that such dramatic rate increases were "{[redacted]}," that cannot explain the full magnitude of these rate increases.[399] NS alleges that DuPont's legacy contract that expired in 2009 {[redacted]}

[396] This figure includes exterior painting, installation of an interior lining, and inspections. Without exterior painting and installation of an interior lining, qualification will cost $15,000.

[397] See NS Reply II-B-130.

[398] See Dup. Op. Narr. II-B-149.

[399] NS Reply II-B-92.

[redacted][400] This translates to a 46.8% increase in the contract rates over that time.[401] But during that same time NS's variable costs for transporting titanium dioxide increased by 54%, which would explain only a 4.9% post-contract rate increase.[402] This is far smaller than the rate increases that NS has imposed on the issue movements.

Individual Lane Analysis. In addition to the foregoing evidence, DuPont addresses why NS's claims of effective competition are misguided for each contested case lane. Before addressing each lane, however, NS has committed several fundamental errors that permeate its rate comparison analysis for nearly every single contested movement of titanium dioxide. NS Witness Gordon Heisler purports to have determined all truck costs "based on actual rates available to DuPont today ."[403] Although NS does not define what it means by "today," NS appears to mean the same July 11, 2011 date that DuPont used in its opening evidence.[404] The truck rates that NS calculated for both its direct truck and transload alternatives are universally rates from expired contracts that pre-date the July 11, 2011 date used by DuPont. For that reason alone, the Board should use DuPont's rate analysis because it is more current, and thus better reflects the truck rates that are available to DuPont in the real world.

For 8 lanes (A-13, B-55, B-56, B-58, B-59, B-60, B-62, and B-97), NS uses a contract with Suttles Truck Leasing, which expired by its terms on July 31, 2009, which is more than 3

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[400] Id. at II-B-92 to -93.

[401] Dup Reb Ex II-B-1, at 1

[402] Dup Reb Ex II-B-1 Attachment 1, columns (8), (9)

[403] NS Reply II-B-106 (underline added)

[404] In footnote 107 on page II-B-106 of NS's Reply Narrative, NS purports to have calculated fuel surcharges as of the same date used by DuPont in its Opening Evidence, which means that NS also should have calculated truck rates as of that same date in order to provide an apples-to-apples comparison. But NS represents that date to be May 11, 2012, although DuPont actually used July 11, 2011 for all of its truck rates. Dup Op. WP "Direct Truck Costs." "Sources" worksheet. Indeed, DuPont could not have used May 11, 2012, since DuPont's Opening Evidence was filed on April 30, 2012

years before NS submitted its evidence.[405] Furthermore, Dana Transport acquired Suttles Trucking, effective September 1, 2008.[406] At that time, DuPont and Dana agreed to merge the two carriers' rate schedules, and that the Dana mileage scale rates would replace those in the Suttles contract.[407] Because Mr. Heisler used the Suttles mileage scale to determine his alternative truck rates, he in fact was using rates that expired on September 1, 2008, which is more than 4 years before NS submitted its reply evidence. Consequently, the NS alternative rates based upon this contract are not valid current rates.

Furthermore, Mr Heisler failed to consider whether Suttles even could transport titanium dioxide. In 5 years of truck shipment data that DuPont produced in discovery, which is the basis for NS Reply WP "DuPont Titanium Dioxide Truck Shipments xls," there is not a single instance of Suttles transporting titanium dioxide. Because Suttles was based in Alabama, it did not have equipment or drivers near DuPont's titanium dioxide production facilities in Delaware and Tennessee.

For 3 lanes (B-109, B-111, and B-124), NS uses Factory & Steel Transportation, which was dropped by DuPont as an approved carrier and is no longer in business Before July 2011, DuPont dropped Factory & Steel as an approved carrier because its equipment was aged and not well maintained and it frequently did not have equipment and drivers available to transport shipments within the short lead time given by DuPont's customers. In August 2011, shortly after Factory & Steel lost its approved status, Covenant Transport acquired it [408] But DuPont did not

[405] Dup. Reb WP "Suttles Contract," at 0059267, in the "Suttles" folder

[406] Dup. Reb WP "Suttles Merger Email" in the "Suttles" folder; Dup. Reb. WP "Dana Transport Merger Notice pdf" in the "Suttles" folder

[407] Dup Reb. WP"Dana Transport Merger Notice pdf" in the "Suttles" folder.

[408] See Covenant Transport Trucking for 25 Years, 14 Industry Today, http://industrytoday.com/article_view.asp?ArticleID=2800 (last visited Mar 7, 2013)

approve the assignment of the Factory & Steel contract to Covenant and terminated the contract as of January 1, 2012.[409]

For the truck rates in the remaining contested titanium dioxide lanes, Mr. Heisler failed to use information provided in discovery regarding the results of DuPont's most recent contract bidding for titanium dioxide truck traffic (the "2011 Bid").[410] Those rates became effective in July 2011, which is the time frame that Mr Heisler purports to use Instead, he has used rates from the expired contracts, which increased as a result of the 2011 bidding process. Because DuPont used those more current rates and carriers in its Opening Exhibits II-B-1 and -2, DuPont has presented the best evidence of record as to actual truck rates.

The individual errors that Mr. Heisler made in each contested case lane are detailed below

Lane A-11 (Edgemoor to Chicago, IL). The challenged rate on Lane A-11 is for single-line transportation from DuPont's Edge Moor production facility to a bulk storage terminal in Chicago, IL. It is the same rate that DuPont is challenging on lanes B-51, B-58, and B-68, except that this lane is a single-line movement from origin to destination. DuPont ultimately sells titanium dioxide from the storage terminal, which DuPont delivers to customers by truck NS has not asserted that there is a competitive transportation alternative for the issue movement, which is from Edge Moor to Chicago Rather, NS claims that shipping by truck directly to customer locations served by the storage terminal constitutes effective competition.[411] But, direct trucking to a multitude of locations other than the storage terminal in Chicago does not

[409] Dup Reb. WP "Factory Steel Termination Letter"

[410] DuPont conducts an annual bid for its titanium dioxide truck shipment lanes. In discovery, DuPont produced the bid results and analyses for 2009, 2010, and 2011 The bid results and analyses for 2011 are located in the "2011 Bid" subfolder of DuPont Rebuttal Workpaper Folder "Titanium Dioxide"

[411] NS Reply II-B-130.

constitute effective competition "for the transportation to which [the challenged] rate applies." 49 U S C. § 10707(a).

NS ignores the basic fact that the issue movement is to Chicago, not destinations beyond Chicago. The bulk terminal, which Superior Carriers operates, stores the titanium dioxide in railcars and fulfills the orders of DuPont's customers out of this storage via truck shipments. When a titanium dioxide railcar leaves Edge Moor, the titanium dioxide within the car is not identified for transportation to any destination other than Chicago. In fact, NS has only been able to identify customers that received titanium dioxide from the Chicago bulk terminal from DuPont's historical truck shipment data.[412] NS has never known who those customers were and even DuPont does not know who the customer will be at the time of the rail shipment.[413] Thus, the rail shipment of titanium dioxide to the bulk terminal is wholly independent from the shipment of titanium dioxide to destinations beyond the bulk terminal. Because the inbound and outbound transportation are not part of a through movement, the NS alternatives are improper.

Accordingly, the locations of the ultimate consumers of the titanium dioxide shipped on this lane and the direct truck options proposed by NS are irrelevant NS has failed to present any alternative to NS rail service for the issue movement to Chicago, much less an effective competitive alternative

Lane A-12 (Edge Moor to Chillicothe, OH). The challenged rate on Lane A-12 is NS's rate from Edge Moor to Chillicothe, OH. NS claims that {{ }} direct truck transportation over 488 miles is effective competition for the single-line rail transportation of

[412] The fact that certain customers received titanium dioxide from the bulk terminal in the past does not mean that other customers will not do so in the future

[413] Where DuPont fulfills a customer order with shipments from the bulk terminal, DuPont only allocates to the order titanium dioxide that is already in the terminal's inventory It does not identify titanium dioxide at Edge Moor and ship it through the bulk terminal.

titanium dioxide from Edge Moor to DuPont's customer, P H Glatfelder, in Chillicothe, OH.[414] NS's contention is based on flawed logic and incorrect facts.

First, it is notable that this NS-calculated rate {{ }}. Thus, under DuPont's argument, this truck rate could not provide effective competition.

Second, NS has not calculated the truck rate correctly. DuPont calculated the direct truck rate for this lane in its Opening Evidence using the same motor carrier as NS, but NS uses a lower truck rate.[415] DuPont's direct truck rate is {{ }} higher than the NS rail rate, {{ }} The difference between the DuPont and NS direct truck rates appears to be attributable to NS's use of an old rate instead of the more recent, higher rate that the carrier offered in the 2011 Bid, as discussed above.[416] Accordingly, market dominance should be determined with reference to the {{ }} direct truck rate[417] that DuPont calculated as the lowest cost alternative in its Opening Evidence.

Third, even if the NS truck rate were correct, NS completely ignores that the rate differential is only as close as {{ }} after NS imposed significant rate increases over a brief two-year period from 2009-2011. NS increased its rate by {{ }} in 2010, and by {{ }} in 2011, which amounts to a cumulative rate increase of {{ }} from 2009 to 2011.[418] After NS has increased its rate over such a short period and by such substantial amounts to {{ }} the

[414] NS Reply II-B-131 to -132

[415] Dup Op. Ex. II-B-1

[416] Dup. Reb. Wp. "BID RESULTS MAY 2011," "B-1 – Individual Lanes" worksheet, cell W6, in the "2011 Bid" folder.

[417] Dup. Op. Ex. II-B-1

[418] Dup. Reb. Ex. II-B-2. In preparing its Rebuttal Evidence, DuPont discovered an error in the Excel formula it used to calculate the change in the NS rate for the Exhibit A case lanes in Dup. Op. Ex. II-B-3. Instead of calculating the cumulative rate change from 2009-2011, the formula calculated the cumulative change from 2007-2011. Although NS did not note this error in its Reply Evidence, DuPont has corrected that error in Rebuttal Exhibit II-B-2.

rate of an alternative mode, it is not surprising that NS's ability to raise its rate any further might appear to be constrained The reality, however, is that NS has increased its rate to match that of a much higher cost alternative

Fourth, NS's contention that trucking continues to constitute a {{ }} portion of the volume on this lane[419] is disingenuous Just looking at the traffic numbers that NS provided, trucking constituted {{ }} of the total volume shipped between Edge Moor and Chillicothe from 2008 through 2010—which is consistent with DuPont's evidence that trucks are used primarily for expedited shipments In the last 2 years of that period, from 2009 to 2010, where truck shipments constituted merely {{ }} of the total volume of shipments between Edge Moor and Chillicothe, despite a significant rail rate increase.

Finally, NS has not factored in the additional infrastructure that DuPont must build at Edge Moor to increase its truck loading capacity, and the lack of available stainless steel tank trucks, which are necessary to support a truck-rail transload operation [420]

Lane A-13 (Edge Moor to Mahrt, AL). The challenged rate on Lane A-13 is NS's rate from Edge Moor to Mahrt, AL. NS claims that {{ }} direct truck transportation for a 906 mile road movement is effective competition for the single-line rail transportation on this lane [421] NS's evidence is unsupported and ignores critical facts that demonstrate NS's market dominance

First, NS's claim is based on the non-existent Suttles truck rate discussed above and, therefore, is unsupported.[422] Accordingly, market dominance should be determined with

[419] NS Reply II-B-131

[420] Dup Op Narr II-B-150 to -151

[421] NS Reply II-B-132

[422] In NS Reply Workpaper "Direct Truck Analysis," NS proposes Superior Carriers as an alternative to Suttles, at a cost that is {{ }} than rail transportation But NS ignores that from 2006 through 2010, Superior Carriers only handled {{ }} truck

reference to the {{ }} direct truck rate[423] that DuPont calculated as the lowest cost alternative in its Opening Evidence. That rate exceeds even the very high 20% threshold above which NS recognizes its market dominance.

Second, even if the NS truck rate were correct, NS completely ignores that the rate differential is {{ }} only after NS imposed significant rate increases over a brief two-year period from 2009-2011. NS increased its rate by { } in 2010, and by { } in 2011, which amounts to a cumulative rate increase of { } from 2009 to 2011.[424] After NS has increased its rate over such a short period and by such substantial amounts to {{ }} the rate of an alternative mode, it is not surprising that NS's ability to raise its rate any further might appear to be constrained. The reality, however, is that NS has increased its rate to match that of a much higher cost alternative.

Third, NS's market dominant position is not surprising given that this lane covers a highway distance of 906 miles.[425] Truck transportation clearly is a higher cost service at such long distances, because it requires more equipment, personnel, and fuel to transport the same volume as rail transportation. This distance also is well beyond any range that trucks have been considered to be competitive with rail.[426]

Fourth, NS uses incorrect facts and ignores the 2010 Edge Moor production issues when it contends that trucking is effective competition. NS incorrectly claims that DuPont shipped

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shipments to Mahrt, none of which were from Edge Moor. Dup. Reb. WP "DuPont Titanium Dioxide Truck Shipments (corrected)-Rebuttal." "Lane A13" worksheet.

[423] Dup. Op. Ex. II-B-1.

[424] Dup. Reb. Ex. II-B-2. In preparing its Rebuttal Evidence, DuPont discovered an error in the Excel formula it used to calculate the change in the NS rate for the Exhibit A case lanes in Dup. Op. Ex. II-B-3. Instead of calculating the cumulative rate change from 2009-2011, the formula calculated the cumulative change from 2007-2011. Although NS did not note this error in its Reply Evidence, DuPont has corrected that error in Rebuttal Exhibit II-B-2.

[425] NS Reply II-B-132.

[426] See Dup. Op. Narr. I-28 n.28.

{{[redacted]}} trucks to its customer in Mahrt in 2010.[427] DuPont actually shipped only {{[redacted]}} trucks to its customer, {{[redacted]}} of which were from Edge Moor.[428] All of these shipments occurred in August and September 2010, and were a direct result of the Edge Moor production issues in 2010.[429] The anomalous and emergency nature of these shipments is clearly illustrated by the complete lack of any truck shipments from DuPont to its customer from 2006 until August 2010.[430]

Finally, NS has not factored in the additional infrastructure that DuPont must build at Edge Moor to increase its truck loading capacity, and the lack of available stainless steel tank trucks, which are necessary to support a truck-rail transload operation.[431]

Lane B-50 (Edge Moor to Garland, TX). The challenged rate on Lane B-50 is NS's rate from Edge Moor to Meridian, MS. This rate also applies to Lane B-67. NS claims that a {{[redacted]}}[432] direct truck rate for this 1407 mile road movement constitutes effective competition.[433] NS's contention is based on flawed logic and incorrect facts.

First, NS has not calculated the truck rate correctly. DuPont calculated the direct truck rate for this lane in its Opening Evidence using the same motor carrier as NS, but NS uses a lower truck rate.[434] DuPont's direct truck rate is {{[redacted]}} higher than the total rail transportation cost, {{[redacted]}}

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[427] NS Reply II-B-132.

[428] Dup. Reb. WP "DuPont Titanium Dioxide Truck Shipments (corrected)-Rebuttal," "Lane A13" worksheet.

[429] Id.

[430] Id.

[431] Dup. Op. Narr. II-B-150 to -151.

[432] The NS Reply Evidence states that the direct truck rate is {{[redacted]}}, but both NS Reply Exhibit II-B-2 and NS Reply Workpaper "Direct Truck analysis" show a {{[redacted]}} rate. NS has informed DuPont that Reply Exhibit II-B-2 is accurate. See DuPont Rebuttal Workpaper "Letter from Matthew J. Warren (Jan. 11, 2013)."

[433] NS Reply II-B-132.

[434] Dup. Op. Ex. II-B-1.

[redacted]}}. The difference between the DuPont and NS direct truck rates appears to be attributable to NS's use of an old rate instead of the more recent, higher rate that the carrier offered in the 2011 Bid, as discussed above.[435] Accordingly, market dominance should be determined with reference to the {{[redacted]}} direct truck rate[436] that DuPont calculated as the lowest cost alternative in its Opening Evidence

Second, NS misrepresents the truck shipment history to the customer on this lane when claiming that the customer can receive enough trucks to constrain NS's rates From 2009 through 2010, DuPont shipped only {{[redacted]}} trucks to this customer from Edge Moor,[137] but shipped {[redacted]} railcars.[438] Accordingly, trucks constituted only {{[redacted]}} of the total shipments on this lane, which is consistent with DuPont's evidence that trucks are used primarily for expedited shipments. It is simply not credible that such a trivial proportion of truck shipments could cause NS to constrain its rates out of fear of a potential large shift to truck.

Third, NS ignores the absurdity of a truck rate that would be only {{[redacted]}} on a 1407 mile movement Truck transportation clearly is a higher cost service at such long distances, because it requires more equipment, personnel and fuel to transport the same volume as rail transportation. This distance also is well beyond any range that trucks have been considered to be competitive with rail.[439]

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[435] Dup Reb Wp, "BID RESULTS MAY 2011," "B-1 – Individual Lanes" worksheet, cell V13, in the "2011 Bid" folder.

[436] Dup. Op Ex. II-B-1

[437] Dup Reb WP "DuPont Titanium Dioxide Truck Shipments (corrected)-Rebuttal," "Case Lane Shipments By Year" worksheet.

[438] NS Reply Ex II-B-5

[439] See Dup. Op. Narr. I-28 n 28

Finally, NS has not factored in the additional infrastructure that DuPont must build at Edge Moor to increase its truck loading capacity, and the lack of available stainless steel tank trucks, which are necessary to support a truck-rail transload operation.[440]

Lane B-51 (Edge Moor to Groos, MI). The challenged rate on Lane B-51 is NS's rate from Edge Moor to Chicago. This rate also applies to Lanes A-11, B-58, and B-68. NS claims that a {{ }} direct truck rate for this 977 mile road movement constitutes effective competition.[441] NS's contention is based on flawed logic and incorrect facts. It also is notable that the NS-calculated rate {{ }}.

First, NS has not calculated the truck rate correctly. DuPont calculated the direct truck rate for this lane in its Opening Evidence using the same motor carrier as NS, but NS uses a lower truck rate.[442] The direct truck rate is {{ }} higher than the total rail transportation cost, {{ }}. The difference between the DuPont and NS direct truck rates appears to be attributable to NS's use of an old rate instead of the more recent, higher rate that the carrier offered in the 2011 Bid, as discussed above.[443] Accordingly, market dominance should be determined with reference to the {{ }} direct truck rate that DuPont calculated as the lowest cost alternative in its Opening Evidence.

Second, even if the NS truck rate were correct, the difference between the direct truck rate and rail rate for this lane masks that NS has already exercised substantial market power by imposing significant and non-transient rate increases on this lane. NS increased its rate by {

[440] Dup. Op. Narr. II-B-150 to -151

[441] NS Reply II-B-133

[442] Dup. Op. Ex. II-B-1

[443] Dup. Reb. Wp. "BID RESULTS MAY 2011," "B-1 – Individual Lanes" worksheet, cell V12, in the "2011 Bid" folder

in 2010 and {[redacted]} in 2011, for a cumulative increase of {[redacted]} from 2009 to 2011.[444] Accordingly, NS's rates are already at supracompetitive levels after pricing up to a higher cost alternative.

Third, the extent of NS's market power is evident in the disproportionate share of volume transported by rail on this lane. From 2008 to 2010, DuPont shipped {{[redacted]}} trucks of titanium dioxide from Edge Moor to NewPage's facility in Groos.[445] Over the same period, DuPont shipped {[redacted]} railcars of titanium dioxide over this lane.[446] Thus, NS transported {{[redacted]}} of the titanium dioxide travelling between Edge Moor and Groos from 2008 to 2010. The history of truck shipments to the customer clearly does not support NS's claim that the customer is able or willing to receive titanium dioxide in trucks as the primary mode of transport.[447]

Fourth, NS ignores the absurdity of a truck rate that would be only {{[redacted]}} on a 977-mile movement. Truck transportation clearly is a higher cost service at such long distances, because it requires more equipment, personnel and fuel to transport the same volume as rail transportation. This distance also is well beyond any range that trucks have been considered to be competitive with rail.[118]

Finally, NS has not factored in the additional infrastructure that DuPont must build at Edge Moor to increase its truck loading capacity, and the lack of available stainless steel tank trucks, which are necessary to support a truck-rail transload operation.[449]

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[444] Dup. Op. Ex. II-B-3.

[445] Dup. Reb. WP "DuPont Titanium Dioxide Truck Shipments (corrected)-Rebuttal," "Case Lane Shipments By Year" worksheet.

[446] NS Reply Ex. II-B-5.

[447] Contrary to NS's claim, at page II-B-133 n.143, the very small proportion of truck shipments on this lane also comports with DuPont's Opening Evidence that {{[redacted]}}. Dup. Op. Narr. II-B-159.

[118] See Dup. Op. Narr. I-28 n.28.

[449] Dup. Op. Narr. II-B-150 to -151.

Lane B-52 (Edge Moor to Laredo, TX). The challenged rate on Lane B-52 is NS's rate from Edge Moor to East St. Louis. NS claims that an {{ }} truck-rail transloading rate for this movement constitutes effective competition.[450] NS's contention is based on flawed logic and a myopic view of the material facts.[451]

First, NS has calculated the truck-transload rate incorrectly. Although NS uses the same transload facilities that DuPont used in its Opening Evidence, NS uses a Schneider National truck rate instead of the Superior Bulk Logistics truck rate that DuPont uses. Using the Superior rate, DuPont calculated a truck-transload cost that was {{ }}.[452] NS's use of the Schneider rate is improper because the rate is backhaul rate that applies to reloadable trailers,[453] and these are not backhaul shipments. Also, the rate is from an old rate sheet and does not reflect the rates from the 2011 bid, as discussed above. Accordingly, market dominance should be determined with reference to the {{ }} transload rate that DuPont calculated as the lowest cost alternative in its Opening Evidence. .

Second, NS ignores its recent, substantial rate increases, which have caused the total rail rate for this lane to encroach upon the truck-rail transloading rate. A current rate differential is not a true indicator of market power where NS has already exercised its market power by extracting large rate increases. NS increased its rate on this lane by { } in 2010 and by

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[450] NS Reply II-B-131

[451] Despite citing to DuPont's history of direct truck shipments over this lane, NS concedes that direct trucking does not provide effective competition for this movement. (NS Reply II-B-133.) Because NS claims that "direct-trucking is not a cost-competitive alternative," NS's reference to the history of direct trucking on this lane is irrelevant except to demonstrate that trucking is a feasible means of transporting titanium dioxide, which DuPont never contested. This evidence proves, however, DuPont's claim that the mere use of trucks does not demonstrate effective competition, but is merely evidence of exceptions for expedited and small volume shipments.

[452] Dup. Op. Ex. II-B-2.

[453] NS Reply WP "0059955.xls," "4th Revised Page 3" worksheet, Line 5, in the "DuPont Trucking Contracts" folder, "Schneider" subfolder. "Backhaul" refers to the transportation of cargo on the return leg of a trip. Backhaul rates are usually lower than fronthaul rates because they do not have to offset the cost of a return trip.

{[redacted]} in 2011, for a cumulative increase of {[redacted]}.[454] After NS has increased its rate over such a short period and by such substantial amounts to {{[redacted]}} the rate of an alternative mode, it is not surprising that NS's ability to raise its rate any further might appear to be constrained. The reality, however, is that NS has increased its rate to match that of a much higher cost alternative.

Third, the transload alternative posited by NS is a truck-to-rail transload that, although theoretically possible, is not done by DuPont or any other titanium dioxide producer in the real-world to the best of DuPont's knowledge

Finally, NS has not factored in the additional infrastructure that DuPont must build at Edge Moor to increase its truck loading capacity, and the lack of available stainless steel tank trucks, which are necessary to support a truck-rail transload operation.[455] Furthermore, NS has not considered the additional costs associated with railcar cleaning, maintenance, and inspection, which DuPont currently provides at Edge Moor.[456] Nor has NS considered the efficiencies that DuPont realizes by recycling the waste water from tank car cleaning back into its production process at Edge Moor All of that investment by DuPont at Edge Moor would be stranded.

Lane B-55 (Edgemoor to Port Huron, MI). The challenged rate on Lane B-55 is NS's rate from Edge Moor to Buffalo NS claims that a {{[redacted]}} direct truck rate for this 617 mile road movement constitutes effective competition.[457] NS's contention is based on flawed logic and incorrect facts

[454] Dup. Op. Ex. II-B-3, at 3.

[455] Dup Op Narr. II-B-150 to -151

[456] Id. at II-B-151

[457] NS Reply II-B-134

First, the direct truck rate is based on the long-expired contract with Suttles Truck Leasing discussed above and, therefore, is unsupported.[458] Accordingly, market dominance should be determined with reference to the {{ }} direct truck rate[459] that DuPont calculated as the lowest cost alternative in its Opening Evidence That rate exceeds even the very high 20% threshold above which NS recognizes its market dominance

Second, even if the direct truck rate were accurate, the {{ }} difference between it and the challenged rail rate for this lane masks that NS has already exercised substantial market power by imposing significant and non-transient rate increases on this lane NS increased the challenged rate by { } between 2009 and 2011.[460] After NS has increased its rate over such a short period and by such substantial amounts to {{ }} the rate of an alternative mode, it is not surprising that NS's ability to raise its rate any further might appear to be constrained The reality, however, is that NS has increased its rate to match that of a much higher cost alternative

Third, NS ignores the absurdity of a truck rate that would be only {{ }} on a 617-mile movement. Truck transportation clearly is a higher cost service at such long distances, because it requires more equipment, personnel and fuel to transport the same volume as rail transportation. This distance also is beyond the range that trucks typically have been considered to be competitive with rail [461]

[458] In NS Reply Workpaper "Direct Truck Analysis," NS proposes Quality Carriers as an alternative to Suttles, but uses an old Quality Carriers rate that applied to a contract expiring on June 30, 2010. NS Reply WP "Quality Carriers pdf," at 1, in the "Quality Carriers" subfolder of the "DuPont Trucking Contracts" folder The more recent Quality Carriers rate from the 2011 Bid is higher than the truck rate that DuPont used in its Opening Evidence

[459] Dup Op Ex II-B-1.

[460] Dup Op. Ex. II-B-3, at 3.

[461] See Dup Op Narr 1-28 n.28

Finally, NS has not factored in the additional infrastructure that DuPont must build at Edge Moor to increase its truck loading capacity, and the lack of available stainless steel tank trucks, which are necessary to support a truck-rail transload operation.[462]

Lane B-56 (Edge Moor to Portland, ME). The challenged rate on Lane B-56 is NS's rate from Edge Moor to Mechanicville, NY. It is the same rate that has been challenged on Lanes B-59, B-60, and B-62. NS claims that a {{ }} direct truck rate for this 434 mile road movement constitutes effective competition.[463] The NS evidence is both factually and logically flawed.

First, the direct truck rate is based on the same long-expired contract with Suttles Truck Leasing as in Lane A-13 and, therefore, is unsupported. Accordingly, market dominance should be determined with reference to the {{ }} direct truck rate[464] that DuPont calculated as the lowest cost alternative in its Opening Evidence. That rate exceeds even the very high 20% threshold above which NS recognizes its market dominance.

Second, the Board should not overlook NS's recent exercise of market power on this lane. From 2009 to 2011, NS raised the challenged rate by { }.[465] In contrast, over the same period, the connecting carrier on this lane {{ }}.[466]

Finally, NS has not factored in the additional infrastructure that DuPont must build at Edge Moor to increase its truck loading capacity, and the lack of available stainless steel tank trucks, which are necessary to support a truck-rail transload operation.[467]

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[462] Dup. Op. Narr. II-B-150 to -151

[463] NS Reply II-B-135

[464] Dup. Op. Ex. II-B-1

[465] Dup. Op. Ex. II-B-3.

[466] Id.

[467] Dup. Op. Narr. II-B-150 to -151

Lane B-58 (Edge Moor to Quinnesec, MI). The challenged rate on Lane B-58 is NS's rate from Edge Moor to Chicago, IL. It is the same rate that has been challenged on Lanes A-11, B-51, and B-68. NS has proposed both a direct truck and truck-to-rail transload alternative for this lane. NS claims that a {{ }} direct truck alternative over 1055 road miles and a {{ }} truck-rail transload alternative constitute effective competition.[468] In support of this contention, NS asserts that DuPont's customer on this lane, {{ }}.[469] The NS evidence is factually and logically flawed.

First, both the direct truck rate and the truck portion of the transload rate are based on a long-expired contract with Suttles Truck Leasing discussed above and, therefore, are unsupported. Accordingly, market dominance should be determined with reference to the {{ }} direct truck rate[470] and the {{ }} truck-rail transload rate[471] that DuPont calculated as the lowest cost alternatives in its Opening Evidence.

Second, NS has not used a proper transload terminal to calculate the transload costs. DuPont calculated the transload costs for this lane in its Opening Evidence using a CSXT transload at Wilmington, DE, whereas NS used a CN transload in Detroit, MI.[472] NS's use of a CN transload is improper because the CN transload facility is not qualified to transload titanium dioxide.

Third, even if the NS-calculated alternative rates were accurate, any similarity with the challenged rail rate is the result of very recent and sizeable NS rate increases. NS increased its

[468] NS Reply II-B-135.

[469] Id.

[470] Dup. Op. Ex. II-B-1.

[471] Dup. Op. Ex. II-B-2.

[472] Dup. Op. Ex. II-B-2; NS Reply Ex. II-B-3.

rate by {[redacted]} in 2010 and {[redacted]} in 2011, for a total increase of {[redacted]} from 2009 to 2011.[473] In contrast, the connecting carrier on this lane {{[redacted]}} from 2009 to 2011,[174] which illustrates the magnitude of market power that NS has already exerted After NS has increased its rate over such a short period and by such substantial amounts, it is not surprising that NS's ability to raise its rate any further might appear to be constrained.

Fourth, NS ignores the absurdity of a direct truck rate that would be only {{[redacted]}} on a 1055 mile movement and a transload rate that would be only {{[redacted]}} when the truck portion of the transload is 578 miles, or 55% of the direct truck distance. Indeed, the fact that NS could not find a lower priced transload alternative through a bulk terminal much closer to the origin reveals the extent to which NS truly has set rates based upon a much higher cost alternative. Truck and transloading clearly are higher cost alternatives at such long truck distances, because they require more equipment, personnel and fuel to transport the same volume as direct rail transportation. These truck distances are beyond the range that trucks historically have been considered to be competitive with rail.[475]

Fifth, NS overstates the significance of the few trucks that Verso has received in the past. Verso received {{[redacted]}} trucks in 2010.[476] All of those trucks were shipped in August and September as a result of the production problems at Edge Moor and product rationing that took place.[477] {{[redacted]}}

[473] Dup Op Ex II-B-3.

[474] Id

[475] See Dup Op. Narr. I-28 n 28.

[476] NS Reply II-B-135

[477] Dup Reb. WP - DuPont Titanium Dioxide Truck Shipments (corrected)-Rebuttal," "Lane 1858" worksheet

[redacted]}}.[478] This extraordinarily small number of trucks is consistent with DuPont's argument that trucks are used primarily just for low volume and expedited shipments.

Sixth, the transload alternative posited by NS is a truck-to-rail transload that, although theoretically possible, is not done by DuPont or any other titanium dioxide producer to the best of DuPont's knowledge. Also NS's suggested truck-rail transload alternative violates DMIR by avoiding the interchange in Chicago, and instead delivering the titanium dioxide to the CN by trucks at Detroit.[479]

Finally, NS has not factored in the additional infrastructure that DuPont must build at Edge Moor to increase its truck loading capacity, and the lack of available stainless steel tank trucks, which are necessary to support a truck-rail transload operation.[480] Furthermore, NS has not considered the additional costs associated with railcar cleaning, maintenance, and inspection, which DuPont currently provides at Edge Moor.[481] Nor has NS considered the efficiencies that DuPont realizes by recycling the waste water from tank car cleaning back into its production process at Edge Moor. All of that investment by DuPont at Edge Moor would be stranded.

Lane B-59 (Edge Moor to Rileys, ME). The challenged rate on Lane B-59 is NS's rate from Edge Moor to Mechanicville, NY. It is the same rate that has been challenged on Lanes B-56, B-60, and B-62. NS claims that a {{[redacted]}} direct truck alternative for a 492 mile movement constitutes effective competition.[482] In support of this contention, NS asserts that

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[478] Id.

[479] See supra Part I.A.2.g.

[480] Dup. Op. Narr. II-B-150 to -151.

[481] Id. at II-B-151.

[482] NS Reply II-B-136.

DuPont's customer on this lane, {{[redacted]}}.[483] The NS evidence is both factually and logically flawed.

First, the direct truck rate is based on the long-expired contract with Suttles Truck Leasing discussed above and, therefore, is unsupported.[484] Accordingly, market dominance should be determined with reference to the {{[redacted]}} direct truck rate[485] that DuPont calculated as the lowest cost alternative in its Opening Evidence. That rate exceeds even the very high 20% threshold above which NS recognizes its market dominance. It also is worth noting that even the incorrect NS-calculated rate is {{[redacted]}}.

Second, the NS price advantage remains {{[redacted]}} even after imposing large rate increases. From 2009 to 2011, NS imposed a cumulative {[redacted]} rate increase.[486] To put this in perspective, the connecting carrier {{[redacted]}} over the same period.[487] Accordingly, NS has already exercised a substantial amount of market power without constraint.

Third, NS's claim that effective competition is illustrated by the volume of truck shipments to DuPont's customer completely ignores two very critical facts. First, nearly all of those truck shipments originated at a bulk terminal near to the destination, not at Edge Moor.[488]

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[483] Id.

[484] In NS Reply Workpaper "Direct Truck Analysis," NS proposes Superior Bulk Logistics as an alternative to Suttles, but uses an old Superior rate instead of the more recent, higher rate from the 2011 Bid, described above. Even if the old rate was valid, it exceeds the cost of rail transportation by more than 20%, which is the threshold above which NS recognizes its market dominance.

[485] Dup. Op. Ex. II-B-1.

[486] Dup. Op. Ex. II-B-3.

[487] Id.

[488] Dup. Reb. WP "DuPont Titanium Dioxide Truck Shipments (corrected)-Rebuttal," "Lane B59" worksheet.

DuPont still would have to use NS to deliver titanium dioxide to the bulk terminal from Edge Moor. Second, as DuPont described in its Opening Evidence at page II-B-159, the customer's facility contains two parts, one that cannot receive rail shipments at all and one that can receive both rail and truck shipments. Titanium dioxide cannot be transferred between the two parts of the facility. Accordingly, rail transportation is not an option for the part of the facility that receives only truck shipments. The ability of the truck-only part of the facility to accept trucks has no bearing on the degree to which trucks are an effective alternative for rail service to the other part of the facility. Indeed, of the {{ }} truck shipments that this customer received from DuPont between 2006 and 2010, only {{ }} were received by the rail-served portion of the customer's facility.[489] Thus, the number of truck shipments that NS cites as evidence for the feasibility of trucking grossly overinflates the extent to which trucks can compete effectively with rail.

Finally, NS has not factored in the additional infrastructure that DuPont must build at Edge Moor to increase its truck loading capacity, and the lack of available stainless steel tank trucks, which are necessary to support a truck-rail transload operation.[490]

Lane B-60 (Edge Moor to Rumford, ME). The challenged rate on Lane B-60 is NS's rate from Edge Moor to Mechanicville, NY. It is the same rate that has been challenged on Lanes B-56, B-59, and B-62. NS claims that a {{ }} direct truck alternative for this 506 mile truck movement constitutes effective competition.[491] In support of this contention, NS asserts

[489] In Dup Reb WP "DuPont Titanium Dioxide Truck Shipments (corrected)-Rebuttal," "TIO2 2006-2010" worksheet, this destination on all shipments to this location is listed as rail served, even though only {{ }} shipments were to the rail-served portion of the facility.

[490] Dup Op Narr II-B-150 to -151

[491] NS Reply II-B-137. Although the NS narrative states that the trucking rate is {{ }}, both NS Reply Exhibit II-B-1 and NS Reply Workpaper "Direct Truck analysis" state that direct truck costs {{ }} more than rail transportation. NS has informed DuPont that Reply Exhibit II-B-2 is accurate. See Dup Reb WP "Letter from Matthew J. Warren (Jan. 11, 2013).pdf"

that DuPont's customer on this lane can receive trucks.[492] The NS evidence is both factually and logically flawed.

First, the direct truck rate is based on the long-expired contract with Suttles Truck Leasing discussed above and, therefore, is unsupported.[493] Accordingly, market dominance should be determined with reference to the {{ }} direct truck rate[494] that DuPont calculated as the lowest cost alternative in its Opening Evidence. That rate exceeds even the very high 20% threshold above which NS recognizes its market dominance.

Second, the NS price advantage remains {{ }} even after imposing large rate increases From 2009 to 2011, NS extracted a cumulative { } rate increase.[495] To put this in perspective, the connecting carrier {{ }} over the same period.[496] Accordingly, NS has already exercised a substantial amount of market power without constraint

Third, NS ignores the absurdity of a truck rate that would be only {{ }}on a 506 mile movement Truck transportation clearly is a higher cost service at such long distances, because it requires more equipment, personnel and fuel to transport the same volume as rail transportation. This distance also is beyond the range that trucks typically have been considered to be competitive with rail.[497]

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[492] Id.

[493] In NS Reply Workpaper "Direct Truck Analysis," NS proposes Schneider National as an alternative to Suttles, but uses a rate that exceeds the cost of rail transportation by more than 20%, which is the threshold above which NS recognizes its market dominance Moreover, the Schneider rate applies only to backhaul shipments, and any truck shipments on this lane would be fronthaul, not backhaul, shipments See NS Reply WP "0059955 xls," "4th Revised Page 3" worksheet, Line 5, in the "DuPont Trucking Contracts" folder, "Schneider" subfolder

[494] Dup Op Ex II-B-1

[495] Dup Op Ex. II-B-3

[496] Id

[497] See Dup Op Narr 1-28 n 28

Fourth, NS's claim that effective competition is illustrated by the volume of truck shipments to DuPont's customer completely ignores three very critical facts. First, a majority of those truck shipments did not originate at Edge Moor, but at a bulk terminal near to the destination.[498] DuPont still would have to use NS to deliver titanium dioxide to the bulk terminal from Edge Moor. Second, as DuPont described in its Opening Evidence at page II-B-159 to -160, the customer's facility contains two parts, one of which can receive only truck shipments and one that can receive both rail and truck shipments. Titanium dioxide cannot be transferred between the two parts of the facility. Accordingly, rail transportation is not an option for the part of the facility that receives only truck shipments Indeed, of the {{ }}[499] truck shipments that this customer received from DuPont between 2006 and 2010, {{ }} were received by the rail-served portion of the customer's facility. Thus, the number of truck shipments that NS cites as evidence for the feasibility of trucking grossly overinflates the extent to which trucks can compete effectively with rail. Third, the customer was on the verge of bankruptcy in 2010 and had reduced its titanium dioxide consumption substantially.[500] Thus, by 2010, receiving railcar quantities of titanium dioxide was not practical for the customer, and shipping railcar quantities was not prudent for DuPont, because of the high risk of a payment default by the customer [501]

[498] Dup Reb WP "DuPont Titanium Dioxide Truck Shipments (corrected)-Rebuttal," "Lane B60" worksheet

[499] Dup Reb. WP "DuPont Titanium Dioxide Truck Shipments (corrected)-Rebuttal," "Lane B60" worksheet In Dup Reb WP "DuPont Titanium Dioxide Truck Shipments (corrected)-Rebuttal," "TIO2 2006-2010" worksheet, this destination on all shipments to this location is listed as rail served, even though only {{ }} shipments were to the rail-served portion of the facility

[500] NS Reply Exhibit II-B-5 shows { } railcar shipments on this lane in 2008 and none in 2010 and 2011

[501] Under its purchase agreement with DuPont, the customer was not required to pay until {{ }} Dup. Reb WP "NewPage Contract" § 4, "NewPage Contract – 2010 update," at 0010136

Finally, NS has not factored in the additional infrastructure that DuPont must build at Edge Moor to increase its truck loading capacity, and the lack of available stainless steel tank trucks, which are necessary to support a truck-rail transload operation.[502]

Lane B-62 (Edge Moor to Shawmut, ME). The challenged rate on Lane B-62 is NS's rate from Edge Moor to Mechanicville, NY. It is the same rate that has been challenged on Lanes B-56, B-59, and B-60. NS claims that a {{ }} direct truck alternative for a 518-mile[503] road movement constitutes effective competition.[504] In support of this contention, NS asserts that DuPont's customer on this lane can receive trucks because it has a history of doing so.[505] The NS evidence is both factually and logically flawed.

First, the direct truck rate is based on the long-expired contract with Suttles Truck Leasing discussed above and, therefore, is unsupported.[506] Accordingly, market dominance should be determined with reference to the {{ }} direct truck rate[507] that DuPont calculated as the lowest cost alternative in its Opening Evidence. That rate exceeds even the very high 20% threshold above which NS recognizes its market dominance.

Second, the NS price advantage remains {{ }} even after imposing large rate increases. From 2009 to 2011, NS extracted a cumulative { } rate increase.[508] To put this in perspective, the connecting carrier {{ }} over the

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[502] Dup. Op. Narr. II-B-150 to -151.

[503] NS Reply Ex. II-B-1.

[504] NS Reply II-B-137 to -138.

[505] Id. at 137.

[506] In NS Reply Workpaper "Direct Truck Analysis," NS proposes Schneider National as an alternative to Suttles, but incorrectly uses a Schneider reloadable trailer rate that applies only to backhaul shipments, and any truck shipments on this lane would be fronthaul, not backhaul, shipments. See NS Reply WP_0059955.xls, "4th Revised Page 3" worksheet, Line 5, in the "DuPont Trucking Contracts" folder, "Schneider" subfolder.

[507] Dup. Op. Ex. II-B-1.

[508] Dup. Op. Ex. II-B-3.

same period.[509] Accordingly, NS has already exercised a substantial amount of market power without constraint

Third, NS ignores the absurdity of a truck rate that would be only {{ }} on a 518 mile movement Truck transportation clearly is a higher cost service at such long distances, because it requires more equipment, personnel and fuel to transport the same volume as rail transportation. This distance also is beyond the range that trucks historically have been considered to be competitive with rail [510]

Finally, NS has not factored in the additional infrastructure that DuPont must build at Edge Moor to increase its truck loading capacity, and the lack of available stainless steel tank trucks, which are necessary to support a truck-rail transload operation.[511]

Lane B-67 (Edge Moor to West Monroe, LA). The challenged rate on Lane B-67 is NS's rate from Edge Moor to Meridian, MS. It is the same rate that has been challenged on Lane B-50. NS contends that a {{ }} truck-rail transloading alternative constitutes effective competition [512] NS's contention is based on flawed logic and incorrect facts

First, NS has calculated the truck-transload rate incorrectly Although NS uses the same carriers and transload facilities that DuPont used in its Opening Evidence, DuPont calculated a rate that was {{ }} [513] The difference appears to be attributable to NS's use of a backhaul

[509] Id.

[510] See Dup Op Narr I-28 n 28.

[511] Dup Op Narr II-B-150 to -151

[512] NS Reply II-B-137 to -138. It is notable that this NS-calculated rate {{ }}

[513] Dup Op Ex. II-B-2.

truck rate that applies to reloadable trailers,[514] even though these are not backhaul shipments. Also, the rate is from an old rate sheet and does not reflect the rates from the 2011 Bid, as discussed above. Accordingly, market dominance should be determined with reference to the {{ }} transload rate that DuPont calculated in its Opening Evidence.

Second, the transload alternative posited by NS is a truck-to-rail transload that, although theoretically possible, is not done by DuPont or any other titanium dioxide producer to the best of DuPont's knowledge. Also NS's suggested truck-rail transload alternative violates DMIR by involving an interchange at Birmingham rather than Meridian. The challenged rate involves transportation from Edge Moor to Meridian, not Birmingham. See supra Part I.A.2.g.

Finally, NS has not factored in the additional infrastructure that DuPont must build at Edge Moor to increase its truck loading capacity, and the lack of available stainless steel tank trucks, which are necessary to support a truck-rail transload operation.[515] Furthermore, NS has not considered the additional costs associated with railcar cleaning, maintenance, and inspection, which DuPont currently provides at Edge Moor.[516] Nor has NS considered the efficiencies that DuPont realizes by recycling the waste water from tank car cleaning back into its production process at Edge Moor. All of that investment by DuPont at Edge Moor would be stranded.

Lane B-68 (Edge Moor to Wheeling, IL). The challenged rate on Lane B-68 is NS's rate from Edge Moor to Chicago. It is the same rate that is being challenged on Lanes A-11, B-51, and B-58. NS claims that a {{ }} direct truck alternative for this 781-mile road

[514] NS Reply WP "0059955.xls," "4th Revised Page 3" worksheet, Line 5, in the "DuPont Trucking Contracts" folder, "Schneider" subfolder.

[515] Dup. Op. Narr. II-B-150 to -151.

[516] Id. at II-B-151.

movement[517] constitutes effective competition.[518] NS's contention is based on flawed logic and incorrect facts.

First, NS has not calculated the truck rate correctly. DuPont calculated the direct truck rate for this lane in its Opening Evidence using the same motor carrier as NS, but NS uses a lower rate.[519] DuPont's direct truck rate is just {{ }} lower than the total rail transportation cost. The difference between the DuPont and NS truck rates appears to be attributable to NS's use of an old rate instead of the more recent, higher rate that the carrier offered in the 2011 Bid, as discussed above.[520]

Second, the truck and rail rates have {{ }} only recently after NS imposed large rate increases. NS increased its rate by { } in 2010 and by another { } in 2011, for a cumulative increase of { } from 2009 to 2011.[521] That amounts to an increase exceeding { }, which is more than {{ }} the cost differential between NS's direct truck alternative and the total cost of rail transportation, and suggests that the NS rate {{ }} that of the direct truck alternative. In contrast, the connecting carrier on this lane {{ }} from 2009 to 2011,[522] which further illustrates the magnitude of market power that NS has already exerted. After NS has increased its rate over such a short period and by such substantial amounts, it is not surprising that NS's ability to raise its rate any further might appear to be constrained.

[517] NS Reply Ex. II-B-4

[518] NS Reply II-B-138

[519] Dup. Op. Ex. II-B-1

[520] Dup. Reb. Wp. "BID RESULTS MAY 2011," "B-1 – Individual Lanes" worksheet, cell V13, in the "2011 Bid" folder

[521] Dup. Op. Ex. II-B-3.

[522] Dup. Op. Ex. II-B-3.

Third. NS ignores the absurdity of a truck rate that would be {{ }} on a 778 mile movement Truck transportation clearly is a higher cost service at such long distances, because it requires more equipment, personnel and fuel to transport the same volume as rail transportation. This distance also is well beyond the range that trucks historically have been considered to be competitive with rail.[523]

Fourth. NS uses incorrect, irrelevant, and misleading facts to support its contention that direct trucking is effective competition. First, NS suggests that Valspar received {{ }} trucks of titanium dioxide from Edge Moor over the 5 year period from 2006-10.[524] In fact, only {{ }} of those trucks originated at Edge Moor and {{ }} of those truck shipments occurred between August and December 2010,[525] when Edge Moor was shipping by truck to ensure customer supply despite production issues. Taking this into account, direct truck shipments on this lane have accounted for a very small proportion of shipments, and the increased use of trucks in 2010 is easily explained by DuPont's greater need for expedited shipments in that year.

Finally, NS has not factored in the additional infrastructure that DuPont must build at Edge Moor to increase its truck loading capacity, and the lack of available stainless steel tank trucks, which are necessary to support a truck-rail transload operation.[526]

Lane B-97 (Edge Moor to New Johnsonville). The challenged rate on Lane B-97 is NS's rate from Edge Moor to Cincinnati. NS claims that a {{ }} direct truck alternative for an 860-mile road movement[527] and a {{ }} truck-rail transload option[528]

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[521] See Dup Op Narr I-28 n 28

[524] NS Reply II-B-138 NS incorrectly states that DuPont received {{ }} trucks Dup Reb WP "DuPont Titanium Dioxide Truck Shipments (corrected)-Rebuttal," "Lane B68" worksheet.

[525] Dup Reb WP "DuPont Titanium Dioxide Truck Shipments (corrected)-Rebuttal," "Lane B68" worksheet

[526] Dup Op Narr II-B-150 to -151

[527] NS Reply II-B-139

[528] Id at 140

constitute effective competition. In support of this contention, NS asserts that DuPont {{ [redacted] }}.[529] The NS evidence is both factually and logically flawed.

First, NS has incorrectly calculated rates for both the direct truck and transload alternatives. The NS direct truck rate is based on the long-expired contract with Suttles Truck Leasing discussed above and, therefore, is unsupported.[530] Accordingly, market dominance should be determined with reference to the {{ [redacted] }} direct truck rate[531] that DuPont calculated in its Opening Evidence.[532] NS also has calculated the truck-transload rate incorrectly. Although NS uses the same carriers and transload facilities that DuPont used in its Opening Evidence, DuPont calculated a rate that was just {{ [redacted] }} than rail transportation.[533] The difference between the DuPont and NS truck rates appears to be attributable to NS's use of a Schneider National backhaul truck rate that applies to reloadable trailers.[534] Since transloading would not involve backhaul shipments, the Schneider rate that NS uses does not apply here.

Second, the transload alternative posited by NS is a truck-to-rail transload that, although theoretically possible, is not done by DuPont or any other titanium dioxide producer in the real

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[529] Id.

[530] In NS Reply Workpaper "Direct Truck Analysis," NS proposes Quality Carriers as an alternative to Suttles, but uses an incorrect rate. NS used a point-to-point rate that does not apply to campaign shipments. Since DuPont ships the product on this lane primarily in campaigns when the New Johnsonville facility has production problems, NS should have used the per mile rate that applies to campaign shipments. See NS Reply WP "0059266.xls," "24th Revised Page 3" worksheet, in the "Quality Carriers" subfolder of the "DuPont Trucking Contracts" folder. DuPont used this campaign rate to calculate the truck costs on this lane.

[531] Dup Op Ex II-B-1.

[532] NS also ignores the absurdity of a truck rate that would be just {{ [redacted] }} on an 860-mile movement. Truck transportation clearly is a higher cost service at such long distances, because it requires more equipment, personnel and fuel to transport the same volume as rail transportation. This distance also is beyond the range that trucks typically have been considered to be competitive with rail. See Dup Op Narr. I-28 n.28.

[533] Dup Op Ex. II-B-2.

[534] NS Reply WP "0059955.xls," "4th Revised Page 3" worksheet, Line 5, in the "DuPont Trucking Contracts" folder, "Schneider" subfolder.

world to the best of DuPont's knowledge. Also, the product on this lane is a base material that has a thicker consistency than the slurry on the other titanium dioxide case lanes, which leads to larger heels and makes the product difficult to pump out of trucks and transload to railcars [535]

Third, the {{ }} between the rail and transload rates is the result of NS exercising its market power to impose large rate increases. NS increased its rate by { } in 2010, and by { } in 2011, which amounts to a cumulative rate increase of { } from 2009 to 2011.[536] In contrast, the connecting carrier on this lane {{ }} between 2009 and 2011.[537] After NS has increased its rate over such a short period and by such substantial amounts to {{ }} the rate of an alternative mode, it is not surprising that NS's ability to raise its rate any further might appear to be constrained. The reality, however, is that NS has increased its rate to match that of a much higher cost alternative

Fourth, NS's discussion of the truck shipment history on this lane is disingenuous. The {{ }}[538] truck shipments from Edge Moor to New Johnsonville in August 2010 were an emergency lifeline to keep the New Johnsonville plant running. In August 2010, New Johnsonville began to experience production issues and had an acute need for base material from Edge Moor to keep from shutting down. Thus, DuPont's use of trucks over this period has no bearing on the difficulty of trucking this grade of titanium dioxide.[539] Also, the broader truck

[535] Dup Op Narr. II-B160

[536] Dup Op Ex. II-B-3

[537] Dup Op. Ex II-B-3

[538] Dup Reb WP "DuPont Titanium Dioxide Truck Shipments (corrected)-Rebuttal," "Lane B97" worksheet NS's claim of {{ }} truck shipments is incorrect. See supra note 369

[539] NS appears to suggest that, if the difficulties of trucking this product were as bad as DuPont claims, DuPont would have chosen to shut down New Johnsonville rather than use trucks shipments to keep it running. See NS Reply II-B-139 n 146.

history speaks for itself—in the 4 years leading up to August 2010, New Johnsonville received only {{[redacted]}} truck shipments: {{[redacted]}} from Edge Moor in 2006 and {{[redacted]}} from Chicago in 2007.[540]

Finally, NS has not factored in the additional infrastructure that DuPont must build at Edge Moor to increase its truck loading capacity, and the lack of available stainless steel tank trucks, which are necessary to support a truck-rail transload operation.[541] Furthermore, NS has not considered the additional costs associated with railcar cleaning, maintenance, and inspection, which DuPont currently provides at Edge Moor.[542] Nor has NS considered the efficiencies that DuPont realizes by recycling the waste water from tank car cleaning back into its production process at Edge Moor. All of that investment by DuPont at Edge Moor would be stranded.

Lane B-109 (New Johnsonville to Chapman, PA). The challenged rate on Lane B-109 is NS's rate from Cincinnati to Chapman, PA. NS claims that a {{[redacted]}} direct truck alternative for an 887-mile[543] road movement, and a {{[redacted]}} rail-truck transload option[544] constitute effective competition.[545] The NS evidence is both factually and logically flawed.

First, the direct truck rate that NS uses is based on a non-existent truck rate with Factory & Steel and, therefore, is unsupported.[546] Accordingly, market dominance should be determined with reference to the {{[redacted]}} direct truck rate[547] that DuPont calculated as the lowest

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[540] Dup. Reb. WP "DuPont Titanium Dioxide Truck Shipments (corrected)-Rebuttal," "Lane B97" worksheet.

[541] Dup. Op. Narr. II-B-150 to -151.

[542] Id. at II-B-151.

[543] NS Reply Ex. II-B-5.

[544] Id. at 140. In its Reply Evidence, NS describes the transloading alternative as including Edge Moor-originating trucks that would transload to CSXT rail for final delivery at Chapman. This appears to be an error by NS because the Chapman customer is not served by CSXT and such alternative would violate the Board's geographic competition rules. Accordingly, DuPont has addressed the transload alternative presented in NS Reply Exhibit II-B-3, which involves rail to CSXT TRANSFLO in Philadelphia and truck to Chapman, PA.

[545] NS Reply II-B-140.

[546] Even if the Factory & Steel contract was still in effect, NS fails to recognize Factory & Steel's equipment and service problems that led DuPont to drop it as an approved carrier in 2011, which are described supra in the paragraph accompanying note 409.

[547] Dup. Op. Ex. II-B-1.

cost alternative in its Opening Evidence That rate exceeds even the very high 20% threshold above which NS recognizes its market dominance.

Second, the {{ }} between the rail and transload rates is the result of NS exercising its market power to impose large rate increases NS increased its rate by { } in 2010, and by { } in 2011, which amounts to a cumulative rate increase of { } from 2009 to 2011 [548] Of course, the rates of alternative transportation might appear competitive after such an extensive exercise of market power In contrast, the connecting carrier on this lane {{ }} between 2009 and 2011.[549] Accordingly, NS's rates are already at supracompetitive levels, and its claim that rail-truck transloading provides an effective constraint is not credible.

Third, the actual shipping history for this lane indicates that only {{ }} of the titanium dioxide that DuPont ships to this customer is delivered by truck.[550] And, as DuPont explained on page II-B-160 of its Opening Evidence, {{ }} This supports DuPont's assertion that the customer on this lane prefers railcars NS's claim that DuPont has not presented any evidence of this customer's preference for rail is belied by both this fact and the testimony of DuPont witnesses who are responsible for knowing the customer's needs.

Finally, NS has not factored in the lack of available stainless steel tank trucks, which are necessary to support direct trucking and a truck-rail transload operation.

Lane B-111 (New Johnsonville to Morrow, GA). The challenged rate on Lane B-111 is NS's rate from Cincinnati to Chapman, PA. NS claims that a {{ }} direct truck

[548] Dup. Op Ex. II-B-3

[549] Id.

[550] There were {{ }} truck shipments from 2008 to 2010, Dup Reb WP "DuPont Titanium Dioxide Truck Shipments (corrected)-Rebuttal," "Case Lane Shipments by Year" worksheet and { } railcar shipments, NS Reply Ex. II-B-5

alternative and a {{ }} rail-truck transload option constitute effective competition [551] The NS evidence is both factually and logically flawed.

First, NS has not calculated a correct transload rate. DuPont calculated the lowest cost transload alternative to be {{ }} higher than rail transportation.[552] The difference appears to be attributable to NS's use of a Schneider National backhaul truck rate that applies to reloadable trailers.[553] Since transloading would not involve backhaul shipments, the Schneider rate that NS uses does not apply here Accordingly, market dominance should be determined with reference to the {{ }} transload rate[554] that DuPont calculated in its Opening Evidence.[555] That rate exceeds even the very high 20% threshold above which NS recognizes its market dominance.

Second, the {{ }} between the rail and truck rates is the result of NS exercising its market power to impose large rate increases NS increased its rate by { } in 2010, and by { } in 2011, which amounts to a cumulative rate increase of { } from 2009 to 2011.[556] In contrast, the connecting carrier on this lane {{ }} between 2009 and 2011, which clearly illustrates NS's market-dominant position.[557] It is not surprising that the rates of alternative transportation appear competitive after such an extensive exercise of market

[551] NS Reply II-B-141

[552] Dup. Op Ex II-B-2

[553] NS Reply WP "0059955 xls," "4th Revised Page 3" worksheet, Line 5, in the "DuPont Trucking Contracts" folder, "Schneider" subfolder

[554] Dup Op Ex. II-B-1

[555] The direct truck rate that NS uses is based on a non-existent truck rate with Factory & Steel and, therefore, is unsupported Accordingly, the Board should use the direct truck rate that DuPont calculated, which is {{ }} higher than the cost of rail transportation Dup Op. Ex. II-B-2 Nevertheless, because the DuPont rate calculation is {{ }}. NS's error is irrelevant

[556] Dup Op Ex II-B-3.

[557] Id.

power The reality, however, is that NS has increased its rate to match that of a much higher cost alternative.

Third, NS's claim that effective competition is illustrated by the volume of truck shipments to DuPont's customer completely ignores that NS rail service from New Johnsonville was severed by flooding in 2010. Of the {{ }} truck shipments that NS identifies in 2009 and 2010.[558] {{ }} were a direct result of the flooding at New Johnsonville.[559]

Finally, NS has not factored in the lack of available stainless steel tank trucks, which are necessary to support direct trucking and a truck-rail transload operation

Lane B-124 (New Johnsonville to McDonough, GA). The challenged rate on Lane B-124 is NS's rate from New Johnsonville to McDonough, GA NS claims that a {{ }} direct truck alternative[560] and an {{ }} rail-truck transload option[561] constitute effective competition. The NS evidence is both factually and logically flawed

First, NS has not calculated a correct transload rate. DuPont calculated the lowest cost transload alternative to be {{ }} higher [562] The difference appears to be attributable to NS's use of a Schneider National backhaul truck rate that applies to reloadable trailers [563] Since transloading would not involve backhaul shipments, the Schneider rate that NS uses does not apply here. Accordingly, market dominance should be determined with reference to the {{ }}

[558] NS Reply II-B-141 NS's claim of {{ }} truck shipments is incorrect See supra note 369

[559] Dup Reb WP "DuPont Titanium Dioxide Truck Shipments (corrected)-Rebuttal," "Case Lane Shipments by Year" worksheet These shipments occurred in May and June 2010, when the flooding was affecting rail service

[560] NS Reply II-B-141.

[561] NS Reply II-B-142.

[562] Dup Op Ex. II-B-2

[563] NS Reply WP "0059955 xls," "4th Revised Page 3" worksheet, Line 5 in the "DuPont Trucking Contracts" folder, "Schneider" subfolder.

{{ }} transload rate[564] that DuPont calculated in its Opening Evidence.[565] That rate exceeds even the very high 20% threshold above which NS recognizes its market dominance.

Second, the {{ }} between the rail and direct truck rates is the result of NS exercising its market power to impose large rate increases. NS increased its rate by { } in 2010, and by { } in 2011, which amounts to a cumulative rate increase of { } from 2009 to 2011.[566] In contrast, the connecting carrier on this lane {{ }} between 2009 and 2011, which clearly illustrates NS's market dominant position.[567] Not surprisingly, after such an extensive exercise of market power, the rates of alternative transportation would appear competitive. The reality, however, is that NS has increased its rate to match that of a much higher cost alternative.

Finally, NS has not factored in the lack of available stainless steel tank trucks, which are necessary to support direct trucking and a truck-rail transload operation.

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[564] Dup Op Ex II-B-1

[565] The direct truck rate that NS uses is based on a non-existent truck rate with Factory & Steel and, therefore, is unsupported. Accordingly, the Board should use the direct truck rate that DuPont calculated, which is {{ }} higher than the cost of rail transportation. Dup Op Ex II-B-2. Nevertheless, because the DuPont rate calculation is {{ }}, NS's error is irrelevant.

[566] Dup Op Ex II-B-3

[567] Id.

s. Waste Flammable Liquid[568]

In its Opening Evidence, DuPont challenged 2 NS rates for transporting waste flammable liquid from DuPont's facility in Lemoyne, AL (a/k/a Mobile or Axis) to 2 destinations: a Giant Cement facility in Giant, SC (Lane A-16); and an Energis facility in Artesia, MS (Lane B-76). NS, in its Reply Evidence, has contested market dominance over only the Lane B-76 rate, which applies to a joint-line segment running from Lemoyne to Meridian, MS NS contends that {{ }} direct truck transportation constitutes effective competition on this lane.[569]

NS ignores that the difference in cost between rail and direct truck transportation is the result of very recent and large NS rate increases. From 2009 to 2011, the NS rate has increased {{ }}.[570] In contrast, over that same period, the connecting carrier on this lane raised its rates by {{ }}.[571] which illustrates the degree to which NS has already exercised its market power. Indeed, trucks do not transport any waste flammable liquid from Lemoyne to Artesia,[572] even after this increase Not surprisingly, the truck alternative appears competitive after such a dramatic rate increase. The fact that NS would impose such a large cumulative increase in such a short period, placing its rate {{ }} than the direct truck rate, confirms either that NS knows that trucking is not a viable alternative to rail on this lane or that NS simply has no desire to handle this traffic. Both explanations lead to a conclusion of market dominance

Although NS claims that such dramatic rate increases were "{ }." that cannot explain the full magnitude of these rate increases. NS alleges that DuPont's legacy contract that expired in 2009 {

[568] The evidence and testimony in this section is jointly sponsored by Mary Pileggi Logistics Manager-NA Region, and Mark Mclendon Master Scheduler at DuPont's Lemoyne facility

[569] NS Reply Br. II-B-189; NS Reply Ex II-B-2.

[570] Dup Op Ex II-B-3

[571] Id.

[572] NS Reply WP "DuPont Waste Liquids Truck Shipments"

[redacted] This translates to a 46.8% increase in the contract rates over that time [573] But during that same time NS's variable costs for transporting flammable liquid waste increased by 54.1%, which would justify only a 5 0% post-contract rate increase.[574]

Finally, NS suggests a direct truck alternative that violates DMIR. Under DMIR, direct trucking to the final destination is not an alternative where the challenged rate only applies to an interchange. See supra Part I.A.2.g.

[573] Dup Reb Ex II-B-1, at 1.

[574] Dup Reb Ex II-B-1, Attachment 1, columns (8), (9)

t. Zircon Sand[575]

In its Opening Evidence, DuPont challenged 2 NS rates for transporting Zircon sand ("Zircon") on the following joint-line movements from DuPont's mine at Starke/Lawtey, FL to its customer at Huntsville, AL:

Table II-B-12
Contested Zircon Lanes

Lane #	Origin	Interchange	Destination	Customer
B-116	Starke/Lawtey, FL	Decatur, AL	Huntsville, AL	Saint Gobain
B-117	Starke/Lawtey, FL	Decatur, AL	Huntsville, AL	Saint Gobain

While both rates cover the same geographical movement, from Decatur to Huntsville, the B-116 rate applies to transportation in private railcars, and the B-117 rate applies to transportation in railroad-owned railcars.[576] NS, in its Reply Evidence, has contested market dominance over both lanes, contending that a {{ }} truck rate constitutes effective competition.[577]

First, the truck rate used by NS does not exist, and therefore, NS's claim of effective competition is unsupported. NS bases its claim on a historical {{ }} truck rate that DuPont paid for each truck shipment of Zircon between Starke and Huntsville from 2009 to 2010.[578] This rate was a contract rate that DuPont and {{ }} eliminated from their contract when they agreed upon new rates in 2010.[579] The rates in the current agreement with {{ }} do not cover this transportation.[580]

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[575] The evidence and testimony in this section is jointly sponsored by Mary Pileggi, Logistics Manager-NA Region and James R. Kanicky, Ores Business Manager.

[576] Dup Op Br II-B-169.

[577] NS Reply Br II-B-178.

[578] Id.

[579] See NS Reply WP "0059955.xls" ({{ }} in the "DuPont Trucking Contracts" folder, "{{ }}" subfolder. The rate expired on August 31, 2010.

[580] Id.; NS Reply Br II-B-178.

Second. NS offers no support for how it calculated the Schneider National truck alternative cost listed for these lanes in NS Reply Exhibit II-B-2. According to NS, a breakdown of the calculations can be found in NS Reply Workpaper "Direct Truck Analysis."[581] but that workpaper arrives at different—much higher— truck alternative costs for these lanes, based on DuPont's contract rates with carriers other than Schneider.

Third, NS's assumption that DuPont could obtain a comparable rate today[582] is inconsistent with reality. Indeed, NS offers two truck rate alternatives to the non-existent Schneider rate, and both of these alternatives are above the 20% threshold that even NS itself uses to determine effective competition.[583] Specifically, NS claims that CRST can provide direct truck transportation at a rate that is {{ }} than the total rail rate for Lane B-116, and Blue Flash Express can provide direct truck transportation at a rate that is {{ }} higher than the total rail rate for Lane B-117.[584]

Fourth, NS overlooks the need to use pneumatic trucks, at a cost that is more than {{ }}[585] than rail, to prevent expensive losses and avoid safety risks when unloading at St Gobain. As DuPont explained on page II-B-170 of its Opening Brief, unloading bags at St. Gobain is a difficult and potentially dangerous process. Moreover, the use of bags increases the potential for product loss, because some Zircon gets caught within the bags and the bags are susceptible to puncture by the forklifts used to move them.[586] Given that Zircon costs {{ }}[587] and each bag holds 2 tons of Zircon, a simple puncture of one of the many

[581] NS Reply Br. II-B-106.

[582] NS Reply Br. II-B-178.

[583] NS Reply WP "Direct Truck Analysis."

[584] NS Reply WP "Direct Truck Analysis."

[585] Dup. Op. Ex. II-B-1 (first entry for each lane).

[586] Dup. Op. Br. II-B-170.

[587] See id., Dup. Op. WP "St. Gobain Invoice" in the "Sand Zircon" folder.

bags in a truckload can be a {{ }} expense that negates any cost benefit of using trucks to transport bagged Zircon Also, because of the quantities of bags involved in bag truck transportation and the size of each bag, the inherent loss associated with using bag packaging adds up over an entire shipment, thereby reducing or eliminating the cost advantage of bag trucks. Pneumatic trucks minimize these product loss and safety risks that plague bag trucks and, therefore, are the most economic option for transporting Zircon by truck [588]

Fifth, just because DuPont used bag trucks to transport Zircon to St Gobain in emergency situations, does not mean that NS should assume that bag trucks would be justified to shift traffic off of rail in the future. In its Opening Brief, DuPont explained that due to the extremely short market for Zircon, customers often needed expedited shipments to avoid plant shutdowns and production delays.[589] Faced with costs of plant shutdowns and production delays, the use of bag trucks for these expedited shipments was acceptable to St. Gobain. Bag trucks would not be acceptable, however, as the primary mode of delivery

Sixth, NS's claim that DuPont's statements concerning the use of pneumatic trucks are contradictory is simply incorrect. Referring to DuPont's responses to NS Interrogatories 43-45, NS states that "DuPont claimed in one interrogatory response that zircon sand must be trucked in bags and not open trucks, arguing that the fine grains of zircon sand creates a potential of product loss."[590] NS claims that response contradicts a separate response in which DuPont claimed that {{ }}"[591] There is nothing contradictory in these statements because pneumatic trucks are not open trucks. Furthermore, in a particularly egregious misrepresentation of the first

[588] Dup Op Br II-B-170

[589] Dup Op Br II-B-171

[590] NS Reply Br II-B-177

[591] Id.

referenced discovery response. NS only quoted part of that response. The full response clearly acknowledged the ability to use pneumatic trucks.

> |T]ruck only in bags b/c fine grain creates high loss potential and short distance pneumatic trucks| |[592]

Seventh. NS's market dominant position is not surprising given that this lane covers a highway distance of 506 miles.[593] Truck transportation clearly is a higher cost service at such long distances, because it requires more equipment, personnel, and fuel to transport the same volume as rail transportation. This distance also is beyond the range that trucks historically have been considered to be competitive with rail. (See Dup. Op. Narr I-28 n 28.)

Finally. NS suggests a direct truck alternative that violates DMIR Under DMIR, direct trucking to the final destination is not an alternative where the challenged rate only applies to an interchange. See supra Part I.A.2 g

[592] NS Reply WP "DuPont Responses to Interrogatories 13-15 pdf" (emphasis added)

[593] NS Reply Ex II-B-1

3. The Limit Price Methodology is lawful and economically sound.[594]

In M&G Polymers USA, LLC v. CSX Transp. Inc., Docket No. NOR 42123 (served Sept. 27, 2012) (hereinafter "M&G Decision"), the Board proposed a new quantitative methodology, termed the "Limit Price Methodology" ("LPM"), that would supplement the market dominance determination. That decision, however, was only a preliminary decision, subject to the Board's evaluation of comments submitted by multiple parties on November 28, 2012. Before the Board could issue a final decision on the LPM, however, M&G and CSXT entered into a settlement agreement and the case was dismissed. Therefore, it is uncertain whether the Board intends to apply the LPM in future cases, and if so, whether the LPM would take a different form from that proposed in the M&G Decision.

In the event the Board does intend to apply the LPM to this case, NS has objected to it as unlawful and economically unsound. NS Reply II-B-40 to -57. DuPont addresses the NS legal arguments in Part I.A.2.h. of the Counsel's Argument and Summary of Evidence.

In contrast, DuPont believes that the LPM is both lawful and economically justified, but not in the form proposed in the M&G Decision. DuPont supports the Board's use of the LPM in this case, with the following two modifications:

- The LPM should only be used to presume the *absence*, but not the *existence*, of effective competition. Otherwise, anytime that there is a transportation alternative with an LP R/VC ratio below the RSAM ratio, a railroad could confidently set rates at the RSAM ratio and be immunized from a regulatory challenge. The practical effect would be to set a rail rate floor at the RSAM ratio whenever there is a transportation alternative with an LP R/VC ratio below the RSAM ratio. Therefore, the Board should continue to determine the *existence* of effective competition solely based upon traditional qualitative market dominance factors.
- The Board should use the $R/VC_{>180}$ benchmark in lieu of the RSAM, although it makes no difference in this proceeding because both benchmarks are nearly identical.

[594] The testimony and evidence in this subpart is sponsored by Thomas D. Crowley.

DuPont has performed the LPM analysis upon the alternative transportation rates that both it and NS have calculated in their Opening and Reply Evidence, respectively.

a. Overview of the LPM.

The Board adopted the LPM because it perceived a need for an objective approach to determine whether alternative transportation options may be effective competitive constraints upon the challenged rates. The Board found this determination to be particularly challenging for issue movements where there were physically viable alternatives with rates that were similar to or below the challenged rail rates Many of DuPont's issue movements fit this description

In the M&G Decision, CSXT, like NS in this proceeding, argued that the similarity of rates alone established the presence of effective competition The Board correctly rejected CSXT's position, because a monopolist could raise its rates to the point where they would be constrained by a "patently ridiculous" higher cost alternative. M&G Decision at 3. 12-13. In order to facilitate its identification of such situations, the Board proposed the LPM to serve as an objective means to reach a preliminary, but rebuttable, conclusion as to whether alternative transportation options are effective competitive constraints. The Board concluded that the LPM was desirable because the increasing use of regulatory remedies by non-coal shippers for dozens, if not hundreds, of lanes has complicated the market dominance inquiry and threatens to dwarf the SAC analysis in complexity. M&G Decision at 3.

The LPM first requires a party to determine the "Limit Price" of the alternative transportation For single line movements, the Limit Price is the lowest rate available using alternative transportation. For joint line movements, the Limit Price also will be the lowest alternative rate, if the alternative route is between the same end points as the issue movement: otherwise, if the alternative rate is for transportation that originates or terminates at a different point, the Board has proposed a formula to back out the price attributable just to the portion of

the alternative that is parallel or otherwise comparable to the issue movement.[595] Although the Board was not confronted by this issue in the M&G Decision, the Limit Price also will need to reflect the cost of capital investments and extra operating expenses that a shipper or receiver may need to incur in order to make use of the alternative transportation. Alternatively, those costs must be considered in rebutting the Limit Price presumption.

Second, the LPM calculates a Limit Price Revenue to Variable Cost ("LP R/VC") ratio. The LP R/VC ratio is the R/VC ratio that NS would earn on the issue movements if it matched the price of the alternative transportation.

Third, the Board compares the LP R/VC ratio to the most recent 4-year average RSAM ratio for the defendant, which in this case is 275% for NS. M&G Decision at 14. This RSAM ratio measures the average R/VC ratio that NS would need to earn on all of its potentially captive (*i.e.*, above 180% R/VC) traffic to be considered "revenue adequate," as defined by the Board. If the LP R/VC ratio is greater than the RSAM ratio, the Board preliminarily concludes that the alternative is not an effective constraint. If the LP R/VC ratio is less than the RSAM ratio, the Board preliminarily concludes that the alternative is an effective constraint.

Fourth, and last, either party may attempt to rebut the preliminary conclusions rendered by the foregoing analysis with evidence of "intangible" features, such as unquantifiable benefits or costs associated with the alternative transportation or rail transportation. M&G Decision at 14. The greater the difference between the LP R/VC and the RSAM, in either direction, the greater the Board would require the evidence of intangible features to be in order to overcome the preliminary conclusion.

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[595] The need to calculate a Limit Price for a joint movement that originates or terminates at a different point from the issue movement may be moot in this case. As DuPont argued at pages I-12 to -14 of its Opening Evidence and in Part I-A-2.g. of this Rebuttal, the only lawful alternative transportation to the issue movement is transportation between the same origin and destination to which the challenged rate applies.

The LPM is applied only *after* an alternative transportation option is determined to be practically feasible. M&G Decision at 12. The M&G Decision distinguishes between practical and economic feasibility. Id. at 3 n. 5. The LPM is used only to assist with the latter determination. All of the factors that are relevant to a traditional market dominance analysis will continue to be considered in the practical feasibility determination. Moreover, those factors also would be relevant to the consideration of intangible features that could be presented to rebut the preliminary conclusions of the LPM as to economic feasibility.[596] Therefore, the LPM is most accurately viewed as a supplement to, not a replacement for, a traditional market dominance analysis.

b. The LPM should only be used to presume the absence of effective competition.

The Board's adoption of the LPM is reasonable, but only as an indicator that a transportation alternative is *not* an effective constraint. Although it is appropriate for the Board to conclude that an alternative transportation option is *not* an effective competitive constraint if the LP R/VC ratio is above the RSAM ratio, the opposite conclusion is unlawful and unsupportable, and thus would be arbitrary and capricious. If the LP R/VC ratio is below the RSAM ratio, the Board should conduct its traditional qualitative market dominance assessment, rather than presume that there is effective competition.

The logic underlying the LPM strongly supports a conclusion that alternative transportation options are *not* effective competitive constraints when the LP R/VC ratio exceeds

[596] Although this is implied by the M&G Decision, the Board's choice of the term "intangible" leaves room for doubt. "Intangible" means "not definite or clear to the mind, vague, elusive." Random House Webster's College Dictionary (1991). In contrast, the M&G Decision describes "intangible features" as "unquantifiable benefits" or "unquantifiable costs." M&G Decision at 14. Such benefits or costs are not indefinite, unclear, vague or elusive; they simply are not easily quantified. Indeed, DuPont has discussed such "intangible features" with great specificity in its evidence (*e.g.*, industry dependence upon rail cars for storage, product integrity). Therefore, DuPont urges the Board to clearly define "intangible features" by reference to the types of traditional qualitative market dominance evidence that the Board has considered in the past to evaluate the existence or absence of effective competition.

the RSAM ratio In contrast, the logic does not support a conclusion that effective competition exists when the LP R/VC ratio is less than the RSAM ratio. Therefore, the Board should apply the LPM only to determine the *absence* of effective competition.

The LPM is predicated upon the following logic:

1. The Limit Price is the point up to which the railroad will retain the issue traffic, based on a presumption that the traffic is demand elastic and a shipper would switch to the alternative provider based solely on the relative rate levels
2. If the Limit Price R/VC is greater than the RSAM ratio, the Board presumes the railroad is exercising market dominance at that price because the Limit Price would be above the rate level that the railroad would need to impose on captive shippers in order to achieve revenue adequacy.
3. If the Limit Price R/VC is less than the RSAM ratio, the Board presumes the railroad is not exercising market dominance at the Limit Price because it would be below the rate level that the railroad would need to impose on captive shippers in order to achieve revenue adequacy.

As discussed in more detail below, although Point #1 is subject to significant exceptions, DuPont believes that is accounted for by the opportunity to present evidence of intangible factors Point #2 makes economic sense because RSAM (or more accurately $R/VC_{>180}$) represents the theoretical tipping point where market power is exerted to the extent that it is reasonable to presume that an alternative transportation option is not an effective constraint. In contrast, the logic underlying Point #3 is fundamentally flawed, and thus that presumption should be discarded as unlawful, arbitrary and capricious.

As to Point #1, a railroad may still retain traffic even when rail rates exceed the Limit Price if rail offers inherent advantages over trucks. For example, DuPont has presented evidence that many of the issue commodities are intrinsically tied to rail transportation, such that lower-priced truck transportation is used primarily to serve customers only at close distances, for small volume shipments, and in emergencies (even higher-priced trucks would be used in emergencies). As a result, NS rail rates above the Limit Price may not cause a traffic shift to

alternative transportation. DuPont believes that the Board intended to account for such factors through its consideration of intangible features [597] M&G Decision at 14.

DuPont believes that there is a sound economic basis for Point #2, that an LP R/VC ratio above the RSAM ratio strongly indicates the absence of effective competition The RSAM ratio represents the average R/VC ratio that a railroad must charge its potentially captive traffic to achieve revenue adequacy (as defined by the STB) A railroad clearly possesses market dominance over a movement with no competitive alternatives priced below that level. Therefore, it is eminently reasonable to presume that an alternative transportation option is not an effective constraint if its LP R/VC ratio is above the RSAM ratio Indeed, the RSAM ratio is a conservatively high threshold, because a higher LP R/VC ratio would mean that the railroad is pricing above what it needs to achieve revenue adequacy from its captive traffic. Furthermore, it is reasonable to find that this already quite strong preliminary conclusion of no effective competition grows even stronger as the difference between the RSAM and the LP R/VC increases.

In contrast, the foregoing logic fails in the opposite situation covered by Point #3. Although the RSAM ratio is a useful threshold for demonstrating an absence of effective competition when the LP R/VC ratio is greater, its utility is based upon the fact that it is such a high number In other words, a Limit Price that permits a railroad to charge in excess of what it needs to recover from its captive traffic to achieve revenue adequacy is a very strong, if not definitive, indicator that it is not an effective competitive constraint. Since the RSAM ratio is such a high benchmark, there necessarily will be significant amounts of captive traffic with alternative LP R/VC ratios below the RSAM ratio that are not effectively constrained by the

[597] See supra note 596.

alternative transportation rates Thus, it is not rational to conclude that an LP R/VC ratio below the RSAM ratio indicates the existence of effective competition

Furthermore, because the RSAM ratio is the average R/VC ratio that the railroad would need to charge its potentially captive traffic to achieve revenue adequacy, by definition there still is a substantial amount of captive traffic that is priced below the RSAM level. The Board itself notes this fact in the M&G Decision, at 15, when it quotes from the D.C. Circuit's decision in BNSF Ry. v. STB, 453 F.3d 473, 481 (D C. Cir. 2006), in which the Court observed that "because the average derived by the RSAM is the average for captive shippers only.. the ratios for some captive shippers must be above and some below that figure." The Court explicitly noted that "even a shipper with inelastic demand may be charged less than the average derived by the RSAM," and that this would "inevitably" occur because the average derived by the RSAM is based upon evaluation of captive shippers only, which means that some captive shippers must have rates below the RSAM level. Id. Therefore, because the RSAM ratio represents an average R/VC based upon theoretical contribution levels from all captive shippers, it would be inaccurate and arbitrary to presume the *existence* of effective competition, even preliminarily, merely based upon an LP R/VC ratio that is below the RSAM ratio.

The foregoing is illustrated by the 4-year average $R/VC_{>180}$ ratio, which is below the RSAM ratio for every railroad except NS, because NS has been determined to be revenue adequate based on the STB's revenue adequacy standard over most of the four-year period covered by the average ratios See Simplified Standards for Rail Rate Cases—2010 RSAM and $R/VC_{>180}$ Calculations, Ex Parte No 689 (Sub No 3) (served Feb 27, 2012) Whereas the RSAM ratio reflects what a railroad would need to earn on average from its potentially captive traffic to achieve revenue adequacy as defined by the STB, the $R/VC_{>180}$ ratio reflects what a

railroad actually is earning on average from its potentially captive traffic. Because all but one railroad has a four year average $R/VC_{>180}$ ratio that is below its RSAM ratio, there clearly is a substantial amount of captive traffic moving below the RSAM ratio. Thus, an LP R/VC ratio *below* the RSAM ratio does not indicate the existence of effective competition

A fundamental flaw in the Board's reasoning for using the RSAM ratio to presume the *existence* of effective competition is graphically demonstrated by the very precedent upon which the Board relies In note 42 on page 15 of the M&G Decision, the Board quotes a sentence fragment from page 81 of its September 5, 2007 decision in Simplified Standards for Rail Rate Cases, EP 646 (Sub-No. 1) ("Simplified Standards"), to suggest that a rate that falls below the RSAM is "being constrained by ..market forces " But the Board was not referring to an "effective" competitive constraint Indeed, that discussion was not in the context of market dominance at all, but rather for the purpose of determining a reasonable rate level under the Three-Benchmark rate reasonableness approach, *after* a separate market dominance determination already has been made. Moreover, the Board was talking about the "comparison rates" used to determine a maximum reasonable rate in the Three-Benchmark approach, which the Board itself has described as a "cruder methodology." Id., slip op at 28 As the Board well knows, the RSAM ratio is used as the numerator in a fraction ($R/VC_{>180}$ is the denominator) applied to adjust the average R/VC ratio of "comparable" potentially captive rail movements upward or downward based upon the defendant carrier's revenue adequacy or inadequacy. Id., slip op at 20-21. The Board's out of context citation, to support a presumption of effective competition when the LP R/VC ratio is below the RSAM ratio, leads to the erroneous conclusion that any rail rate below the RSAM ratio must be reasonable, which clearly is not accurate.

Similarly, it would be unlawful as contrary to the Board's governing statute to apply the LPM to presume the existence of effective competition based upon an LP R/VC ratio below the RSAM, because that effectively would replace the quantitative market dominance jurisdictional threshold of 180% R/VC with the RSAM ratio for many rail movements. Anytime that there is a transportation alternative with an LP R/VC ratio below the RSAM ratio, a railroad could confidently set rates at the RSAM ratio and be immunized from a regulatory challenge. This would be true even if the railroad would have to raise its rates by 20%, 50%, or even 100% or more to equal its RSAM ratio, which is precisely what NS has done in this case.[598] In that situation, the Board's LPM would *sub silentio* overturn the holding in DuPont Plastics, slip op. at 7, that a 10% rate disparity after a substantial rate increase is sufficient to demonstrate the lack of effective competition. The practical effect would be to set a rail rate floor at the RSAM ratio whenever there is a transportation alternative with an LP R/VC ratio below the RSAM ratio. Thus, the jurisdictional threshold effectively would increase from 180% R/VC to the RSAM ratio, which is contrary to the statute. See 49 U.S.C. § 10707(d)(1)(A).

The Board should not be concerned that the LPM works only to determine that effective competition does not exist. The Board's previous use of rebuttable presumptions in the market dominance analysis also worked the same way. The "cost test," the "market share test," the "substantial investment test," and the "rate bureau test" all established rebuttable presumptions that market dominance existed, without any inverse presumption that market dominance did not exist on the other side of the threshold benchmark. See Market Dominance Determinations, 365 I.C.C. 118, 121-27 (1981).

[598] See supra Part II.B.2., Dup. Op. Ex. II-B-3.

The Board is improperly trying to use the RSAM ratio as a fulcrum to establish a presumption that effective competition exists above the ratio and is absent below the ratio As demonstrated above, there can be no single point that serves both objectives, and the Board's attempt to shoehorn the RSAM ratio into that role is arbitrary While the LPM is suitable for presuming the *absence* of effective competition when the LP R/VC ratio exceeds the RSAM ratio, it is not suitable for presuming the *existence* of effective competition when the LP R/VC ratio is below the RSAM ratio Therefore, the Board should abandon the latter presumption

c. The Board should substitute $R/VC_{>180}$ for RSAM.

The Board has not clearly explained why it chose the RSAM over other possible threshold measures. In particular, how does a measure related to a carrier's revenue adequacy indicate effective competition? On this question, DuPont and NS are partially in agreement.[599] However, whereas NS stops at this point, DuPont asserts that the $R/VC_{>180}$ ratio would be the appropriate LPM benchmark for a revenue inadequate railroad

The RSAM ratio is a technical benchmark that represents the average R/VC ratio that must be earned from potentially captive traffic to achieve revenue adequacy, as determined by the Board. *The RSAM ratio has nothing to do with actual railroad pricing of captive traffic* Nor does revenue adequacy have any role to play in the market dominance determination Rather, the RSAM ratio is a workable threshold for the LPM only because it is a conservatively high figure above which it is appropriate to presume the *absence* of effective competition As discussed above, it would be arbitrary to presume that alternative transportation rates in the upper range of where a railroad would be expected to price its captive traffic are effective competitive constraints. Also, because the RSAM ratio is an exceedingly high threshold, it is

[599] See NS Reply II-B-52 to -54 (objecting to RSAM because revenue adequacy is irrelevant to determining the existence of effective competition)

arbitrary to establish a presumption of effective competition when the LP R/VC ratio is below the RSAM ratio of a revenue inadequate railroad

The $R/VC_{>180}$ ratio is the true measure of a railroad's constrained rate level on potentially captive traffic, because it reflects the average price the railroad is actually charging such traffic. In other words, the $R/VC_{>180}$ ratio reflects a railroad's observed average monopoly rate level An LP R/VC ratio above that level, between the $R/VC_{>180}$ ratio and the RSAM ratio, still would be a strong indicator of market dominance, because it would be above the average rate for all of the railroad's captive traffic This would be an eminently reasonable rebuttable presumption for market dominance because it reflects actual pricing over captive traffic.

In this proceeding, the choice between the RSAM and $R/VC_{>180}$ benchmarks is immaterial to the market dominance determination because, for NS, those benchmarks are nearly identical, at 275% and 274%, respectively. However, because the choice is relevant to the reasonableness of the LPM, DuPont has raised it so that the Board may establish a sound substantive foundation for the LPM.

d. The LPM establishes a presumption of market dominance for 77 of the 99 contested movements.

DuPont has performed the LPM analysis on all of the issue movements for which NS has contested market dominance. It should be noted that NS did not perform its own LPM analysis The results of DuPont's LPM analysis are presented in DuPont Rebuttal Workpaper "Limit Price Analysis.xlsx." DuPont has presented the results in five separate worksheets that contain the following information:

- The worksheet titled "Base Case" calculates the LPM for the lowest-priced alternative identified in NS Reply Ex. II-B-1, which may be either a direct truck or a transload alternative. This worksheet assumes that the alternative rates calculated by NS are accurate, which DuPont demonstrates is not true for many of the issue movements in its Part II B 2 evidence that discusses each individual commodity and lane In other words,

this worksheet presents the LPM results if the Board were to accept the NS Reply Evidence wholesale.

- The worksheet titled "NS IIB2" calculates the LPM for the lowest-priced direct truck alternative identified in NS Reply Ex. II-B-2. Again, this worksheet presents the LPM results if the Board were to accept the NS Reply Evidence wholesale.

- The worksheet titled "NS IIB3" calculates the LPM for the lowest-priced transload alternative identified in NS Reply Ex. II-B-3. Again, this worksheet presents the LPM results if the Board were to accept the NS Reply Evidence wholesale.

- The worksheet titled "DuPont IIB1" calculates the LPM for the lowest-priced direct truck alternative identified in DuPont Opening Ex. II-B-1. This worksheet presents the LPM results if the Board were to accept the DuPont evidence wholesale. To the extent the Board rejects an alternative rate calculated by NS for any contested lane, the Board should use the DuPont rate for the LPM analysis.

- The worksheet titled "DuPont IIB2" calculates the LPM for the lowest-priced transload alternative identified in DuPont Opening Ex. II-B-2. This worksheet presents the LPM results if the Board were to accept the DuPont evidence wholesale. To the extent the Board rejects an alternative rate calculated by NS for any contested lane, the Board should use the DuPont rate for the LPM analysis.

The "Base Case" work sheet, which assumes the accuracy of the lowest NS-calculated alternative rate for each lane,[600] shows that the Limit Price for 77 of the 99 contested movements is above the RSAM, which effectively establishes a rebuttable presumption of market dominance.[601]

As addressed in the preceding sections discussing the LPM, DuPont contends that it would be unlawful, arbitrary and capricious for the Board to presume the *existence* of effective competition for the remaining 22 contested movements. Nevertheless, DuPont has presented ample evidence for each lane either to demonstrate that the proposed alternative is not physically feasible (in which case there is no need to perform an LPM analysis), or to rebut the presumption

[600] Based upon the evidence that DuPont has presented in Part II.B.2 for each individual case lane, NS has not accurately calculated many of its proposed alternative rates.

[601] Because the RSAM and $R/VC_{>180}$ ratios are nearly identical, the results would be the same if the Board were to substitute the $R/VC_{>180}$ ratio as DuPont has advocated.

However, because the LPM is new and untested, and has generated intense opposition from the rail industry, including NS, DuPont requests that the Board not render its market dominance determination based solely upon the LPM results Otherwise, DuPont's case could be subjected to extensive delays if a reviewing court were to overturn the LPM, which would require a remand on market dominance and potentially a redo of the SAC analysis.

PUBLIC VERSION

BEFORE THE
SURFACE TRANSPORTATION BOARD

E I. DUPONT DE NEMOURS & COMPANY Complainant v NORFOLK SOUTHERN RAILWAY COMPANY Defendant	)	Docket No. NOR 42125

REBUTTAL EVIDENCE AND ARGUMENT OF

E.I. DU PONT DE NEMOURS AND COMPANY

Volume III:
Stand-Alone Cost Evidence and Witness Qualifications

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Filing Contains Color Images

CASE GLOSSARY

AEP Texas 2006	*AEP Texas Northern Company v. BNSF Railway*, STB Docket No. 41191 (Sub-No. 1) (STB served November 8, 2006)
AEP Texas	*AEP Texas Northern Company v. BNSF Railway*, STB Docket No. 41191 (Sub-No. 1) (STB served September 10, 2007)
AEPCO	*Arizona Electric Power Cooperative, Inc. v BNSF Railway Company and Union Pacific Railroad Company*, STB Docket No. 42113 (STB served November 22, 2011)
Aluminum	*Aluminum Association v. Akron, Canton & Youngstown Railroad*, 367 I.C.C. 475 (1983)
APS	*Arizona Public Service Company and Pacificorp V The Atchison, Topeka and Santa Fe Ry.*, 2 STB 367 (1997)
Arizona	*Arizona Public Service Co. v. United States*, 742 F.2d 644 (D.C Cir 1984)
Bottleneck I	*Central Power & Light Co v. Southern Pacific Transportation Co*, 1 S.T.B 1059 (1996)
Bottleneck II	*Central Power & Light Co v. Southern Pacific Transportation Co*. 2 S T B 235 (1997)
Coal Rate Guidelines or Guidelines	*Coal Rate Guidelines, Nationwide*, 1 I.C.C.2d 520 (1985), aff'd sub nom. *Consolidated Rail Corp. v. United States*, 812 F 2d 1444 (3rd Cir. 1987)
Coal Trading Corp	*Coal Trading Corp. v. The Baltimore & Ohio R.R., et al.*, 6 I C C.2d 361 (1990)
CP&L	*Carolina Power & Light Co v Norfolk Southern Railway*, 7 S.T B 235 (2003)
Dayton P&L	*Dayton Power & Light Co v Louisville & Nash. R.R.*, 1 I.C.C.2d 375, 382 (1985)
DMIR I	*Minn Power, Inc v. Duluth, Missabe & Iron Range Ry.*, 4 S.T.B. 64 (1999)

DMIR II	*Minn. Power, Inc v Duluth, Missabe & Iron Range Ry*, 4 S.T.B. 288 (1999)
Duke/CSXT	*Duke Energy Corp. v. CSX Transportation Inc*, 7 S.T.B. 402 (2004)
Duke/NS	*Duke Energy Corp v. Norfolk Southern Railway*, 7 S.T.B. 89 (2003)
FMC	*FMC Wyo. Corp. v. Union Pacific Railroad Company*, 4 STB 699 (2000)
General Procedures	*General Procedures for Presenting Evidence in Stand-Alone Cost Rate Cases*, STB Ex Parte No. 347 (Sub-No 3) (STB served March 12, 2001
IPA	*Intermountain Power Agency v. Union Pacific Railroad Company*, STB Docket No. 42127, UP Reply Evidence (Public), filed November 10, 2011
Major Issues	*Major Issues in Rail Rate Cases*, STB Ex Parte No 657 (Sub-No. 1) (STB served October 30, 2006)
M&G	*M&G Polymers USA, LLC v CSX Transportation, Inc.*, STB Docket No. 42123 (Filed November 13, 2012)
M&G Decision	*M&G Polymers USA, LLC v CSX Transportation, Inc.*, STB Docket No. 42123 (served Sept 27, 2012)
Market Dominance Determinations	*Mkt. Dominance Determinations & Consideration of Prod. Competition*, 365 I C C. 118 (1981)
McCarty Farms	*McCarty Farms v. Burlington N., Inc*, 3 I.C.C.2d 822 (1987)
Nevada Power	*Bituminous Coal – Hiawatha, Utah to Moapa, Nevada*, 6 I.C.C 2d 1 (1989)
Nevada Power II	*Bituminous Coal – Hiawatha, Utah to Moapa, Nevada*, 10 I.C.C.2d 259 (1994)
OG&E	*Oklahoma Gas & Electric Co. v Union Pacific Railroad Company*, STB Docket No. 42111 (STB served July 24, 2009)

Otter Tail	*Otter Tail Power Co., v BNSF Ry.*, STB Docket No 42071 (STB served January 27, 2006)
PSCo/Xcel	*Public Service Co of Colorado d/b/a Xcel Energy v. Burlington Northern and Santa Fe Railway*, 7 S.T B 589 (2004)
PSCo/Xcel II	*Public Service Co. of Colorado d/b/a Xcel Energy v. Burlington Northern and Santa Fe Railway*, STB Docket No. 42057 (STB served Jan. 19, 2005)
Rate Regulation Reforms or Ex Parte 715	*Rate Regulation Reforms*, STB Ex Parte No 715 (STB served July 25, 2012)
Seminole	*Seminole Electric Cooperative, Inc. v. CSX Transportation, Inc*, STB Docket No 42110 (Rebuttal Evidence Filed April 15, 2010)
TMPA	*Texas Municipal Power Agency v Burlington Northern and Santa Fe Railway*, 6 STB 573 (2003)
WFA/Basin	*Western Fuels Ass'n, Inc and Basin Electric Power Coop. v. BNSF Railway*, STB Docket No. 42088 (STB served September 10, 2007)
WFA/Basin II	*Western Fuels Ass'n, Inc and Basin Electric Power Coop. v. BNSF Railway*, STB Docket No. 42088 (STB served February 18, 2009)
Wisconsin P&L	*Wisconsin Power and Light Co., v Union Pacific Railroad*, 5 STB 955 (2001)
West Texas 638 Utilities	*West Texas Utilities Co v Burlington Northern Railroad*, 1 STB (1996), *aff'd sub nom. Burlington Northern Railroad v. STB*, 114 F.3d 206 (D.C. Cir. 1997)

ACRONYMS

The following acronyms are used.

AAR	Association of American Railroads
AASHTO	American Association of State Highway Officials
ACSES	Advanced Civil Speed Enforcement System
AEI	Automatic Equipment Identification
AEO	EIA's Annual Energy Outlook Forecast
AGR	Alabama and Gulf Coast Railway
All-LF	All-Inclusive Less Fuel Index, published by AAR
AREMA	American Railway Engineering and Maintenance-of-Way Association
ARRA	American Reinvestment and Recovery Act of 2009
ATC	Average Total Cost
ATF	Across-the-Fence
ATP	Automatic Train Protection
ATV	All-Terrain Vehicle
B&B	Bridge and Building
BCFD	Billion Cubic Feet per Day
BNSF	Burlington Northern Santa Fe Railway Company
BRC	Belt Railway Company of Chicago
C&S	Communications and Signals
CAGR	Compound Annual Growth Rate
CFS	2007 Commodity Flow Survey
CCRSI	CoStar Repeat Sales Indices
CERA	Central Railroad of Illinois
CMP	Constrained Market Pricing
cmp	Corrugated Aluminized Metal Pipe
CN	Canadian National Railway
CNW	Chicago & NorthWestern
COBRA	Consolidated Omnibus Budget Reconciliation Act
Conrail	Conrail Shared Asset Area
CP	Canadian Pacific Railway
CPI	Consumer Price Index
CSXT	CSX Transportation, Inc
CTC	Centralized Traffic Control
CWR	Continuous Welded Rail
CY	Cubic Yards
DCF	Discounted Cash Flow
DFE	Difluoroethane
DMA	Dimethylamine Anhydrous
DME	Dimethyl Ether
DMF	Dimethyl Formamide
DMS	Dimethyl Sulfate
DOT	Department of Transportation
DP	Distributed Power

DRR	DuPont Stand-Alone Railroad
DTL	Direct to Locomotive Fueling
EDI	Electronic Data Interchange
EEO	Equal Employment Opportunity
EIA	Energy Information Administration
EOTD	End of Train Device
ERTMS	European Rail Traffic Management System
FED	Failed-Equipment Detector
FHWA	Federal Highway Administration
FRA	Federal Railroad Administration
FSC	Fuel Surcharges
G&A	General and Administrative
GDLK	Grand Elk Railroad
GDP-IPD	Gross Domestic Product – Implicit Price Deflator
GWR	Gross Weight on Rail
HCl	Hydrochloric Acid (a/k/a Muriatic Acid)
HDF	On-Highway Diesel Fuel Index
HR	Human Resources
HTF	Highway Trust Fund
I&I	Inter and Intra-Train Switching
ICC	Interstate Commerce Commission
IDC	Interest During Construction
IDS/IPS	Intrusion Detection System/Intrusion Prevention System
IHB	Indiana Harbor Belt Railroad Company
ISS	Interline Settlement System
IT	Information Technology
KCS	Kansas City Southern Lines
LAN	Local Area Network
LPM	Limit Price Methodology
MACRS	Modified Accelerated Cost Recovery System
MCPPI	Moody's Commercial Property Price Index
MGT	Million Gross Tons
MIT	Massachusetts Institute of Technology
MGT	Million Gross Tons
MLO	Manager of Locomotive Operations
MMF	Monomethyl Formamide
MMA	Monomethylamine Anhydrous
MMM	Maximum Markup Methodology
MOW	Maintenance of Way
MTO	Manager of Train Operations
NBER	Nittany & Bald Eagle Railroad
NCREIF	National Council of Real Estate Investment Fiduciaries
NDGPS	Nationwide Differential GPS
NEC	Amtrak's Northeast Corridor
NPI	NCREIF Property Index
NS	Norfolk Southern Railway Company

NT/PC	Network Personal Computer
O/D	Origin/Destination
OATC	Original ATC
OS	Operating Station
OSHA	Occupational Safety and Health Administration
PDO	Bio-Propanediol
Pet Coke	Calcined Petroleum Coke
PPI	Producer Price Index
PRB	Powder River Basin, Wyoming
PTC	Positive Train Control
R/VC	Revenue to Variable Cost
RCAF-A	Rail Cost Adjustment Factor, adjusted for productivity
RCAF-U	Rail Cost Adjustment Factor, unadjusted for productivity
RMI	A GE Transportation Company
RMS	RMI's Revenue Management Services System
ROW	Right of Way
RSIA	Rail Safety Improvement Act of 2010
RTC	Rail Traffic Controller Model
SAC	Stand-Alone Cost
SARR	Stand-Alone Railroad
SEC	Securities Exchange Commission
SO3	Sulfur Trioxide
SPLC	Standard Point Location Code
STB	Surface Transportation Board
STCC	Standard Transportation Commodity Code
STEO	Short-Term Energy Outlook
T&E	Train and Engine
TCS	Triple Crown Services
TDIS	Thoroughbred Direct Intermodal Services
TiCl4	Titanium Tetrachloride
TiO2	Titanium Dioxide
TMA	Trimethylamine Anhydrous
TMS	RMI's Transportation Management Services System
TRN	NS Train Event Train Symbol
TRRA	Terminal Railroad Association of St. Louis
UP	Union Pacific Railroad
UPS	Uninterruptible Power Supply
URCS	Uniform Railroad Costing System
USDA	United States Department of Agriculture
WABTEC	Westinghouse Air Brake Technologies
WAN	Wide Area Network
WFL	Waste, Flammable Liquid
WNYP	Western New York & Pennsylvania Railroad
WTI	West Texas Intermediate

MASTER TABLE OF CONTENTS

I. COUNSEL'S ARGUMENT AND SUMMARY OF EVIDENCE I-1

A. OVERVIEW AND SUMMARY I-1

B. THE EVIDENCE SHOWS THAT NS POSSESSES MARKET DOMINANCE OVER EACH OF THE ISSUE MOVEMENTS I-7

1. Quantitative Market Dominance I-7

2. Qualitative Market Dominance I-8

a. NS has proposed an over-simplistic two-part test of market dominance that would produce absurd results I-13

1) The NS standard ignores three of the five specifically-enumerated market dominance factors I-14

2) The NS market dominance standard would produce absurd results I-15

b. NS fundamentally misrepresents and misinterprets both DuPont's Opening Evidence and the Board's market dominance precedent I-17

1) DuPont has taken a far more holistic approach in its market dominance evidence than NS I-18

2) DuPont has properly defined "effective competition" I-24

3) NS has misapplied the principle that a competing mode need not be capable of handling all of the issue traffic I-27

c Trucks compete for short distance hauls, low volumes, expedited shipments, and when there is no rail service I-31

1) NS emphasizes DuPont's truck shipment history without considering whether the circumstances of those shipments are comparable to the issue movements I-32

2) NS incorrectly asserts that DuPont's leverage over motor carriers is evidence of effective competition I-35

d. NS's own evidence confirms the limits of truck transportation I-38

e The magnitude of NS rate increases over just two years, from 2009 to 2011, exemplifies its market dominance I-42

f. Customer and supplier requirements for rail service preclude the use of alternatives to rail transportation I-45

g. The Board must apply its DMIR holding to this case I-48

1) The statute requires the Board to consider whether effective competition exists for the transportation to which the challenged rate applies I-48

a) NS selectively quotes from the statute and legislative history I-49

b) The Board must enforce the plain meaning of the statute I-52

c) Segregation of market dominance and rate reasonableness is not supported by the statute I-56

d) The Board cannot consider the contract service and rate because they are outside its jurisdiction. I-58

2) NS's claims about the "real-world" impact of competition are based on hyperbole and ignore "real-world" implementation problems I-59

a) The NS position is contrary to precedent.. ....I-59

b) NS's proposal would be impractical and cause confusion. I-63

3) Precedent supports DuPont's position. I-66

a) The precedent cited by NS does not support its position. I-66

b) The attempt to distinguish DMIR is unpersuasive. I-69

h. The Limit Price Methodology confirms the extent of NS's market dominance ..I-71

1) The Board's adoption of the LPM is procedurally sound..... ....I-73

2) The LPM supplements, but does not replace, a traditional market dominance analysis..... .... I-76

C. THE EVIDENCE SHOWS THAT THE CHALLENGED RATES ARE UNREASONABLY HIGH. I-79

1 The Proper Scope of Rebuttal Evidence I-80

2. Traffic and Revenues (Part III.A) I-82

a The DRR traffic group.. .... I-83

b Forecasted traffic volumes I-89

c Stand-alone revenue... .... I-89

1) Modified-ATC I-89

a) NS is incorrect as a matter of law that the Board must apply Original ATC to this case. I-90

b) Modified ATC is superior to both Original and Alternate ATC I-94

2) Forecasted Revenues.... ....I-95

3 SAC Railroad System (Part III B) I-96

4. Operating Plan (Part III.C) I-97

a DuPont has submitted a feasible operating plan.. ....I-99

1) DuPont's Operating Plan and Real-World Operations.... .... I-100

2) Alleged "Missing Trains" and Local Service I-102

3) Rerouted Traffic I-103

4) Yard Service. I-104

5) Reciprocal Obligations With Other Carriers I-105

6) TIH shipments. I-106

7) DuPont's RTC simulation I-106

8) Other operating matters..... ....I-106

b. NS use of Multirail is unsupported, and is otherwise infeasible and unrealistic, and therefore the Board should not accept NS's operating plan. I-107

1) The Board should reject NS's operating plan evidence, because NS has presented it without the MultiRail program I-107

2) Because NS has failed to support its operating plan, the Board should accept DuPont's operating plan, with the corrections DuPont has made on Rebuttal..... I-108

3) NS presentation of its operating plan evidence without MultiRail prevents the Board from restating it..... I-113

4) Any attempt to evaluate NS's MultiRail evidence without the MultiRail program will unnecessarily delay this proceeding and be prejudicial to DuPont I-114

c The NS RTC simulation is filled with errors..... I-117

5 Operating Expenses (Part III D) I-118

a. Locomotive lease costs I-119

b Locomotive maintenance expense I-120

c. Fuel consumption..... I-121

d Operating personnel I-121

e. General and administrative I-122

f. Maintenance of way. I-126

g. Insurance..... I-127

h. Ad valorem tax I-127

6 Non-Road Property Investment (Part III.E). I-128

7. Road Property Investment (Part III.F)..... I-128

a Land I-129

b. Roadbed Preparation I-131

c. PTC Installation I-132

d. Partially-Owned Lines I-133

8. DCF Analysis (Part III.G). I-134

a. Cost of capital I-134

b. Inflation indices for land..... I-137

9 Results of SAC Analysis (Part III.H).. ..... I-138

a. Interest schedule on debt..... I-138

b. Bonus depreciation..... I-139

c DRR capital structure. I-140

d. Index of operating expenses..... I-142

e. MMM calculations I-143

D. CONCLUSION.... ....I-146

II. MARKET DOMINANCE.....**II-A-1**

A. QUANTITATIVE MARKET DOMINANCE II-A-1

1. Traffic and Operating Characteristics II-A-1

a Loaded Miles II-A-1

b Tons per Car..... .. . .II-A-4

2. Variable Cost Calculations... . ...II-A-5

3 R/VC Ratios II-A-6

B. QUALITATIVE MARKET DOMINANCE II-B-1

1. Intramodal Competition II-B-3

2. Intermodal Competition II-B-6

a. Acid, Sulfuric II-B-7

1) Red Lion (Reybold) Origin Shipments. II-B-13

2) Bellwood Origin Shipments II-B-27

3) Bayway (Morses Mill) Origin Shipments II-B-31

4) Miami Fort Origin Shipments II-B-32

b. Acid, Spent Sulfuric..... .... II-B-34

c. Acid, Fuming Sulfuric (Oleum)..... . ...II-B-37

d. Acid, Muriatic.. ....II-B-42

e. Aniline Oil II-B-46

f Caustic, Potassium (Caustic Potash)... ....II-B-54

g Caustic, Sodium (Caustic Soda) II-B-57

h. Dimethyl Ether II-B-72

i. Dimethyl Formamide II-B-84

j Dimethyl Sulfate II-B-87

k Lime..... . . .. II-B-90

l. Methylamines, Anhydrous..... .. . .II-B-94

m Methylamines, Aqueous II-B-123

n. Petroleum Coke II-B-132

o. Polyethylene.... ... ...II-B-141

p Sodium Methylate..... . ... II-B-149

q. Sulfur Trioxide (SO3)..... .. .. II-B-153

r. Titanium Dioxide... ... . II-B-156

s Waste Flammable Liquid ... II-B-200
t. Zircon Sand ... II-B-202
3. The Limit Price Methodology is lawful and economically sound. ... II-B-206
a. Overview of the LPM. ... II-B-207
b. The LPM should only be used to presume the absence of effective competition. ... II-B-209
c. The Board should substitute R/VC>180 for RSAM. ... II-B-215
d. The LPM establishes a presumption of market dominance for 77 of the 99 contested movements. ... II-B-216

III. STAND-ALONE COST ... III-A-1
A STAND-ALONE TRAFFIC AND REVENUES ... III-A-1
1. Stand-Alone Traffic Group ... III-A-2
a Non-NS TCS Traffic Segments ... III-A-2
b Leapfrog Traffic ... III-A-3
i. Leapfrog Traffic Moves In The Real World, Including On NS ... III-A-5
ii. The DRR Network Is Based On Real-World Operations And Traffic Flows ... III-A-22
2. Forecasted Traffic Volumes ... III-A-27
a. Weighting Factors ... III-A-29
b Coal Forecast ... III-A-30
i. NS's Internal Forecast For Coal ... III-A-30
ii. Single Rate of Change For All Coal ... III-A-32
iii. Shifting Tonnage From Capped Plants ... III-A-33
iv. Treatment of Coke, Pet Coke and Iron Ore ... III-A-34
b. Other (Non-Coal) Commodity Forecasts ... III-A-34
c. Compound Annual Growth Rate ... III-A-34
d. Rebuttal Traffic ... III-A-35
3. Stand-Alone Revenues ... III-A-36
a. ATC SQL Coding ... III-A-37
i. NS's Technical Correction Is Inadequate ... III-A-39
ii. DuPont's Technical Correction Is Consistent and Fully Supported ... III-A-43
b Modified ATC vs. Original ATC ... III-A-43
i. NS Has Not Justified The Application Of Original ATC To This Case ... III-A-44

ii It Would Be Arbitrary And Capricious For The Board To Apply The Discredited Original ATC Methodology. III-A-44
iii Modified ATC Is Superior To Both Original And Alternate ATC.. .....III-A-44
(1) Modified ATC is Still Superior to Original ATC for the Reasons Articulated By The Board in WFA/Basin. III-A-45
(a) Original ATC's Critical Flaws III-A-47
(b) Alternate ATC's Shortcomings III-A-49
(2) Alternate ATC Artificially Caps R/VC Ratios on High-Density Rail Segments III-A-52
c TCS/TDIS Revenue Adjustments..... . .. . .III-A-56
d. Handling Line Payments III-A-61
e. Non-NS TCS Traffic..... ....III-A-64
f. Switching Payments..... ... ...III-A-65
g. Rebuttal Restatement.... . ...III-A-66
4. Forecasted Revenues..... . ...III-A-67
a Coal Revenue Calculations. III-A-68
b. Development of 2011 TCS Revenue III-A-70
c. Fuel Indices III-A-71
i Fuel "Cost" Index III-A-72
ii. Fuel "Price" Index III-A-72
d. Rebuttal Revenue III-A-73
B. STAND-ALONE RAILROAD SYSTEM..... .... III-B-1
1. Routes and Mileage. III-B-1
a. Main Lines III-B-2
i. Partially Owned Lines III-B-2
ii Chicago, IL Extension III-B-3
iii. Additional Lead Track.... . ... .III-B-3
b. Branch Lines III-B-3
c. Rebuttal Route Miles..... ....III-B-3
2 Track Miles And Weight Of Track III-B-4
a Main Line Track.... . . .. .III-B-5
i. Single Main III-B-5
ii. Other Main..... . ...III-B-5
b Branch Line Track III-B-6
c. Other. III-B-6

i Helper Pocket and Setout Track III-B-6
i. Customer Access Sidings..... III-B-6
d. Yard And Interchange Track III-B-8
e Rebuttal DRR Track Miles..... III-B-8
3. Yard And Interchange Track..... III-B-9
a Yards..... III-B-13
i. Intermodal Facilities III-B-16
ii. Automotive Facilities..... III-B-16
iii Transload Facilities..... III-B-17
b. Interchange Track III-B-17
c Rebuttal DRR Yards..... III-B-18
4. Joint Facilities III-B-18
5. Signals And Communications System III-B-19
6. Turnouts, FEDs And AEI Scanners III-B-19
C. STAND-ALONE RAILROAD OPERATING PLAN..... III-C-1
1. DuPont's Operating Plan is Feasible..... III-C-3
a DuPont's Operating Plan Is Based On NS's Own Operations III-C-4
i. DuPont Used NS's Own Operations As The Template For its Operating Plan III-C-4
(1) The DRR Provides Local Train Service..... III-C-7
(2) DuPont Did Not Develop a Trainload Operating Plan..... III-C-8
(3) The DRR Uses The Same Car Classification and Blocking Plans As NS's Real World Operations..... III-C-10
(4) DuPont Provided The Facilities To Operate Road and Local Trains..... III-C-10
(5) DuPont Provided Sufficient Time For Local Trains To Pick-Up and Set-Out Cars..... III-C-11
(6) DuPont Provided The Special Services To Meet The Needs of DRR Shippers..... III-C-12
ii. DuPont's Operating Plan Was Prepared By Experts With Many Years Of Railroad Operating Experience..... III-C-12
b. Any Limitations On DuPont's Operating Plan Are A Result Of NS's Failure To Provide Accurate Data III-C-14
i. NS Cannot Run Away From Its Own Flawed Data..... III-C-14
ii. NS Acknowledges The Flaws In Its Own Data III-C-15
(1) Train and Car Event Data Cannot Be Accurately Combined..... III-C-16

(2) NS Had To Resort To Opinions To Develop Dwell Times Because They Could Not Be Identified From NS Data III-C-20
iii. DuPont included All Trains NS's Data Indicated Moved Over The DRR .. III-C-22
(1) Train Event Data Shows More Trains On SARR Than Car Event Data .. III-C-23
(2) NS Included Trains That Are Not In The Car Event Data III-C-26
c. DuPont's Operating Plan Accounts For Reciprocal Operations III-C-27
i Pre-Blocking Cars Forwarded to Connecting Carriers III-C-28
ii Handled Run Through Power III-C-29
iii. Distributive Power III-C-30
iv Fueling and Inspecting Locomotives III-C-31
v Running Repairs To Foreign Railcars. III-C-32
d DuPont's Operating Plan Properly Handles TIH Shipments III-C-33
i. The DRR Can Track TIH Shipments III-C-34
ii. DRR Trains Carrying TIH Shipments Are Limited To 50 MPH III-C-34
iii. The DRR Has The Appropriate Personnel To Handle TIH Shipments III-C-34
e DuPont Has Reasonably And Properly Included Cross-Over Traffic In "Leapfrog" Service III-C-35
f DuPont Has Accounted For Traffic On Line Segments Impacted by Rerouted Trains III-C-50
2. DuPont's RTC Simulation Proves The Feasibility Of The DRR Operating Plan III-C-53
a. DuPont's Modeling Of NS's Own Operations Proves Its Feasibility III-C-53
b. DuPont Used Correct Grade Information III-C-54
i DuPont Relied On The Grade Information Included In NS's RTC Models Provided In Discovery. III-C-55
ii. Rebuttal RTC Grades III-C-56
c Track Outages III-C-56
i NS Train Movement Data Shows Train Moving Over Line Segments NS Claims Were Shutdown Due To Outages III-C-56
ii Rebuttal RTC Outages III-C-57
d. Amtrak Northeast Corridor III-C-58
e Foreign Railroad Crossings III-C-58
f DuPont's Modeling of The Chicago Area III-C-59
g. Light Engine and Hi-Rail Movements III-C-60
h DuPont Incorporated In-Route Consist Stops and Changes III-C-61

i. The DRR Provides The Same Or Better Service Quality Than NS.... ..... III-C-62

3. NS's MultiRail-Based Operating Plan is Unnecessary and Erroneous, and It Complicates the SAC Analysis while Providing no Advantage Over DuPont's Tried and Tested Model III-C-65

a. Substituting Modeled SARR Routing And Operations For Actual Routing And Operations Is Unnecessary III-C-67

b Substituting Modeled SARR Routing and Operations for Actual Routing and Operations Distorts the SAC Analysis III-C-71

c NS Uses A Model That Is Superior To MultiRail In Developing its Real-World Operating Plan III-C-84

d. NS's MultiRail-Based Modeling Exercise Fails To Consider Downstream Impacts On Both DRR Traffic And Other Non-Selected NS Traffic III-C-85

e. NS's MultiRail-Based Modeling Exercise Fails To Account For All Selected DRR Traffic... ....III-C-88

f. NS's MultiRail-Based Modeling Exercise Relies on Simple Mathematical Algorithms Rather than Real-World Operations III-C-92

g. NS's MultiRail-Based Modeling Exercise Is Riddled With Faulty And Unalterable Inputs And Assumptions That Render Its Outputs And All Downstream SAC Analyses Invalid... .... III-C-96

4 NS's RTC Model Of The DRR Is Filled With Errors..... ... .III-C-108

a. NS Incorrectly Modeled Foreign Railroad Trains III-C-108

b NS Improperly Modeled Random Outages III-C-111

c. NS Improperly Input RTC Trains..... .. ..III-C-112

d. NS RTC Network Does Not Reflect Its Investment III-C-117

5. DuPont Response to NS's Criticisms of DuPont's Operating Plan III-C-120

a Yard and Facilities III-C-120

i Yards..... ... .III-C-120

(1) Yard Switching and Classification Tracks III-C-121

(a) NS Yard Classification Car Counts are Unsupported..... . ...III-C-122

(b) NS Yard Classification Car Counts are Unrealistic III-C-123

(c) NS Hump Yard Classification Track Miles are Significantly Overstated III-C-125

(2) Determination of DRR Yard Classification Tracks in Rebuttal. III-C-126

ii. Intermodal Facilities III-C-128

iii. Automotive Facilites III-C-128

iv Transload Facilities III-C-129

b. Yard Activity III-C-129

i Locomotive Inspections and Fueling III-C-129
ii. Railcar inspections III-C-130
c. Train Sizes and Equipment III-C-130
i. Train Size III-C-130
ii. Locomotives III-C-131
(1) Road Locomotives III-C-132
(a) Locomotive Dwell in Yards III-C-133
(b) Peaking Factor III-C-136
(c) Spare Margin III-C-138
(2) Local Trains III-C-138
(3) Helper Locomotives III-C-138
(4) Switch Locomotives III-C-139
d Crew Districts and Requirements III-C-140
i. Road Crews III-C-140
ii. Yard Crews III-C-140
iii Helper Crews III-C-140
D. OPERATING EXPENSES III-D-1
1 Locomotives III-D-3
a. Acquisition III-D-3
i. Locomotive Types III-D-3
ii. Locomotive Lease Costs III-D-5
iii. Number of Locomotives III-D-9
b. Locomotive Maintenance Expense III-D-10
c. Locomotive Servicing (Fuel, Sand and Lubrication) III-D-11
i Fuel Cost III-D-11
ii. Fuel Consumption III-D-12
iii. Sand and Lubrication III-D-13
2. Railcars III-D-14
a Leasing III-D-14
i. RTC Transit Times III-D-15
ii Dwell Time in Yards III-D-15
iii. Intermodal Car Costs III-D-16
b Railcar Maintenance III-D-18
c. Private Car Allowances III-D-19

3. Operating Personnel III-D-19
a. Number of T&E Personnel III-D-19
i. In Rebuttal DuPont Includes All Required Trains on the DRR System III-D-20
ii Directional Imbalances On the DRR III-D-20
iii. DRR Re-Crew Rate. III-D-23
iv. DuPont Includes All Necessary Helper Service III-D-24
v. Yard Crews III-D-24
b. T&E Personnel Compensation III-D-26
i T&E Wages III-D-26
ii Fringe Benefits III-D-27
iii. Hotel and Taxi Expense III-D-29
c Non-Train Operating Personnel III-D-30
i Transportation Department III-D-31
(1) Operations Planning and Joint Facilities III-D-31
(2) Operations Control III-D-32
(3) Dispatch III-D-33
(4) Crew Management and Crew Calling III-D-34
(5) Terminal Operations III-D-35
(6) Locomotive Operations III-D-36
(7) Intermodal and Automotive Terminals III-D-37
ii Mechanical Department III-D-38
(1) EOTD Manager III-D-38
(2) Managers – Maintenance Planning III-D-39
(3) Car Inspection. III-D-39
iii. Operations Support Department III-D-42
(1) Operations Service and Support (OSS) III-D-42
(2) Service Design and Measurement III-D-43
(3) Equipment Planning and Distribution III-D-44
(4) Damage Prevention and Freight Claims. III-D-44
d. Non-Train Operating Personnel Compensation III-D-45
i. Vice Presidents III-D-45
ii. Fringe Benefits III-D-45
e. Materials, Supplies and Equipment III-D-46
4 General and Administrative III-D-46

a. Staffing Requirements III-D-47
i. Executive Department III-D-48
ii. Board of Directors..... ....III-D-49
iii. Marketing & Customer Service Department III-D-49
iv. Finance & Accounting Department III-D-49
v. Law and Administration Department III-D-50
vi. Information Technology III-D-50
b. Compensation III-D-51
c Material, Supplies, and Equipment..... ....III-D-51
d Other III-D-51
i. IT Systems III-D-51
e. Other Out-Sourced Functions III-D-52
f Start-up and Training Costs III-D-53
g. Bad Debt III-D-53
5. Maintenance-of-Way..... ....III-D-53
6. Leased Facilities..... ....III-D-56
a. Misapplied Fees III-D-57
i. Car Counts III-D-57
ii. Terminal Railroad of St. Louis III-D-58
iii. Conrail Shared Asset Areas III-D-59
iv Belt Railway Company of Chicago III-D-60
b. Improperly Routed Traffic... ....III-D-61
c. Construction of Chicago Area Track III-D-62
d. AMTRAK Segments..... ....III-D-62
e Mathematical Error..... ....III-D-63
7. Loss and Damage III-D-63
8. Insurance III-D-63
9. Ad Valorem Tax..... . ...III-D-65
10. Other III-D-68
a. Intermodal Lift and Ramp Cost III-D-68
i Clerical Staff and Utilities III-D-69
ii Elizabeth, New Jersey... .... III-D-69
iii. Chicago Cross-town Drays III-D-70
iv. Additional Personnel..... ....III-D-70

b Automotive Handling Cost III-D-70
c. Costs Incurred by Residual NS for New DRR-NS Interchanges..... III-D-71
d Calculation of Annual Operating Expense III-D-72
E. NON-ROAD PROPERTY INVESTMENT III-E-1
F. ROAD PROPERTY INVESTMENT III-F-1
1. Land III-F-4
a. Review of Norfolk Southern's Land Valuation III-F-5
b. Rebuttal Of NS Review Of DuPont Appraisal Summary III-F-11
c. Rebuttal of NS Appraiser's Review: Summary III-F-13
d. Easements III-F-14
2. Roadbed Preparation III-F-15
a. Clearing and Grubbing III-F-29
i. Quantities of Clearing And Grubbing III-F-29
ii. Clearing and Grubbing Unit Costs..... III-F-29
b. Earthwork..... III-F-31
i. Earthwork Quantities III-F-31
(1) DRR Line Segments III-F-31
(2) DRR Yards III-F-33
(3) Total Earthwork Quantities III-F-34
ii. Earthwork Unit Costs III-F-35
(1) Common Excavation III-F-35
(2) Common Excavation – Adverse. III-F-36
(3) Loose Rock Excavation..... III-F-39
(4) Loose Rock Excavation – Adverse III-F-40
(5) Solid Rock Excavation III-F-40
(6) Solid Rock Excavation – Adverse. III-F-42
(7) Embankment/Borrow III-F-42
(8) Other Earthwork Quantities and Unit Costs..... III-F-43
(a) Stripping..... III-F-43
(b) Undercutting III-F-44
(c) Over-Excavation III-F-47
(d) Fine Grading III-F-48
(e) Swell III-F-49
(9) Subgrade Preparation III-F-51

(10) Land for Waste Excavation III-F-55
c. Drainage III-F-57
i. Lateral Drainage III-F-57
ii Yard Drainage III-F-57
d. Culverts III-F-58
i. Culvert Unit Costs III-F-58
ii Culvert Installation Plans III-F-59
iii. Culvert Quantities III-F-60
e Other III-F-61
i. Sideslopes III-F-61
ii. Ditches III-F-61
iii. Retaining Walls. III-F-61
(1) Increased Roadbed Width III-F-62
(2) Masonry Walls III-F-64
(3) Timber and Tie Walls. III-F-66
(4) Piles III-F-66
(5) Foundation Excavation III-F-67
(6) Unit Costs III-F-67
iv. Rip Rap. III-F-68
v. Relocating and Protecting Utilities III-F-68
vi. Seeding/Topsoil Placement III-F-68
vii. Water for Compaction III-F-68
viii. Surfacing for Detour Roads III-F-68
ix. Environmental Compliance III-F-68
x Lighting for Night Work. III-F-69
xi. Dust Control Work. III-F-70
3. Track Construction III-F-70
a. Geotextiles III-F-72
b. Ballast and Sub-ballast III-F-73
i. Ballast and Sub-ballast Quantities III-F-73
ii. Ballast and Sub-ballast Unit Costs III-F-76
c. Ties III-F-80
d. Track (Rail) III-F-81
i Specifications III-F-81

ii. Rail Pricing III-F-81
iii. Field Welds III-F-82
iv. Insulated Joints III-F-83
v. Switches III-F-83
c. Other III-F-84
i. Rail Lubricators III-F-84
ii. Plates, Spikes and Anchors III-F-84
iii. Derails and Wheel Stops III-F-84
iv Crossing Diamonds III-F-85
v Materials Transportation III-F-85
vi. Track Labor and Equipment III-F-85
4. Tunnels III-F-86
5. Bridges III-F-86
a Bridge Inventory III-F-87
b. Bridge Design and Cost Overview III-F-90
i. Cost Overview III-F-91
ii. Bridge Design III-F-92
(1) Superstructure Design (Spans) III-F-92
(2) Substructure Design (Piers and Abutments) III-F-93
iii. Type I Bridges III-F-94
iv. Type II Bridges III-F-95
v. Type III Bridges III-F-95
vi. Type IV Bridges III-F-97
vii. Bridges with Multiple Span Types III-F-97
viii. Special Bridges III-F-98
(1) Movable Bridges III-F-98
(2) Exceptionally Tall Bridges III-F-106
(3) Non-Movable Bridges over Navigable Waters III-F-107
c. Highway Overpasses III-F-107
d. Summary III-F-108
6 Signals and Communications III-F-108
a. Centralized Traffic Control III-F-108
i. PTC Installation in 2009 ..... III-F-108
ii Inventory of Signal Components III-F-113

iii. Unit Costs for Signal Components III-F-115
b Positive Train Control III-F-116
i. PTC Wayside System III-F-116
ii PTC IT Costs. III-F-117
iii PTC Locomotive Costs III-F-118
iv. PTC Development Costs III-F-118
v. PTC Expenditure Schedule III-F-118
c. Detectors III-F-118
d. Crossing Signal Equipment III-F-119
e Communications III-F-120
f. Hump Yard Equipment III-F-120
g. Summary III-F-121
7. Buildings and Facilities III-F-121
a. Headquarters Building III-F-121
b. Fueling and Locomotive Servicing Facilities III-F-122
i. Fixed Fueling Facilities III-F-122
ii. Fueling by Truck and Locomotive Servicing Facilities III-F-124
c Locomotive Repair Facilities III-F-124
d Car Repair Facilities III-F-125
e. Crew Change Facilities III-F-127
f Yard Offices III-F-128
g. Maintenance of Way Buildings (Roadway Buildings) III-F-129
h. Wastewater Treatment III-F-131
i Other Facilities / Site Costs III-F-131
j. Guard Booths III-F-134
k Mechanic Repair Shops III-F-135
l Mechanical Offices III-F-136
m Observation/Yard Master Towers III-F-136
n. Storage and Warehouse Buildings III-F-137
o Miscellaneous Buildings III-F-138
p Foundation Designs III-F-138
q Signal Maintainer Buildings III-F-138
r. Intermodal Terminals III-F-139
s Bulk Transfer Facilities III-F-139

t Automotive Facilities..... III-F-140
8. Public Improvements III-F-140
a. Fences III-F-141
b Signs and Road Crossing Devices III-F-141
c. Grade-Separations III-F-141
d At-Grade Crossings..... III-F-142
e. At-Grade Crossing Detours..... III-F-142
f. At-Grade Crossing Vegetation Removal III-F-142
9 Mobilization III-F-143
10. Engineering III-F-145
11. Contingencies III-F-145
12 Construction Schedule..... III-F-146
13. Joint Facilities / Shared Assets..... III-F-147
a. DRR Is Not Required To Construct The Facilities Of Non-Defendant Third Parties III-F-148
i NS Rail Does Not Own Conrail Or IHB III-F-149
ii. The DRR Is Not Required To Acquire The NS Rail Ownership Interest In The BRC And TRRA III-F-153
b. NS Has Not Properly Calculated The DRR's Ownership Costs For NS-Owned Joint Facilities..... III-F-155
c. NS Improperly Substitutes Replacement Costs For Ownership Costs..... III-F-155
d NS Includes Ownership Costs But Ignores Offsetting Revenues..... III-F-159
e. Conclusions III-F-165
G DISCOUNTED CASH FLOW ANALYSIS III-G-1
1. Cost of Capital. III-G-1
a. Updated Cost of Capital III-G-2
b. Weighting of 2006 Cost of Equity..... III-G-3
c. Equity Flotation Costs III-G-4
2 Inflation Indices. III-G-7
3. Tax Liability..... III-G-10
4. Capital Cost Recovery III-G-10
H. RESULTS OF SAC ANALYSIS III-H-1
1. Results of SAC DCF Analysis III-H-1
a Cost of Capital III-H-1
b Road Property Investment Values III-H-1

c Interest During Construction.... ....III-H-2
d Interest Schedule of Assets Purchased With Debt Capital III-H-2
e Present Value Of Replacement Cost..... .. .. .III-H-4
f. Tax Depreciation Schedules III-H-5
i Bonus Depreciation III-H-5
ii. Asset Tax Lives... ... .III-H-9
g. Average Inflation In Asset Prices III-H-9
h. Discounted Cash Flow III-H-9
i. DRR Capital Structure. III-H-10
ii. PTC Investment III-H-13
i. Computation of Tax Liability – Taxable Income III-H-15
j. Operating Expenses III-H-15
k. Summary of SAC..... . ...III-H-16
2 Maximum Rate Calculations..... . ... III-H-17
a. The NS Modifications to the MMM Analysis are Unnecessary and Improper III-H-18
i. NS May Not Lawfully Modify the MMM Analysis in an Adjudicatory Proceeding Because the Board Adopted MMM in a Formal Rulemaking III-H-18
ii The NS Modifications to the MMM Analysis are Unlawful III-H-18
iii. NS Improperly Treats PTC Costs as Unique to TIH Traffic III-H-22
b DuPont Correctly Indexed Variable Costs In the MMM Model III-H-24
3. Maximum Reasonable Rates III-H-26

EXHIBITS

REBUTTAL EXHIBIT II-A

1. Variable Cost, Jurisdictional Threshold, Tariff Rate and Revenue/Variable Cost Ratios Per Car for DuPont Movements – 2Q09

2 Variable Cost, Jurisdictional Threshold, Tariff Rate and Revenue/Variable Cost Ratios Per Car for DuPont Movements – 3Q09

3. Variable Cost, Jurisdictional Threshold, Tariff Rate and Revenue/Variable Cost Ratios Per Car for DuPont Movements – 4Q09

4 Variable Cost, Jurisdictional Threshold, Tariff Rate and Revenue/Variable Cost Ratios Per Car for DuPont Movements – 1Q10

5. Variable Cost, Jurisdictional Threshold, Tariff Rate and Revenue/Variable Cost Ratios Per Car for DuPont Movements 2Q10

6 Variable Cost, Jurisdictional Threshold, Tariff Rate and Revenue/Variable Cost Ratios Per Car for DuPont Movements – 3Q10

7. Variable Cost, Jurisdictional Threshold, Tariff Rate and Revenue/Variable Cost Ratios Per Car for DuPont Movements – 4Q10

8 Variable Cost, Jurisdictional Threshold, Tariff Rate and Revenue/Variable Cost Ratios Per Car for DuPont Movements – 1Q11

9. Variable Cost, Jurisdictional Threshold, Tariff Rate and Revenue/Variable Cost Ratios Per Car for DuPont Movements – 2Q11

10. Variable Cost, Jurisdictional Threshold, Tariff Rate and Revenue/Variable Cost Ratios Per Car for DuPont Movements – 3Q11

11. Variable Cost, Jurisdictional Threshold, Tariff Rate and Revenue/Variable Cost Ratios Per Car for DuPont Movements – 4Q11

12 Variable Cost, Jurisdictional Threshold, Tariff Rate and Revenue/Variable Cost Ratios Per Car for DuPont Movements – 1Q12

13. DuPont Rebuttal Miles Calculations

14. Summary of DuPont's Rebuttal Tons Per Car Calculations

15. Summary of Traffic and Operating Characteristics for DuPont Movements

16 Summary of Tariff Rates for DuPont Movements 2Q09 - 1Q12

17 Summary of Outlier Miles Excluded

REBUTTAL EXHIBIT II-B

1. Comparison of Changes in NS Costs and RCAF – 1997 TO 2009

   Attachment No. 1 - Summary of Changes in NS Variable Costs and Contract Adjustment Mechanism –1997 to 2009

2. REDACTED (HIGHLY CONFIDENTIAL)

REBUTTAL EXHIBIT III-A

1. Cross-Over Traffic
2. Demonstration of DuPont and NS TCS/TDIS Intermodal Traffic Revenue Calculation Methodologies and Development of Adjustment Indices Required to Correct DuPont Opening Overstatement and NS Reply Understatement
3. Comparison of DuPont and NS Revenue Calculation for TCS Moves

REBUTTAL EXHIBIT III-C

1 Data Sufficiency Rebuttal

   Attachment No. 1 - REDACTED (HIGHLY CONFIDENTIAL)

   Attachment No. 2 - REDACTED (HIGHLY CONFIDENTIAL)

   Attachment No. 3 – REDACTED (HIGHLY CONFIDENTIAL)

2 A Visual Representation of 65% of the Grade Errors Claimed by NS (0.5% or less)

REBUTTAL EXHIBIT III-D

1. General and Administrative Expense
2. Maintenance Of Way

   Appendix A -- Rebuttal to NS Reply Comments

   Appendix B – MOW Rebuttal – Additional Supporting Information

REBUTTAL EXHIBIT III-F

1 DRR Road Property Investment

2 Rebuttal Report and Appraisal Review of Retrospective Appraisal of Land for E I DuPont de Nemours and Company (DuPont) Stand Alone Railroad (SARR) in 20 Eastern States

REBUTTAL EXHIBIT III-G

1 Land Inflation Values

REBUTTAL EXHIBIT III-H

1. Summary of SAC Results

2 Maximum Markup Methodology R/VC Ratios

3. Comparison of NS Tariff Rates and STB Maximum Rates Per Car for DuPont Movements - - 2Q09

4. Comparison of NS Tariff Rates and STB Maximum Rates Per Car for DuPont Movements - - 3Q09

5. Comparison of NS Tariff Rates and STB Maximum Rates Per Car for DuPont Movements - - 4Q09

6 Comparison of NS Tariff Rates and STB Maximum Rates Per Car for DuPont Movements - - 1Q10

7. Comparison of NS Tariff Rates and STB Maximum Rates Per Car for DuPont Movements - - 2Q10

8. Comparison of NS Tariff Rates and STB Maximum Rates Per Car for DuPont Movements - - 3Q10

9. Comparison of NS Tariff Rates and STB Maximum Rates Per Car for DuPont Movements - - 4Q10

10. Comparison of NS Tariff Rates and STB Maximum Rates Per Car for DuPont Movements - - 1Q11

11. Comparison of NS Tariff Rates and STB Maximum Rates Per Car for DuPont Movements - - 2Q11

12. Comparison of NS Tariff Rates and STB Maximum Rates Per Car for DuPont Movements - - 3Q11

13. Comparison of NS Tariff Rates and STB Maximum Rates Per Car for DuPont Movements - - 4Q11

14. Comparison of NS Tariff Rates and STB Maximum Rates Per Car for DuPont Movements - - 1Q12

PART III-A

PUBLIC VERSION

Table of Contents

III. STAND-ALONE COST III-A-1

A. STAND-ALONE TRAFFIC AND REVENUES III-A-1

1. Stand-Alone Traffic Group III-A-2

a Non-NS TCS Traffic Segments III-A-2

b. Leapfrog Traffic III-A-3

i. Leapfrog Traffic Moves In The Real World, Including On NS III-A-5

ii The DRR Network Is Based On Real-World Operations And Traffic Flows III-A-22

2 Forecasted Traffic Volumes III-A-27

a. Weighting Factors III-A-29

b. Coal Forecast III-A-30

i. *NS's Internal Forecast For Coal* III-A-30

ii Single Rate of Change For All Coal III-A-32

iii. Shifting Tonnage From Capped Plants III-A-33

iv. Treatment of Coke, Pet Coke and Iron Ore III-A-34

b. Other (Non-Coal) Commodity Forecasts III-A-34

c. Compound Annual Growth Rate III-A-34

d Rebuttal Traffic III-A-35

3. Stand-Alone Revenues III-A-36

a ATC SQL Coding III-A-37

i. NS's Technical Correction Is Inadequate III-A-39

ii DuPont's Technical Correction Is Consistent and Fully Supported III-A-43

b *Modified ATC vs Original ATC* III-A-43

i NS Has Not Justified The Application Of Original ATC To This Case III-A-44

ii It Would Be Arbitrary And Capricious For The Board To Apply The Discredited *Original* ATC Methodology III-A-44

iii Modified ATC Is Superior To Both Original And Alternate ATC III-A-44

(1) Modified ATC is Still Superior to Original ATC for the Reasons Articulated *By The Board in WFA/Basin* III-A-45

(a) Original ATC's Critical Flaws III-A-47

(b) Alternate ATC's Shortcomings III-A-49

2) Alternate ATC Artificially Caps R/VC Ratios on High-Density Rail Segments III-A-52

c TCS/TDIS Revenue Adjustments III-A-56

d. Handling Line Payments III-A-61
e. Non-NS TCS Traffic III-A-64
f. Switching Payments III-A-65
g. Rebuttal Restatement III-A-66
4. Forecasted Revenues III-A-67
a Coal Revenue Calculations III-A-68
b Development of 2011 TCS Revenue III-A-70
c. Fuel Indices III-A-71
i Fuel "Cost" Index III-A-72
ii. Fuel "Price" Index III-A-72
d Rebuttal Revenue III-A-73

PUBLIC VERSION

III. STAND-ALONE COST

A. STAND-ALONE TRAFFIC AND REVENUES

The DRR traffic group includes a broad range of commodities moving in intermodal, unit, manifest (mixed general freight) and local trains. The subject traffic includes local, interline, and cross-over movements. In its Opening Evidence, DuPont described the procedures it followed to identify and model the handling of this traffic under the hypothetical, optimally efficient presumptions inherent in the *Coal Rate Guidelines* given the nature, complexity and limitations of the NS data produced in discovery.[1] On Reply, NS presents a vitriolic attack on nearly every aspect of DuPont's Opening Evidence.

This Rebuttal Evidence summarizes the dollar value impact of the differences between the parties' approaches, briefly discusses the approach each party used, and identifies the best evidence of record which is presented in this Rebuttal evidence. This narrative also identifies where NS's Reply Evidence is based upon critical information not included in discovery, includes misstatements, assumes absurd and impermissible limits on traffic and revenue and misapplies the accepted revenue allocation methodology.

Part III-A of this Rebuttal Evidence addresses the differences between traffic and revenues included in DuPont's Opening Evidence and in NS's Reply Evidence on both a base year level[2] and as forecasted over the ten (10) year discounted cash flow ("DCF") model life. The remainder of this Part III-A addresses these differences under the following topical headings:

1. Stand-Alone Traffic Group
2. Forecasted Traffic Volumes
3. Stand-Alone Revenues

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[1] *See* DuPont Opening Exhibits III-A-2, III-A-3

[2] The DRR began operations on 6/1/09. The first full year of operations was 2010. For purposes of the comparisons of DuPont's Opening Evidence to NS's Reply Evidence, calendar year 2010 data was used

4 Forecasted Revenues

1. Stand-Alone Traffic Group

NS states that it "generally accepts DuPont's selected traffic group for purposes of determining SARR traffic volumes and revenues "[3] A comparison of DuPont's and NS's 2010 DRR traffic volumes confirms NS's position as shown in Table III-A-1 below

Table III-A-1
Comparison of DuPont Opening and NS Reply
DRR 2010 Traffic Volumes By Commodity
(Tons)

Commodity	DuPont Opening 1/	NS Reply 2/	Difference Col (2) – Col (3)
(1)	(2)	(3)	(4)
1 Agricultural Products (10)	{{ }}	{{ }}	{{ }}
2. Metals (20)	{{ }}	{{ }}	{{ }}
3 Construction Materials (25)	{{ }}	{{ }}	{{ }}
4. Paper (30)	{{ }}	{{ }}	{{ }}
5 Chemicals (40)	{{ }}	{{ }}	{{ }}
6. Automotive (60)	{{ }}	{{ }}	{{ }}
7. Coal (80)	{{ }}	{{ }}	{{ }}
8. Intermodal (IM)	{{ }}	{{ }}	{{ }}
9. Total	{{ }}	{{ }}	{{ }}

1/ DuPont Opening, p. III-A-4
2/ NS Reply e-workpaper "Traffic and Revenue Summary Reply.xlsx "

NS identifies two areas with which it has issues 1) Triple Crown Services ("TCS") traffic originating on non-NS roads, and 2) a category of cross-over traffic that NS has termed "leapfrog" traffic While NS criticizes DuPont's inclusion of so-called leapfrog traffic, NS also includes this traffic in its DRR traffic group on Reply.

a. *Non-NS TCS Traffic Segments*

NS indicates on Reply that some TCS waybills included in the traffic data provided in discovery show zero NS line haul revenues and zero net tons. NS then "explains" that these are

[3] *See* NS Reply, p III-A-1

"duplicate" waybills that represent "the non-NS portion (*i e*, the portion handled by another rail carrier) of an interline move."[4] NS's explanation is not technically accurate. The waybills are not duplicate waybills because they have a different waybill number from the related waybill movement. They are separate and unique additional waybills that have a corresponding waybill over the NS portion of the movement that contains a different and unique waybill number, a different origin, and the same destination information. Furthermore, all waybill records subject to exclusion from the NS's Reply traffic group identify an off-system (non-NS) origin and an on-system (NS) destination, so the removed waybill records do not simply represent the non-NS portion of the move. However, upon inspection of the NS Reply evidence and the corresponding waybills included in the traffic group, DuPont has accepted NS's exclusion of these waybill records on Rebuttal. In nearly all cases, this adjustment does not change the DRR traffic volume because the corresponding records (for the NS portion of the movement) are still included in the traffic group. However, this adjustment does reduce DRR's 2010 traffic volume by {{[redacted]}} tons.

b. Leapfrog Traffic

NS generally accepts DuPont's inclusion of cross-over traffic in the DRR traffic group, and with good reason.[5] However, NS argues with vigor that so-called "leapfrog" cross-over traffic should be excluded from the SARR analysis on the grounds that it "is an obvious gambit to avoid substantial construction costs.. or to avoid rerouting traffic in ways that would be

---

[4] *Id*

[5] Despite previously asking the Board to hold this case in abeyance pending completion of the Board's rulemaking in Ex Parte No. 715, *Rate Regulation Reforms* (served July 25, 2012), so that the Board could apply any cross-over traffic restrictions that might be adopted in that rulemaking, NS has not renewed that request in its Reply Evidence. *See* "Norfolk Southern Railway Company's Motion to Hold Case In Abeyance Pending Completion of Rulemaking" (filed Aug. 6, 2012), which the STB denied in a decision served on Nov. 29, 2012. Nevertheless, Rebuttal Exhibit III-A-1 contains a discussion of the limitations upon cross-over traffic that have been proposed in Ex Parte No. 715, and explains why the proposed limitations should not be imposed in this case, whether or not they (or related limitations) are adopted in that proceeding.

impermissible pursuant to Board precedent."[6] NS's claims are meritless. DuPont's SAC presentation does not violate any Board precedent, as "leapfrog" movements exist today in real world railroading (including significant traffic volumes moving on the NS) and the residual NS is fairly compensated for its overhead hook-and-haul trainload operations Simply stated, there is no problem with the inclusion of "leapfrog" traffic in the DRR traffic group In addition, NS's own Reply submission includes the very same "leapfrog" traffic it argues so strongly should be excluded. Moreover, as discussed in greater detail in Part III-C, NS's Reply operating plan – developed using MultiRail – actually creates *additional* leapfrog movements using alternate routings that NS does not use in its real-world operations.

NS failed to develop an operating plan and associated operating parameters and costs associated with its preferred no-leapfrog traffic scenario, "because to do so would require a substantial undertaking."[7] Rather, NS states that, if the Board should buy into its theory regarding the impropriety of including the identified so-called leapfrog traffic, "[t]he Board should... remove all Leapfrog Traffic movements from the DRR traffic group."[8] NS's request for the Board to do NS's work for it is an unprecedented flaunting of the Board's regulatory process. Alternatively, in apparent recognition that NS failed entirely to meet its burden of proof for its proposed alternate traffic group, NS states that, "should the Board agree with NS that this Leapfrog traffic should be excluded from the SAC analysis, the parties would need to conduct such analyses and calculations to determine the costs associated with that traffic."[9] This void of evidence supporting its radical and unsupported alternative traffic group clearly leaves the Board with no choice but to reject NS's proposal outright. NS is requesting that the Board make a

[6] *See* NS Reply, p 1- 26.
[7] *See* NS Reply, p. III-A-55, footnote 50
[8] *See* NS Reply, pp. 1-27 and III-A-2.
[9] *See* NS Reply, p. III-A-55, footnote 50

decision regarding a novel new argument it raised without having even attempted to quantify the impact of its radical proposal on the SAC analysis. Such a "ready, fire, aim" approach to regulation must be rejected.

i. Leapfrog Traffic Moves In The Real World, Including On NS

So-called leapfrog traffic operations represent a rational and efficient approach to maximize the utilization of existing infrastructure and are regularly used by NS and other Class I railroads in real-world railroading today. A well known example is the movement of BNSF east-west traffic over the Montana Rail Link network, which serves as a leapfrog bridge for that traffic. Another example is Pan Am Railways' service as a leapfrog carrier for CP shipments of Bakken crude oil originating in the Williston Basin.[10] In fact, NS itself moves a significant volume of its traffic in leapfrog service over short-line and regional carriers and over other Class I railroad segments

For example, Table III-A-2 below shows the route for NS's movement of industrial sand from Mapleton, PA to Geneva, NY.

[10] *See Bakken Oil Business Journal*, Nov/Dec 2012, Jan 2013, p 36

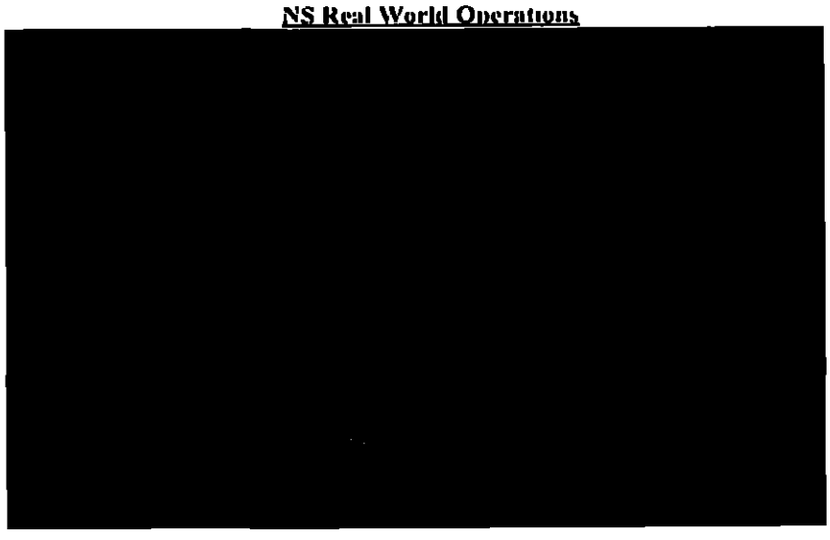
Table III-A-2
Example of Real-World NS Leapfrog Movement – NBER/WNYP

	Route/Segment (1)	Location/Carrier (2)
1.	Origin	MAPLETON, PA
2.	**NS Segment 1**	**NS**
3	NS Off Jct 1	TYRON (Tyrone, PA)
4	**Leapfrog Segment 1**	**NBER (Nittany & Bald Eagle RR)**
5	NS On Jct 1	LOCHA (Lock Haven, PA)
6.	**NS Segment 2**	**NS**
7.	NS Off Jct 2	NODRI (N. Driftwood, PA)
8	**Leapfrog Segment 2**	**WNYP (Western NY & Penn RR)**
9.	NS On Jct 2	HORNL (Hornell, NY)
10.	**NS Segment 3**	**NS**
11.	Destination	GENEVA (FGLK), NY

Source: e-workpaper "NS LF example moves w SUM xlsx"

As shown in the example above, the identified movement encompasses not one, but two (2) separate leapfrog movements over two different non-NS railroads, creating three (3) distinct NS segments, and two (2) distinct non-NS bridge segments, in the loaded direction. This movement is depicted in Figure 1 below.

Figure 1
NS Real World Operations



For this example movement, NS maintains two separate waybill records. One record contains a "G" in the HAULAGE_IND field, and the other contains an "O" in the HAULAGE_IND field. The significance of this field was described by NS in its discovery production:

> • **Payable Haulage** – Waybills with haulage indicator = G are system-generated haulage bills which are used for transportation purposes. The waybills from which they are generated identify haulage indicator = O. The revenue amounts associated with the 'O' bills represent the total that NS billed the customer. They do not identify the amounts NS paid to the haulage road. These amounts are provided separately.[11]

In the above example move, the two relevant waybill serial numbers are 4599100347 (type G) and 4599100266 (type O).

> **4599100347** – Haulage indicator = G
> Route = NS-TYRON-NBER-LOCHA-NS
> NBER hauled the car (for NS) from Tyrone to Lock Haven
> NS paid NBER for haulage.
>
> **4599100266** – Haulage indicator = O
> Route = NS-NODRI-WNYP-HORNL-NS
> This bill represents the total that NS billed the customer (for Mapleton to Geneva), including amounts that NS then paid to NBER

This means that NS billed the shipper for the entire route from Mapleton to Geneva under a single waybill, and NS arranged for NBER to serve as a "leapfrog" carrier for the intermediate Tyrone to Lock Haven segment, over which NBER hauled the car for NS. NS's handling line data confirms the leapfrog operations for this particular movement, as NS paid NBER {{[redacted]}} per car in handling line charges over the 55-mile NBER leapfrog bridge used to move this traffic in January 2010.[12] In fact, on Reply, NS adjusted the line-haul revenues for this NS revenue waybill shipment downward to reflect handling line payments NS made to NBER

[11] *See* e-workpaper "NS Waybill Files_SSI doc."
[12] *See* e-workpaper "DuPont OPENing with 31-day rule for handling line charge data flow (car AEX 16) EVALUATE RESULTS xlsx" at level "EXAMPLE"

for moving the traffic on NS's behalf using the procedures NS developed to link its handling line charge data to the related waybills.[13] NS moved {{[redacted]}} cars in leapfrog service over NBER, and {{[redacted]}} cars in leapfrog service over WNYP in 2010.[14] As discussed in greater detail below, NS's handling line adjustments, coupled with the alternate movement routing included in its operating plan, create a disconnect between its revenue calculations and its operating cost calculations.

The NBER proudly proclaims on its website that it: "preserves rail transportation for industry in Blair, Centre, and Clinton Counties, hauling large quantities of stone and general merchandise, and **serving as a bridge line** for the movement of coal to power plants."[15] Similarly, the WNYP website indicates that "WNY&P began **independent operations** in 2001 after concluding a long term lease with Norfolk Southern."[16]

In Opening, DuPont maintained the real-world routing for this movement, and stepped into NS's shoes over the portions of the NS system that were incorporated in the DRR network, as shown in Figure 2 below.

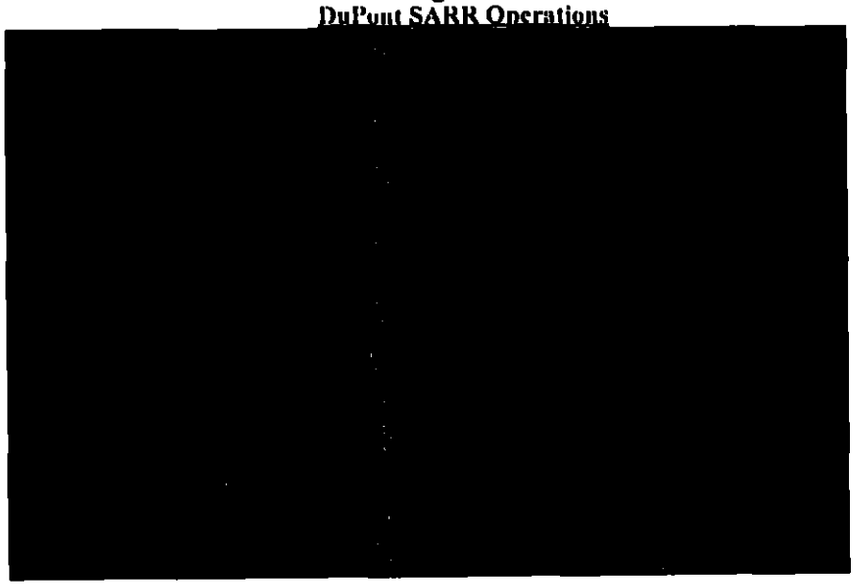
[13] The procedures NS used to link the handling line charges to the corresponding revenue waybills are documented at NS Reply pp III-A-73-75

[14] *See* e-workpaper "DuPont 2010 unique Full Route and counts ID Leapfrog.xlsx"

[15] *See* http://www.nshr.com/NBER%20page.html, emphasis added

[16] *See* http://www.wnyprr.com/page.php?page=NQ

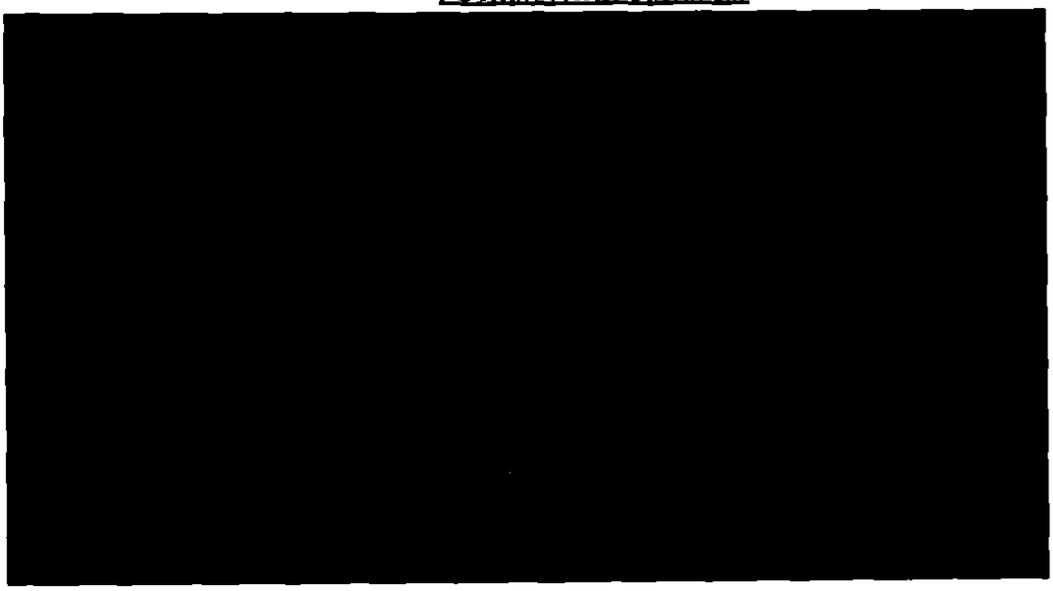
Figure 2
DuPont SARR Operations



Under this arrangement, the movement, which traverses five (5) distinct segments in the real-world (NS-NBER-NS-WNYP-NS), becomes a mirror movement over six (6) distinct segments in the DuPont SARR construct (DRR-NBER-NS-WYNP-DRR-NS). The DRR steps directly into NS's shoes over the Mapleton to Tyrone, and Hornell to Corning segments

NS's handling line adjustments to the NS net revenues discussed above, coupled with the alternate movement routing included in NS's Reply operating plan, create a disconnect between NS's revenue calculations and its proposed operations and operating cost calculations Specifically, NS used MultiRil to develop alternate routes for much of the DRR traffic group over the DRR and residual NS networks. As discussed in greater detail in Part III-C. NS routed this particular movement over a circuitous and unnecessarily lengthy alternate route along the shores of Lake Erie The NS Reply route is depicted in Figure 3 below.

Figure 3
NS Reply SARR Operations



There are several problems with NS's treatment of this movement in its Reply filing First, the alternate route NS proposes results in an impermissible external reroute over a portion of the residual NS the traffic does not use in the real-world. This imposes an additional operational and cost burden on the residual NS that it does not incur in the real-world and is expressly prohibited under SAC. In addition, NS nets the handling line payments that it makes to the NBER for its portion of this movement out of the NS net revenues before allocating the revenues under the Average Total Cost ("ATC") formula. As a result, NS pays NBER for services NBER is not required to perform under the NS SAC model Finally, NS did not attempt to make any showing that its substantially longer and more circuitous route would meet the customer's needs.

Another example of NS's use of regional railroads as bridge carriers is over the Alabama and Gulf Coast Railway ("AGR"). Consider the example movement summarized in Table III-A-3 below

Table III-A-3
Example of Real-World NS Leapfrog Movement - AGR

Route/Segment (1)	Location/Carrier (2)
1. Origin	TRINITY, MS
2. Origin Rd	GTRA
3 NS On Jct 1	TRIJC (Trinity Jct., MS)
4 **NS Segment 1**	**NS**
5. NS Off Jct 1	CLMBM (Columbus, MS)
6 **Leapfrog Segment**	**AGR (Alabama & Gulf Coast Rwy)**
7. NS On Jct 2	BOLGE (Boligee, AL)
8. **NS Segment 2**	**NS**
9 NS Off Jct 2	NEWOR (New Orleans, LA)
10 Destination Rd	CN
11. Destination	ROMEVILLE, LA

Source: e-workpaper "NS LF example moves w SUM.xlsx "

As with the example in Table III-A-2 above, NS generated two waybill records associated with the shipments shown in Table III-A-3, an "O" movement record for the shipment from Trinity, MS to Romeville, LA for which NS collected revenues from the shipper, and a related "G" haulage record for the intermediate segment from Columbus, MS to Boligee, AL over which AGR hauled the traffic for NS and NS paid AGR for performing the "leapfrog" service on its behalf NS moves nearly {{[redacted]}} cars per year over the AGR in leapfrog service according to its provided traffic data [17]

Another example of NS's use of regional railroads as bridge carriers is over the Grand Elk Railroad ("GDLK") in Michigan and Indiana is summarized in Table III-A-4 below

[17] *See* e-workpaper "Dul'ont 2010 unique Full Route and counts ID Leapfrog.xlsx "

Table III-A-4
Example of Real-World NS Leapfrog Movement - GDLK

	Route/Segment	Location/Carrier
	(1)	(2)
1.	Origin	LOWELL (GR), MI
2	**NS Segment 1**	**NS**
3.	NS Off Jct 1	GDRAP (Grand Rapids, MI)
4.	**Leapfrog Segment**	**GDLK (Grand Elk RR)**
5.	NS On Jct 1	ELKHR (Elkhart, IN)
6	**NS Segment 2**	**NS**
7.	NS Off Jct 2	CHGO (Chicago, IL)
8	Destination Rd	CPRS
9.	Destination	CALGARY TFR, AB

Source: e-workpaper "NS LF example moves w SUM xlsx"

In the Table III-A-4 example, the "O" movement record is for the shipment from Lowell, MI to Calgary, AB for which NS collected revenues from the shipper, and the related "G" haulage record is for the intermediate segment from Grand Rapids, MI to Elkhart, IN over which GDLK hauled the traffic for NS and NS paid GDLK for performing the "leapfrog" service on its behalf. NS moves well over {{[redacted]}} cars per year over the GDLK in leapfrog service according to the routing data in its provided traffic data.[18]

Similarly, NS uses the Central Railroad of Indianapolis ("CERA") as a leapfrog bridge for nearly {{[redacted]}} movements per year. One example is shown in Table III-A-5 below

[18] *Id.*

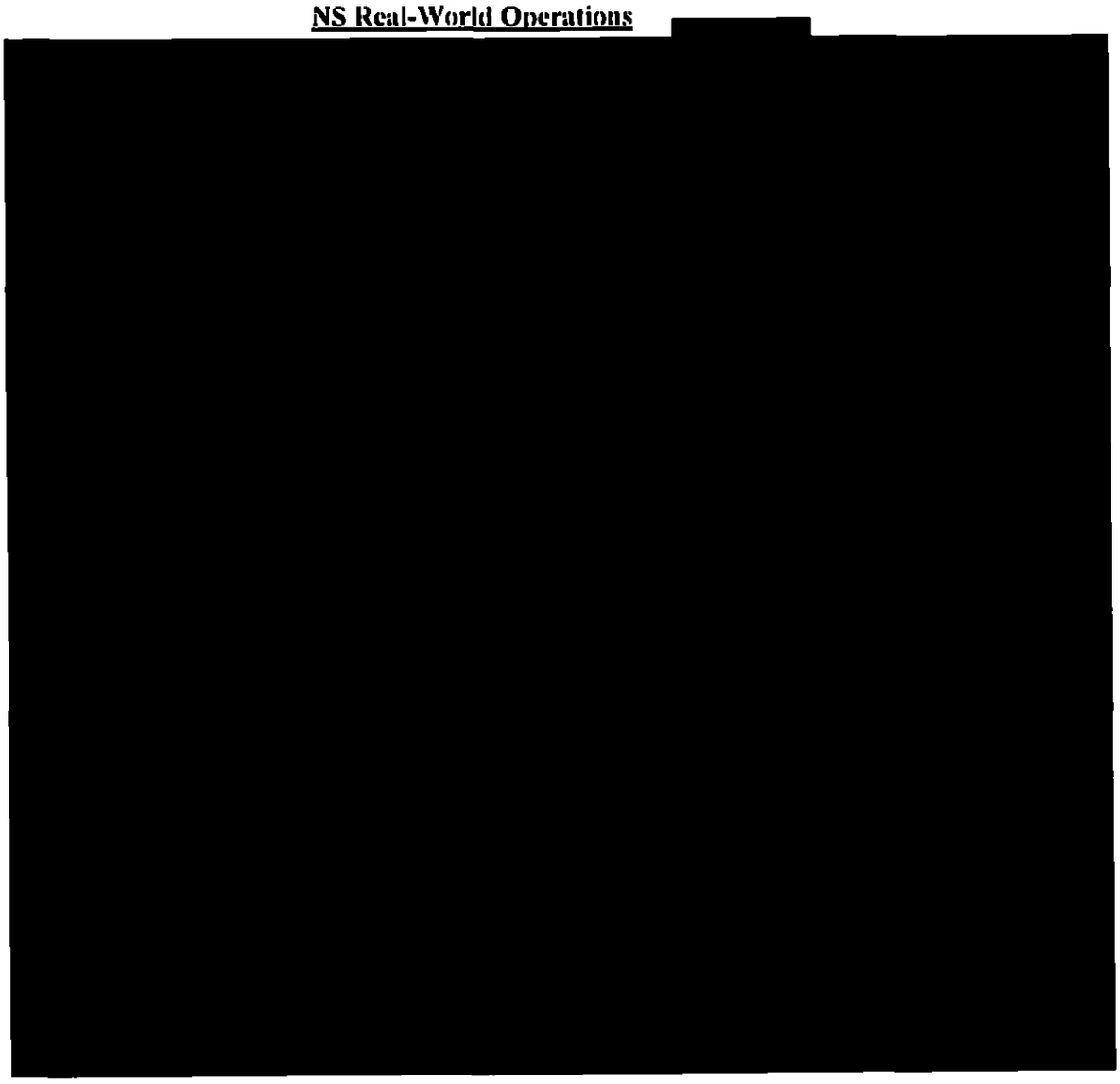
Table III-A-5
Example of Real-World NS Leapfrog Movement - CERA

Route/Segment (1)	Location/Carrier (2)
1. Origin	CLYMERS (USRP), IN
2. **NS Segment 1**	**NS**
3 NS Off Jct 1	KOKOM (Kokomo, IN)
4 **Leapfrog Segment**	**CERA (Central RR of Indianapolis)**
5. NS On Jct 1	MARN (Marion, IN)
6. **NS Segment 2**	**NS**
7. NS Off Jct 2	ATLA (Atlanta, GA)
8 Destination Rd	CSXT
9 Destination	FAIRBURN, GA

Source: e-workpaper "NS LF example moves w SUM xlsx"

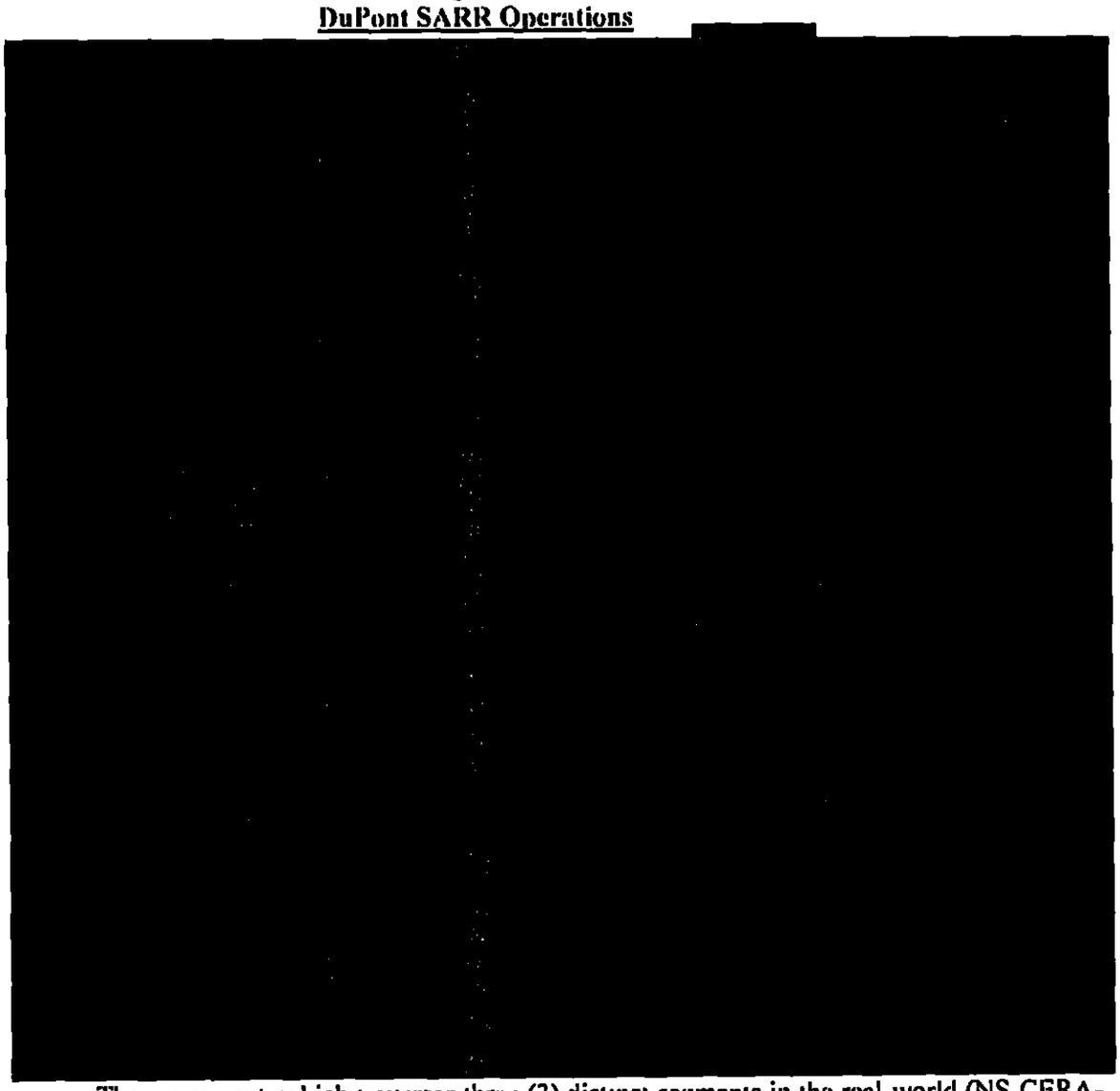
In the Table III-A-5 example, the "O" movement record is for the shipment from Clymers, IN to Fairburn, GA for which NS collected revenues from the shipper, and the related "G" haulage record is for the intermediate segment from Kokomo, IN to Marion, IN over which CERA hauled the traffic for NS and NS paid CERA for performing the "leapfrog" service on its behalf. The real-world route of movement is depicted below in Figure 4.

Figure 4
NS Real-World Operations



In Opening, DuPont maintained the real-world route over NS-CERA-NS and assumed the role of NS for two (2) segments, between Clymers and Logansport and between Cincinnati and Atlanta. The DRR operations included in DuPont's opening analysis are shown in Figure 5 below.

Figure 5
DuPont SARR Operations



The movement, which traverses three (3) distinct segments in the real-world (NS-CERA-NS). becomes a mirror movement over five (5) distinct segments in the DuPont SARR construct (DRR-NS-CERA-NS-DRR) The DRR steps directly into the NS's shoes over the Clymers to Logansport, and Cincinnati to Atlanta segments.

As with the Mapleton to Geneva movement discussed above, NS used MultiRail to develop an alternate route for this movement over the DRR. but in this case, the alternate route

posited by NS was not only longer and more circuitous, it was also completely internal to the NS The NS Reply route is depicted in Figure 6 below

Figure 6
NS Reply SARR Operations

This alternate routing, combined with NS's treatment of the movement's revenues, renders NS's analysis deeply flawed and unusable First, as with the Mapleton to Geneva movement discussed above, NS nets handling line payments to CERA out of the NS net revenues

before allocating revenues to the DRR and residual NS using the ATC formula [19] As with the prior example, this results in the CERA receiving revenues for service it does not perform. But in this case, the NS revenue treatment is even more egregious NS has turned a movement that is a cross-over movement in the DuPont SARR construct into a DRR local movement in the NS construct However, because NS uses the actual route to calculate its ATC percentages. NS still allocates revenue to the residual NS for a movement that moves entirely on the DRR in the NS operating plan.[20]

These real-world leapfrog arrangements are made under haulage agreements with the landlord railroad to allow for more efficient routing over their combined networks. Like the above-discussed arrangements with regional and short-line carriers, NS and Canadian Pacific Railway ("CP") have such an arrangement in the northeast Specifically, CP hauls NS traffic over its rail network in New York and Pennsylvania to bridge gaps in NS's own network. In all, NS moves well over {{[redacted]}} cars per year via haulage agreements over CP rail lines primarily connecting Rouses Point, NY, Albany/Mechanicville, NY, Binghamton, NY, Taylor, PA. and Harrisburg, PA.[21] An example is shown in Table 6 below.

[19] *See* e-workpaper "DuPont2010 Handling lines I.xlsx" at level "INT-RD" and e-workpaper "DuPont2010 LeapFrog waybills with NS reply linked Handling Lines I.xlsx at levels "Sheet 1" and "OD Route "

[20] *See* NS Reply e-workpaper "DRR_2010_TRAFFIC_ATC_OPENING_v1_041412 Reply xlsx" at level "DATA_ATC_CALCULATIONS_2" cell AZ22751 (DRR revenue division is {{[redacted]}} percent).

[21] *See* e-workpaper "DuPont 2010 unique Full Route and counts ID Leapfrog xlsx "

Table III-A-6
Example of Real-World NS Leapfrog Movement - CPRS

Route/Segment (1)	Location/Carrier (2)
1. Origin	AYER, MA
2. **NS Segment 1 (NS/PAS Joint Line)**	**NS**
3. NS Off Jct 1	MCV (Mechanicville, NY)
4. **Leapfrog Segment**	**CPRS**
5. NS On Jct 1	BING (Binghamton, NY)
6 **NS Segment 2**	**NS**
7 NS Off Jct 2	CHGO (Chicago, IL)
8 Destination Rd	BNSF
9. Destination	LOS ANGELES, CA

Source: e-workpaper "NS LF example moves w SUM xlsx"

In the Table III-A-6 example above, the movement originates on the NS/PAS joint line in Massachusetts and moves to Mechanicville, NY. At Mechanicville, it enters the CP rail system and moves (via CP haulage) to Binghamton where it reenters the NS network for movement west to Chicago The "O" revenue waybill record is for the shipment from Ayer, MA to Chicago, IL for which NS collected revenues from the shipper, and the related "G" haulage record is for the intermediate segment from Mechanicville, NY to Binghamton, NY over which CP hauled the traffic for NS and NS paid CP for performing the "leapfrog" service on its behalf. This is a logical and efficient arrangement that serves to provide the best possible service to the shipper and the most cost effective operations to the involved carriers.

The list goes on and on From the materials NS provided in support of its traffic data production, each of the railroads in the list below serve as the haulage carrier for NS real-world movements.

Hauling Road	Agreement Number	Point(s) of Interchange (Point pairs can be reversed)
AGR	127A	Boligee, AL to Columbus, MS
BNSF	076A	Des Moines, IA to North St Louis, MO

Hauling Road	Agreement Number	Point(s) of Interchange (Point pairs can be reversed)
BNSF	076A	Runnells-Des Moines
BNSF	076A	Albia-Des Moines
BNSF	076A	Albia-Runnells
BNSF	076A	West Quincy-Des Moines
BNSF	076A	Hannibal-Des Moines
BNSF	076A	St Louis-Des Moines
BNSF	076A	West Quincy-Runnells
BNSF	076A	Hannibal-Runnells
BNSF	076A	St Louis-Runnells
BNSF	076A	West Quincy-Albia
BNSF	076A	Hannibal-Albia
BNSF	076A	St Louis-Albia
BNSF	076A	Hannibal-West Quincy
BNSF	076A	St Louis-West Quincy
BNSF	076A	Hannibal, Mo to Quincy, IL
WNYP	080A	Meadville, PA to Rouseville, PA
CPRS	105A	Binghamton, NY to Mechanicville, NY
CPRS	105F	Harrisburg,PA to Mechanicville,NY
CPRS	105G	Rouses Point NY from/to Saratoga Springs NY
CSXT	712A	Charleston,SC and Grant, SC
CSXT	712B	Newberry,SC to Columbia,SC
CSXT	712C	Louisville,KY to Warsaw,KY
CSXT	712E	Charleston,SC to Berkeley, SC
CSXT	712F	Columbia,SC to Orangeburg, SC
CSXT	712G	Charlotte,NC to Shelby, NC
CN/GTW	308A	Toledo,OH to Detroit(Flat Rock),MI
FEC	263A	Jacksonville,FL to Miami,FL
FEC	263B	Bowden Yard (FEC Jax) to Miami TBT
FEC	263C	Bowden Yard (FEC Jax) to Titusville,FL AUTOS
FEC	263D	Bowden Yard (FEC Jax) to Titusville,FL TOFC
KCS	400C	Tuscaloosa, AL to Holt, AL
KCS	400G	Meridian, MS to Meridian/Shreveport (R)
RJCP	663A	Cresson, PA to Keating, PA
ST	746A	Mechanicville,NY to Ayer, MA
UP	802A	Sidney, IL to Salem, IL
UP	802B	Gavin, AR to Memphis, TN
GDLK	335A	Elkhart,IN to Grand Rapids, MI
CUOH	156A	Columbus, OH to Mingo Jct, OH

Hauling Road	Agreement Number	Point(s) of Interchange (Point pairs can be reversed)
BPRR	154A	Buffalo, NY to Arcade, NY
PAS	490A	Ayer, MA to Waterville,ME
WTNN	258A	Corinth,MS to Fulton, KY
CN	103A	Corinth,MS to Fulton, KY

Many of the above-listed haulage route segments[22] serve exclusively or predominantly as intermediate "leapfrog" segments for NS movements

NS describes the inclusion of "leapfrog" traffic as an.

> [U]nprecedented contortion of the cross-over traffic device, which is intended to be a simplifying measure that replicates the results of a fully modeled SARR and SAC analysis without introducing bias to the analysis. DuPont's proposed approach does exactly the opposite: it complicates the SAC analysis while simultaneously introducing bias and distorting the analysis, in part by allowing the SARR to avoid high-cost, low-contribution, and operationally difficult internal segments of SARR routes.[23]

Clearly, NS's assertions are unsubstantiated and self-serving NS merely seeks to exclude as much of the DRR traffic as possible. In the absence of any actual violations of SAC theory or STB precedent in DuPont's traffic selection process, NS has coined a new term for a supposedly discrete "category" of cross-over traffic solely for the purpose of objecting to its inclusion

Furthermore, NS's own development of its alternate operating plan based on the use of the MultiRail computer program (discussed in greater detail in Part III-C) creates fictional routing that differs from real-world NS routing and that creates new and different leapfrog segments for many movements, while allocating revenue to real-world haulage railroads it routes around in its model.

[22] *See* e-workpaper "NS_ELECTRONIC_DATA_SSI.xlsx" at level "Haulage Payable "
[23] *See* NS Reply, pp III-A-1-2.

Returning to the first real-world leapfrog movement example in Table III-A-2 above (Mapleton, PA to Geneva, NY via NS-NBER-NS-WNYP-NS), we observe an efficient real-world routing over three railroads totaling 371 loaded miles [24] By comparison, the NS's MultiRail modeling exercise instead routed the traffic via a circuitous NS-only route via Pittsburgh, PA, Conway, PA, Ashtabula, OH, and Buffalo, NY, a total of 611 loaded miles However, the DRR network does not include either the Homewood Jct.-to-Ashtabula or the Ashtabula-to-Buffalo NS segments. Therefore, the NS operating plan creates a new leapfrog segment over the residual NS that does not exist in the real-world, and forces the residual NS to move the traffic over the Homewood Jct -Ashtabula-Buffalo portion of the NS system that the traffic does not utilize in the real world, thus creating an external reroute and violating an existing SAC rule.

In addition, in developing its net NS revenues for this movement, NS nets out the handling line charges it pays to NBER for its portion of the movement, thus creating a disconnect between the revenues and operations for the movement in the NS model. NS allocates revenue for this movement to the leapfrog segment that it routes around

In fact, evaluation of the NS handling line database is instructive for purposes of understanding just how prevalent leapfrog movements are in the real-world NS operations. The data field titled "HANDLING LINE R/F/I" includes one of three data entries, as follows

R=Received
F=Forwarded
I=Intermediate[25]

Leapfrog traffic is so prevalent in NS's operations that it has an entire category of traffic identified as such in its handling line database In fact, there are 24,813 data records (and

[24] *See* e-workpaper "DuPont OPENing with 31-day rule for handling line charge data flow (car AEX 16) EVALUATE RESULTS xlsx" at level "EXAMPLE"
[25] *See* e-workpaper "NS_ELECTRONIC_DATA_SSI.xlsx."

associated charges) in the NS 2010 handling line database associated with intermediate handling line segments [26]

ii. The DRR Network Is Based On Real-World Operations And Traffic Flows

NS's claim that "DuPont seeks to avoid the costs of building, maintaining, and operating expensive segments of what should be the SARR network."[27] is totally without merit.

The complainant must develop a SARR network to serve the issue traffic. It may then include other non-issue traffic that shares those facilities, including cross-over traffic. The SARR is not required to construct all facilities required to serve the non-issue traffic from end-to-end. The defendant railroad is not entitled to determine which segments should or should not be included in the SARR network.

In addition, while NS challenges DuPont's choice not to build the Heartland Corridor "on which NS recently completed a very expensive project to open the route to higher speed, double-track [sic] trains – goes through very mountainous terrain, with steep grades and challenging curves, and it contains numerous tunnels and bridges"[28] it fails to mention that the "very expensive project" it recently completed that "opened the route" to profitable high-speed double-stack intermodal trains was federally funded. In fact, according to the Federal Highway Administration ("FHWA"), highway trust fund ("HTF") revenues accounted for {{[redacted]}} million, or 60 percent of the total {{[redacted]}} million project cost.[29]

In other words, Congress earmarked, and NS invested, tax-payer dollars to improve its rail network over an already high-density line to dramatically improve its capacity and

[26] There are often multiple handling line records associated with a single carload movement, so this does not represent 24,813 carloads moving in this type of service.
[27] *See* NS Reply, p. III-A-55
[28] *Id.* pp. III-A-55-56
[29] *See* http://ops.fhwa.dot.gov/freight/policy/rpt_congress/pnrs12rptcong/index.htm

throughput on that route and generate profits for its shareholders But NS objects to dividing that revenue with the SARR on the basis that the SARR avoided the very same investment that NS avoided through the use of HTF dollars to fund the investment

NS's statement that "this tactic could allow a complainant to avoid any expensive segment or facility on its SARR network traversed by non-issue traffic. . simply by assuming the residual incumbent will construct and operate that facility, and act as a bridge carrier for the SARR"[30] is intentionally misleading in that the residual incumbent has already constructed and operates the non-SARR rail segments and facilities The residual incumbent would not need to "construct and operate" any new facility no matter the SARR configuration.

Finally, NS claims that leapfrog traffic "is distortion and abuse of the cross-over traffic device beyond any the Board has previously contemplated. The Board should... prohibit[] cross-over traffic in which the SARR uses the residual incumbent as a bridge or overhead carrier on a segment or line of railroad that is internal to the SARR "[31] This logic is at its core faulty.

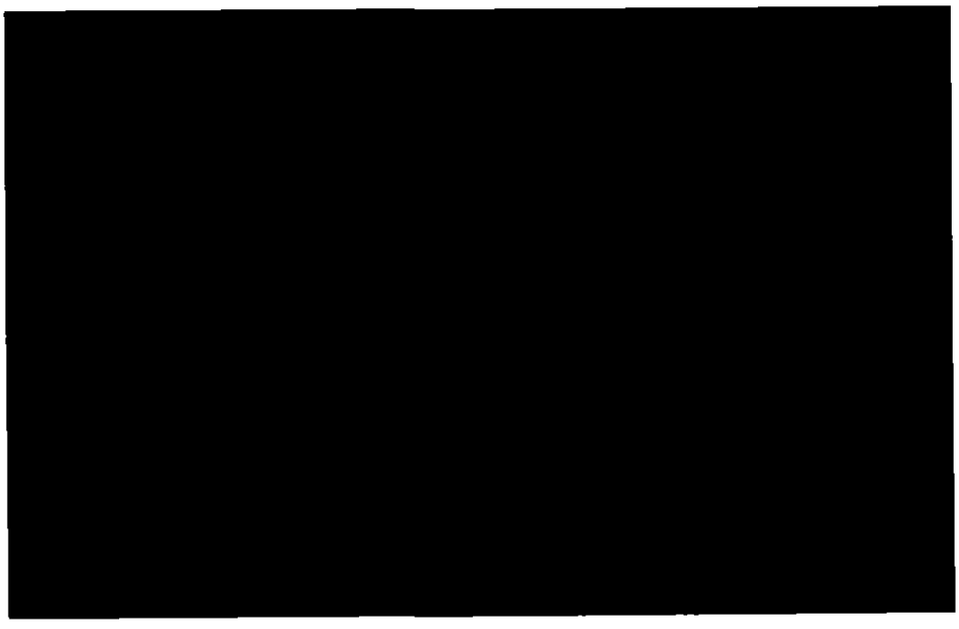
The segments in question are not "internal to the SARR " They are parallel to the SARR and in some cases redundant to lines DuPont did build DuPont simply chose not to re-route traffic over lines it is building (and increase its revenues). Rather it chose to work with the residual NS to provide the full service In contrast, as discussed in the preceding section, NS did re-route DRR traffic over lines the DRR did not construct and over which the traffic does not move in the real world. Therefore it was NS – not DuPont – that forced the residual NS to serve as a bridge carrier moving *externally rerouted* traffic over NS segments that were not included in the DRR system (e.g , Cleveland to Buffalo).

[30] *See* NS Reply, p. III-A-57
[31] *Id* p. III-A-59.

Also, the scenario that exists with the so-called "leapfrog" traffic is precisely the opposite scenario about which the Board expressed concern first in *AEPCO* and later in *Ex Parte 715* There, the Board expressed concern that a SARR positioned as an internal "bridge" carrier to the residual incumbent would be over-compensated by the ATC revenue division formula for the efficient overhead hook-and-haul trainload operations it provided for the residual incumbent over the costly high-density bridge segment. The example trains NS offers[32] as proof that NS is being unfairly undercompensated for the services it performs show precisely the opposite scenario

The Train #234 example NS describes as:

> One example of DRR Leapfrog trains that traverse the Heartland Corridor are trains that run between Chicago and Norfolk. The #234 is an eastbound train that originates in Chicago, runs over the DRR to Bellevue OH, turns south to Chillicothe, OH, where the DRR would hand the train back to NS, which would carry the train over the Heartland Corridor to PD Junction, WV, where the train would be interchanged back to the DRR, to move to Petersburg, VA, where the DRR would then hand the train back to NS for movement to Norfolk and its destination *See* DuPont Errata WP "Link between RTC and NS Train Names.xlsx" This particular Leapfrog movement is illustrated on the following map.



[32] *See*, e g , Train #234, NS Reply, p III-A-57.

In this example, NS performs efficient overhead hook-and-haul trainload operations over the costly, high-density (and very profitable) Heartland corridor bridge segment. If the Board believed that the ATC formula overcompensated the SARR in *AEPCO* because the SARR provided efficient hook-and-haul overhead trainload service over a high-cost, high-density bridge segment, then it simply must reject NS's assertion that the SARR in this case is avoiding its cost burden because the residual NS provides efficient hook-and-haul overhead trainload service over a high-cost, high-density bridge segment. The simple truth is that the SARR in the *AEPCO* case was not over-compensated for its role as a bridge carrier, and the residual NS segments are not under-compensated for their identical role as a bridge carrier in this case. Both "bridge carriers" are fairly compensated for their roles as a result of the ATC revenue division formula based on the incumbent's costs incurred over the segments in question.

Even if the Board were to agree with NS's unsupportable claim that inclusion of leapfrog traffic is inappropriate, there are no grounds on which to simply remove the traffic from the SARR traffic group. For the reasons described above, there is no problem with including the traffic and the associated revenue divisions on that traffic based on the on-SARR and off-SARR routing. However, assuming for the sake of argument that there was a problem with the so-called "leapfrog" operations, at most, the subject traffic should be limited to a single on-SARR segment. Because all of the "leapfrog" traffic could easily be converted to single-SARR-segment cross-over traffic, there is no reason to eliminate the traffic entirely. Again look at the Train #234 example.[33] In this example, Segment 1 is a DRR segment from Chicago to Chillicothe, Segment 2 is a residual NS segment from Chillicothe to PD Junction, Segment 3 is a DRR segment from PD Junction to Petersburg, and Segment 4 is a residual NS segment from Petersburg to Norfolk. (See map on previous page.) If the Board were to conclude there are

[33] *Id.*

conceptual problems with this approach, the logical adjustment for carloads that travel on Train #234 from train origin to train destination would be to retain Segment 1 (or Segment 3) as the DRR segment and classify the remaining segments as residual NS segments, not to discard the movement from the SARR traffic group entirely. To do so would unjustifiably restrict the SARR from the scale economies enjoyed by the NS in the real world. NS has made no attempt to tease out the "leapfrog" traffic revenues attributable to each individual DRR segment but rather proposes to eliminate the traffic altogether.[34] Furthermore, NS's use of a train in its example is misplaced because ATC revenue divisions are not based on train operations but rather on carload operations. In the above example, it is highly likely that some traffic moving on Train #234 moves between Chicago and a location between Chillicothe and Kellysville (on the so-called leapfrog segment) These movements would not be considered leapfrog movements by NS, even though the train on which they moved re-entered the DRR after it set-out the cars in question. This critical flaw in NS's logic is discussed in greater detail in Part III-C

Despite the fact that NS argues for elimination of all "leapfrog" traffic from the SARR traffic group, NS admits that it:

> has not calculated the operating and investment expenses associated with this traffic, because to do so would require a substantial undertaking akin to a mini-SAC analysis, including running a separate RTC analysis and possibly making adjustments to the operating plan and SARR configuration and re-calculating corresponding operating and investment costs Should the Board agree with NS that Leapfrog traffic should be excluded from the SAC analysis, the parties would need to conduct such analyses and calculations to determine the costs associated with that traffic.[35]

NS seems to be requesting that the Board send the parties back to the beginning of a new SAC proceeding and for this case to drag on for years while it collects its challenged tariff rates

[34] Actually NS proposes to eliminate the revenues associated with the traffic from the revenue calculation but NS retains the traffic and associated operations and costs in its model

[35] *See* NS Reply, p III-A-55, n. 50.

and DuPont absorbs the costs of both those high transportation rates and increased litigation. NS did not submit the complete evidence required to determine the impact of its proposed change on the SAC analysis. As a result, the only complete evidence submitted by either party is for the scenario where the "leapfrog" traffic is included in the SARR traffic group.

It is noteworthy that NS acknowledges that the process required to identify SARR traffic, calculate SARR revenues, and calculate operating and investment expenses associated with the traffic requires a substantial undertaking – one that NS presumably decided was not worth the time and expense to undertake during the seven (7) months it had to develop its Reply Evidence. Evidently when NS feels it does not have sufficient time to prepare valid evidence it may simply put forward a general theoretical premise and claim that, should the Board agree with its theory, then it should be afforded sufficient time at a future date to complete the calculations required to quantify the impact of its theory.

2. Forecasted Traffic Volumes

Table III-A-7 below compares DuPont's Opening and NS's Reply base and forecasted DRR traffic volumes over the 10-year study period. DuPont's Opening traffic volumes are summarized in Column (2) and NS's Reply traffic volumes are summarized in Column (6) with the total differences between the two identified in Column (7). The impact of the three areas of difference are quantified in Column (3) through Column (5) and each difference is discussed below.

Table III-A-7
Comparison of DuPont Opening and NS Reply DRR Projected Traffic Volumes
(Tons)

Year (1)	DuPont Opening[1] (2)	NS Identified Differences: Weighting Factors (3)	NS Identified Differences: Forecast Procedures: Coal (4)	NS Identified Differences: Forecast Procedures: Non-Coal (5)	NS Reply[2] (6)	Difference[3] (7)
6/1 - 12/31/09	{{[redacted]}}	{{[redacted]}}	{{[redacted]}}	{{[redacted]}}	{{[redacted]}}	{{[redacted]}}
2010	{{[redacted]}}	{{[redacted]}}	{{[redacted]}}	{{[redacted]}}	{{[redacted]}}	{{[redacted]}}
2011	{{[redacted]}}	{{[redacted]}}	{{[redacted]}}	{{[redacted]}}	{{[redacted]}}	{{[redacted]}}
2012	{{[redacted]}}	{{[redacted]}}	{{[redacted]}}	{{[redacted]}}	{{[redacted]}}	{{[redacted]}}
2013	{{[redacted]}}	{{[redacted]}}	{{[redacted]}}	{{[redacted]}}	{{[redacted]}}	{{[redacted]}}
2014	{{[redacted]}}	{{[redacted]}}	{{[redacted]}}	{{[redacted]}}	{{[redacted]}}	{{[redacted]}}
2015	{{[redacted]}}	{{[redacted]}}	{{[redacted]}}	{{[redacted]}}	{{[redacted]}}	{{[redacted]}}
2016	{{[redacted]}}	{{[redacted]}}	{{[redacted]}}	{{[redacted]}}	{{[redacted]}}	{{[redacted]}}
2017	{{[redacted]}}	{{[redacted]}}	{{[redacted]}}	{{[redacted]}}	{{[redacted]}}	{{[redacted]}}
2018	{{[redacted]}}	{{[redacted]}}	{{[redacted]}}	{{[redacted]}}	{{[redacted]}}	{{[redacted]}}
1/1 – 5/31/19	{{[redacted]}}	{{[redacted]}}	{{[redacted]}}	{{[redacted]}}	{{[redacted]}}	{{[redacted]}}

1/ DuPont Opening III-A-3, e-workpaper "Traffic and Revenue Summary.xlsx."
2/ NS Reply III-A-3, e-workpaper " Traffic and Revenue Summary Reply xlsx" or Col (2) minus (Col (3) Col (4) Col (5))
3/ Column (2) minus Column (6)

NS accepts most of DuPont's traffic projections for the DRR for the June 2009 through 2015 time period but challenges: 1) DuPont's weighting factors (Column (3) above), 2) DuPont's use of NS's internal forecasts to project DRR coal traffic volumes (Column (4) above) which were produced in discovery by NS; and, 3) DuPont's non-coal forecast procedures (Column (5) above).

The reasons for the differences summarized in Table III-A-7 are shown by comparing DuPont's Opening and NS's Reply forecasts which are summarized in Table III-A-8 below on a commodity-by-commodity basis. Following Table III-A-8 is an explanation of the Table III-A-7 differences and a restatement of DuPont's forecasts incorporating NS's valid criticisms as well as incorporating independent third party information[36] that has become available since DuPont filed its Opening evidence.

[36] The STB regularly accepts and incorporates updated forecast information from independent third parties during the course of a maximum rate proceeding. *See AEPCO*, p 22 and NS Reply, pp III-A-59-60

Table III-A-8
DuPont Opening and NS Reply DRR Traffic Growth Rates by NS Commodity Group

Time Period	Agriculture (Code 10)	Chemicals (Code 40)	Automotive (Code 60)	Coal (Code 80)	Other Freight (Code 20/25/30)	Intermodal (Code IM)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
DuPont Opening[1]						
1. 2010	XXX	XXX	XXX	XXX	XXX	XXX
2. 2011	{{ }}	{{ }}	{{ }}	{{ }}	{{ }}	{{ }}
3. 2012	{{ }}	{{ }}	{{ }}	{{ }}	{{ }}	{{ }}
4. 2013	{{ }}	{{ }}	{{ }}	{{ }}	{{ }}	{{ }}
5 2014	{{ }}	{{ }}	{{ }}	{{ }}	{{ }}	{{ }}
6. 2015	{{ }}	{{ }}	{{ }}	{{ }}	{{ }}	{{ }}
7. 2016	{{ }}	{{ }}	{{ }}	{{ }}	{{ }}	{{ }}
8. 2017	{{ }}	{{ }}	{{ }}	{{ }}	{{ }}	{{ }}
9. 2018	{{ }}	{{ }}	{{ }}	{{ }}	{{ }}	{{ }}
10 5/31/2019	{{ }}	{{ }}	{{ }}	{{ }}	{{ }}	{{ }}
NS Reply[2]						
1 2010	XXX	XXX	XXX	XXX	XXX	XXX
2 2011	{{ }}	{{ }}	{{ }}	{{ }}	{{ }}	{{ }}
3 2012	{{ }}	{{ }}	{{ }}	{{ }}	{{ }}	{{ }}
4 2013	{{ }}	{{ }}	{{ }}	{{ }}	{{ }}	{{ }}
5 2014	{{ }}	{{ }}	{{ }}	{{ }}	{{ }}	{{ }}
6. 2015	{{ }}	{{ }}	{{ }}	{{ }}	{{ }}	{{ }}
7 2016	{{ }}	{{ }}	{{ }}	{{ }}	{{ }}	{{ }}
8. 2017	{{ }}	{{ }}	{{ }}	{{ }}	{{ }}	{{ }}
9 2018	{{ }}	{{ }}	{{ }}	{{ }}	{{ }}	{{ }}
10. 5/31/2019	{{ }}	{{ }}	{{ }}	{{ }}	{{ }}	{{ }}

1/ DuPont Opening, p. III-A-9
2/ NS Reply, III-A-3 e-workpaper "Summary of Traffic and Revenue Reply xlsx "

a. Weighting Factors

The first area of difference in forecasted traffic volumes between DuPont's Opening and NS's Reply results from different weighting factors used to convert carloads to tons, as tons are the metric being forecasted (Table III-A-7, Column (3)) DuPont developed fixed average tons-per-car for each commodity based on actual NS 2010 data and utilized that average for all forecasted shipments of that commodity NS developed the average tons-per-car for individual movements on the DRR in 2010 and then applied that average to the movement's forecasted shipments NS's approach increases DRR volumes by approximately 520.000 tons from 2011

through May 31, 2019. DuPont accepts NS's calculation of aggregate tons on Rebuttal as NS's approach has minimal impact on the total DuPont Rebuttal tonnages (see Table III-A-10 below)

b. Coal Forecast

The largest difference in traffic volumes is related to coal traffic growth NS rejects several aspects of DuPont's development of coal traffic growth including 1) DuPont's use of NS's own internal forecasts for coal for the 2011 through 2015 time period. 2) DuPont's use of a single rate of change for coal from all areas; 3) DuPont's shifting of projected coal tons to uncapped plants; and 4) DuPont's treatment of coke. pet coke and iron ore. Each of these NS criticisms is discussed in more detail below.

i. NS's Internal Forecast For Coal

NS's internal forecast projected a {{[redacted]}} percent growth in coal volumes between 2010 and 2012 while the actual change during this time period in NS coal traffic showed a decline of nine (9) percent. NS spends over thirty (30) pages in its Reply addressing the reasons for the "precipitous decline in coal shipment volumes that has occurred over the last two years"[37] that caused a deviation from NS's internal forecasts. NS also uses this anomaly as justification for abandoning the remaining three (3) years of its internal forecast After discrediting its internal forecasts, NS turns to an Energy Information Administration ("EIA") forecast to project coal traffic growth stating that "it is clear that the growth in coal demand projected by NS in 2010 for 2011 through 2015 has not been – and will not be – realized."[38]

DuPont accepts NS's position that its internal coal forecast missed the mark for 2010 through 2012 and the use of EIA data as a surrogate forecast to measure the rate of change between 2011 and 2012 is preferable. However, DuPont does not accept NS's abandonment of

[37] *See* NS Reply, p. III-A-4.
[38] *See* NS Reply, p. III-A-12.

the remainder of NS's internal coal forecast. The 2013 through 2015 portion of NS's coal forecast {{[redacted]}}, showing a total of {{[redacted]}} percent growth from 2012 to 2015. DuPont believes this level of growth is reasonable given recent information concerning the resurgence of the coal market and the increased cost of natural gas.[39]

One reason for the discrepancy between reality and NS's coal forecast, according to NS, is the natural gas "Revolution" which resulted in the "substitution of natural gas for coal in the generation of electric power."[40] However, the dramatic shift from coal and natural gas that NS anticipates post 2012 appears to have lost steam. NS's Reply states that actual coal-to-gas switching for 2011 was at 3.1 billion cubic feet per day ("BCFD") and "likely to reach 6.8 BCFD" in 2012.[41] Yet, a recent article from Platts Coal Trader (2/27/13), one of the same sources NS cites in its Reply, quotes BNP Paribas, stating that "(C)oal-to-gas switching could decline by as much as 2.6 Bcf/d this year compared to 2012 due to higher gas prices." The Platts article goes on to say that "a portion of the (coal) market captured initially with low gas prices has reverted back to coal plants as prices have recovered."[42] In addition, NS's Reply claims that "when the price [of natural gas] is below $3.00 per MMBtu, considerable coal to gas occurs" but

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[39] Webster, H. (2013, March 13) - "U.S. EIA raises 2013 domestic coal production forecast by 2.2%" *PLATTS Coal Trader*, pp. 1, 6, Moore, A. (2013, February 13) - "Norfolk Southern expecting metallurgical coal price rebound in Asia" *PLATTS Coal Trader*, pp. 1, 7; Innace, J. (2013, January 29) - "National Mining Association sees global positives for U.S. coal" *PLATTS Coal Trader*, pp. 1, 5. Day, M. (2013, March 2), A Comeback for Coal, from http://online.barrons.com/article/SB50001424052748704356104578326343493523334.html

[40] *See* NS Reply, p. III-A-13. While NS is fervent in its claims that coal traffic has declined due to shifts to natural gas, nowhere does NS incorporate the positive side of this shift in its calculations. Presumably, the very natural gas "revolution" which displaced its coal traffic has also created new and growing energy markets for NS and the rail industry as a whole. U.S. railroad companies have recently seen an upswing in petroleum products shipments from shale formations, and U.S. carloads of petroleum and petroleum products registered 48 percent growth year over year for 2Q2012 (Source: 8/9/12 Trefis). The "(f)racking and other non-conventional sources" that "have generated a glut of natural gas" has required railroad energy transportation capacity as well (*see* NS Reply, p. III-A-14). Recently, NS's Newell Baker, Assistant Vice President of Industrial Development, stated that "[o]ur 2012 results were once *again* anchored by the energy sector.. Norfolk Southern assisted in the location or expansion of 32 energy related facilities in 14 states across our service area" and that "[s]hale gas exploration projects continued to play an important role, along with coal, and power generating equipment" (NS press release 1/4/13).

[41] *See* NS Reply, p. III-A-16.

[42] "*Coal-to-gas switching could fall by 2.6 BCf/d this year*" - BNP Paribas, *PLATTS Coal Trader*, February 27, 2013, p. 1.

its own graph depicting "Coal to Gas Switching By U.S. Power Generators"[43] shows this mark has not been reached since late 2011 and BNP Paribas is calling for $4.50/MMBtu gas in 2015 based on production declines and demand growth.[44] This information points to gas prices well above NS's $3 00 per MMBtu benchmark and closer to the $5.00 per MMBtu threshold where NS claims "relatively little coal to gas switching occurs."[45]

ii. Single Rate of Change For All Coal

DuPont accepts NS's use of the EIA actual and projected coal production volumes by region for the 2011 and 2012 time periods but not its region-specific application DuPont applies the EIA's most recently available AEO "2013 Preliminary" forecast (released December 2012) to NS's "Coal Forecast Reply xlsx" workpaper which designated EIA coal production regions to the corresponding DRR traffic group. Using the NS spreadsheet, and therefore the same NS regional weights, DuPont developed a weighted average coal index for 2011 and 2012. DuPont then incorporated this rate of change into the DRR forecast model along with the NS's internal forecast rates of change for coal for the 2013 to 2015 time period.

DuPont uses a single composite growth index for coal (described above), as DuPont and NS do for all other commodities However, NS argues that, for coal, its coal region-specific application is more accurate than an "undifferentiated" aggregate growth rate for all coal traffic. The DRR's 2010 coal volumes found in DuPont's Opening statement and NS's Reply make up approximately 75 percent of NS's total system coal traffic for 2010 and are therefore representative of the NS's system and the basis for NS's internal marketing forecasts. The DRR is representative of the NS system as demonstrated by the weighting implicit in the composite growth factor, as shown in Table III-A-9 below

[43] *See* NS Reply, p. III-A-19
[44] *Id*
[45] *See* NS Reply. p. III-A-18.

Table III-A-9
Percent Distribution of Coal Tonnage by Region - 2010

EIA Region	NS Internal Forecast	DRR 2010 Traffic
(1)	(2)	(3)
1. CAPP/NAPP	68%	68%
2. PRB	15%	21%
3. Eastern	10%	9%
4 Total	93%	98%

Source: e-workpaper "DuPont Summary of NS Internal Coal Forecast by EIA Region.xlsx "

As shown in Table III-A-9 above, the DRR 2010 coal traffic group mix is comparable to the mix of coal included in NS's internal forecasts when NS's regional designations are applied. The EIA forecast shows the PRB origins with the greatest rate of growth meaning, the DRR traffic growth may be understated (by using the single coal growth rate) since it is made up of 21 percent PRB traffic versus the NS internal forecast of 15 percent

iii. Shifting Tonnage From Capped Plants

NS makes the claim that "[DuPont's] attempt to shift projected tons from a capped plant to an entirely different plant...is unprecedented and has never been allowed by the Board."[46] First, with the revised 2011 and 2012 volumes and {{[redacted]}} growth rates for the remaining years, plant capacities {{[redacted]}}. However, the concept of shifting tonnage is still valid and requires no justification. As shown above, the DRR includes 75 percent of the NS system coal traffic and is therefore representative of the NS internal forecast. DuPont assumes that implicit in NS's internal forecasts are adjustments for anticipated plant closures and capacity issues. DuPont applies the NS forecasted coal growth rate, caps those plants that have limitations, and

[46] *See* NS Reply, p III-A-50, n. 45

applies an adjusted rate to non-capped volumes to tie back to the NS's internal forecasted growth

iv. Treatment of Coke, Pet Coke and Iron Ore

NS claims that DuPont "applies that growth rate to commodities and traffic that have little to do with changes in coal demand, such as iron ore…Instead, consistent with NS's internal forecast, this Reply Evidence {{[redacted]}} iron ore, coke and pet coke volumes, throughout the SAC analysis period."[47] In the data NS provided in discovery, there was no way to differentiate coke, pet coke or iron ore from coal in the commodity group code "80". However, after review of the NS Reply workpaper "2010 Coal 80-Chem 40-Auto 60 Reply.xlsx," DuPont is able to identify Coke, Pet Coke and Iron Ore volumes on the DRR and, like NS, DuPont held these commodities constant throughout the study period.[48]

b. Other (Non-Coal) Commodity Forecasts

As demonstrated in Table III-A-7, Column (5), for the June 2009 through 2015 time period, NS accepts DuPont's single rate of change for traffic projections for all other commodities based on the NS internal forecasts. However, NS challenges DuPont's use of a compound annual growth rate ("CAGR") to develop projected traffic for 2016 through 2019.

c. Compound Annual Growth Rate

NS states that "DuPont's use of an amalgamated CAGR (compound aggregate growth rate) for projecting SARR traffic from 2016 through 2019… is an error that would artificially inflate projected DRR traffic volumes."[49] NS uses a year-over-year growth rate developed from its internal forecast for 2014 and 2015 and applies that growth rate to each subsequent year. The

[47] *See* NS Reply, pp. III-A-50-51

[48] Note coke, pet coke and iron ore make up {{[redacted]}} percent of DRR's total commodity code "80" traffic and {{[redacted]}} percent of total DRR traffic

[49] *See* NS Reply, p. III-A-51

impact of using NS's approach for 2016 through 2019 reduces DRR non-coal volumes by approximately {{[redacted]}} million tons.

While NS claims that its use of a single year-over-year change applied to 2016 through 2019 produces a more reasonable and accurate projection of traffic than DuPont's use of a six-year average, DuPont believes using a longer period of historical data produces more reliable and accurate results

NS takes issue with two aspects of DuPont's CAGR: 1) the base year used by DuPont is 2009; and 2) 2009 incorporates recovery level growth rates into the future. NS describes 2009 as "the bottom of the recession and NS's lowest traffic volume year in the last several years" further stating that use of "the 2009 low traffic watermark as the baseline for developing a mean growth rate for NS rail traffic overstates the likely growth rate in future years because it assumes that the rate of growth in traffic during the rebound from the recession will continue at the same rate from 2016 to 2019."[50]

DuPont includes 2009 in its CAGR because that is when the DRR commences operations. To state that "the rate of growth from the recession will continue" is misleading. The CAGR is used by DuPont to forecast the last 3 plus years of the DRR model based on seven (7) years of NS's own data. This data is representative of how NS has performed (historic data) and how NS anticipates its business will perform (NS's internal forecasts). Utilization of multiple years of data effectively smooths out varying annual changes.

d. Rebuttal Traffic

DuPont accepted some of NS's changes to DuPont's traffic forecasts and rejected others. Table III-A-10 below summarizes DuPont's Opening forecasted traffic volumes and compares NS's Reply to DuPont's Rebuttal forecasted traffic volumes

[50] See NS Reply, p. III-A-52

Table III-A-10
DuPont Opening, NS Reply and
DuPont Rebuttal DRR Forecasted Traffic Volumes
(Tons)

Year	DuPont Opening[1/]	NS Reply[2/]	DuPont Rebuttal[3/]	Difference Cols (4)–(3)
(1)	(2)	(3)	(4)	(5)
6/1 - 12/31/09	{{ }}	{{ }}	{{ }}	{{ }}
2010	{{ }}	{{ }}	{{ }}	{{ }}
2011	{{ }}	{{ }}	{{ }}	{{ }}
2012	{{ }}	{{ }}	{{ }}	{{ }}
2013	{{ }}	{{ }}	{{ }}	{{ }}
2014	{{ }}	{{ }}	{{ }}	{{ }}
2015	{{ }}	{{ }}	{{ }}	{{ }}
2016	{{ }}	{{ }}	{{ }}	{{ }}
2017	{{ }}	{{ }}	{{ }}	{{ }}
2018	{{ }}	{{ }}	{{ }}	{{ }}
1/1 – 5/31/19	{{ }}	{{ }}	{{ }}	{{ }}

1/ Table III-A-7, Column (2)
2/ Table III-A-7, Column (6).
3/ DuPont Rebuttal III-A-3 e-workpaper "Traffic and Revenue Summary Rebuttal.xlsx"

As shown in Table III-A-10, DuPont Rebuttal volumes (Column (4)) declined when compared to DuPont's Opening volumes (Column (2)) By incorporating NS's valid criticisms, the volume of traffic (as measured by tons) that the DRR handles during the study period is greater than NS's Reply volumes The differences are shown in Table III-A-10, Column (5).

3. Stand-Alone Revenues

NS accepts many of DuPont's calculations of historical and projected revenues but does identify several exceptions, in addition to the impact on revenue based on the above mentioned items related to traffic volumes. Table III-A-11 below summarizes the dollar value of the differences between DuPont's Opening and NS's Reply DRR 2010 revenues.

Table III-A-11
Difference in DuPont Opening and NS Reply DRR Revenues – 2010
($ in millions)

	Item	Amount[1/]
	(1)	(2)
1.	DuPont Opening – 2010 DRR Revenues	$6,642.8
2	ATC SQL Coding	$415.8
3	Application of Original ATC in place of Modified ATC	$341.8
4.	TCS/TDIS Revenue Adjustments	$142.1
5.	Handling Line Payments	$73.3
6	Non-NS TCS Traffic Segments	$37.5
7.	Switching Payments	$21.1
8	NS Reply – 2010 DRR Revenues [2/]	$5,611.2
9.	Difference Between DuPont and NS[3/]	$1,031.6

Source: DuPont Rebuttal e-workpaper "Table_IIIA11_DIFF_DuPont_NS_DRR_SARR_Revenues.xlsx"

[1/] The figures shown in this table represent the proportional impact of each item. However, the adjustments proposed by NS are interdependent and have synergistic effects on one another. If one or more changes are not implemented, or if the order in which the changes are implemented is changed, the dollar impact will change both in the aggregate and on a line-by-line basis

[2/] Line 1 – (∑ Line 2 – Line 8)

[3/] Line 1 – Line 9

As shown above, for calendar year 2010, NS Reply revenue adjustments reduce DRR revenues included in DuPont's Opening by $1.0 billion.[51] The reasons for this difference are listed in Table III-A-11 and discussed below with explanations and restatements, as appropriate.

a. ATC SQL Coding

On Opening, DuPont developed and implemented complex procedures to manipulate raw NS traffic and revenue data to develop ATC percentages used to calculate the DRR portion of revenues for cross-over traffic that was included in the DRR traffic group. These complex procedures, as well as a description of the multiple problems DuPont encountered with the NS-

[51] It is important to note that the absolute size of the impact of any particular change is dependent on the order in which it is applied

provided electronic data, were outlined in detail in the text of the Opening evidence and in the supporting Exhibits III-A-2 and III-A-3 and related e-workpapers. In general, DuPont's complex procedures were required to meet the Board's evidentiary standards for the calculation of variable and fixed costs based on the actual historical movement of NS traffic included in the DRR traffic group over the hypothetical on-SARR and off-SARR portions of the total route of movement. These variable and fixed cost calculations were then utilized to develop revenue percentages based on the Board's Average Total Cost ("ATC") methodology for cross-over revenue allocation.

On Reply, NS generally accepts DuPont's complex procedures for cross-over revenue allocation including DuPont's calculation of on-SARR mileages used to develop variable costs and DuPont's on-SARR and off-SARR mileages used to develop fixed costs [52] NS complained on Reply primarily about a single technical error in DuPont's calculation of off-SARR mileages used to develop variable costs for cross-over traffic

Specifically, NS states

> DuPont made technical errors that resulted in substantial understatement of off-SARR miles for cross-over traffic that in turn caused an over-allocation of cross-over traffic revenues to the DRR and under-allocation to the residual incumbent NS [53]
>
> ***
>
> Subtracting DRR miles from the understated total miles resulted in a consistent, substantial understatement of the miles of a cross-over movement handled by the residual incumbent These mileage errors ..skewed the revenue allocation calculations and resulted in over-allocation of cross over revenues to the DRR [54]
>
> ***

[52] On Reply, NS also objects to DuPont's use of Modified ATC instead of Original Average Total Cost ("Original ATC") methodology to create revenue divisions for cross-over traffic revenue allocation NS's Reply arguments in opposition to the use of Modified ATC are addressed in the next section of DuPont's Rebuttal evidence

[53] *See* NS Reply, p III-A-79

[54] *Id*, p III-A-80.

> Because the residual mileages are significantly understated and mileages are a primary input into URCS variable cost[s] calculations used to allocate revenues in ATC, the result of DuPont's mileage errors is a systematic under-allocation of cross-over traffic revenues to the residual NS [55]

DuPont agrees with NS's characterization of the technical error that resulted in the understatement of off-SARR mileages used in the variable cost calculations supporting ATC NS correctly notes that this technical error was caused by an improper filter included in the SQL coding for the shipment mileage algorithm. While DuPont agrees with NS's characterization of the technical error, DuPont disagrees with NS's approach on Reply to correct the technical error and on Rebuttal corrects this technical error within the context of the detailed procedures that were described by DuPont on Opening

i. NS's Technical Correction Is Inadequate

On Opening, DuPont utilized and described a fifteen (15) step process to develop detailed NS shipment routes, locations, and segment miles for each individual shipment included in the DRR traffic group [56] Rather than revise the SQL code used by DuPont on Opening and re-run the individual steps that are affected by the revised data, NS appears to have revised the SQL code and then modified DuPont's spreadsheets to by-pass other steps in the ATC process that were affected.

On Reply, NS states simply that it corrected "the off-SARR mileage algorithm."[57] That is the extent of NS's description of the steps and processes undertaken to correct the technical error.[58] NS's Reply evidence fails to explain whether it followed the DuPont methodology detailed on Opening or developed another methodology for Reply based on alternate assumptions, processes, short-cuts, and/or changed inputs/outputs. Without a description of

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[55] *Id*, p III-A-82
[56] *See* DuPont Opening e-workpaper "DUPONT_ATC_METHODOLOGY xlsx."
[57] *See* NS Reply, p. III-A-83
[58] NS also claims in a footnote that, on Reply, it changed flagged records for certain re-routed shipments.

NS's "correction" in the Reply text, DuPont searched for a description in NS's Reply e-workpapers. This search was fruitless. As a result, DuPont was forced to recreate or impute the process undertaken by NS to "correct" the technical error. This process required DuPont to painstakingly interpret, evaluate and analyze volumes of NS's e-workpapers and computer code to determine exactly what NS did to "correct" the technical error on Reply. The process of interpreting NS's e-workpapers to divine its intent without a description of the NS process was extremely time-consuming and was further complicated by the fact that most of NS's e-workpapers are not appropriately linked to other dependant files and/or are devoid of active formulae (because large portions of the spreadsheets were range-valued). The Board should reject NS's "correction" on this basis alone [59]

As a result of its extensive review of NS's e-workpapers, DuPont also identified a number of areas were NS's "correction" of the technical error is itself incorrect or deficient

First, NS improperly adjusted the mileage calculations used as inputs to the variable cost calculations to reflect the rerouted mileage of the route of movement and not the actual mileage of the route of movement [60] This change is incorrect as the Board requires that the allocation of NS revenues between the DRR and the residual NS be based on "the relative densities (and mileage) along the. .route actually used by the defendant carrier to move the traffic in question."[61] As a result of this error, all the variable costs and other amounts that are based on these improperly adjusted miles are incorrect in the NS Reply model.

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[59] *See General Procedures*, slip op p 4 "naming and linking conventions should be used by the parties that will permit the spreadsheets to operate on our computers We emphasize the importance of spreadsheet links being functional and documented "

[60] *See* NS Reply, p III-A-83 where NS states it "adjusted the mileages for re-routes (shifting miles from off-SARR to on-SARR) in the URCS input spreadsheets so that URCS would more accurately reflect the mileages over the DRR."

[61] *See WFA/Basin II*, p 15. Also see *WFA/Basin* (STB decision served June 3, 2009), p 1 where the Board notes that it " mistakenly calculated the revenues allocated to the SARR based on the costs and densities associated

Second, in addition to miscalculating the actual mileages, NS calculated "updated" DRR and non-DRR ton-miles in its Reply ATC model by implementing a formulaic short-cut based on the utilization of average DRR and non-DRR miles instead of summing the actual miles for each segment from NS's own data This short-cut was necessitated by the fact that NS chose not to re-run the specific steps outlined in DuPont's methodology DuPont's detailed methodology utilizes tons and miles for individual shipments and sums the results for these individual shipments The amounts calculated from DuPont's detailed methodology produce a more accurate and precise calculation of DRR and non-DRR ton-miles.

Third, NS calculated "corrected" fixed costs for DRR and non-DRR segments by implementing a formulaic short-cut based on the utilization of average fixed cost per ton mile instead of the actual fixed cost per ton and actual miles from NS's own data. The Board has previously rejected this approach [62]

Fourth, NS is critical of DuPont's claim on Opening that intermodal and auto traffic included in the DRR traffic group is not subject to a reroute between Bannon, OH and Kellysville, WV Specifically, NS claims that "DuPont flagged intermodal and auto traffic as rerouted in its ATC workpapers" [63] NS's claim is wrong and suggests that either NS is misleading the Board or NS simply does not understand the operation of DuPont's ATC model. Contrary to NS's claim, these records were flagged by DuPont because they were <u>eligible</u> for a reroute, not because they were actually rerouted in the ATC model.[64] If NS had bothered to review the detailed ATC methodology developed by DuPont or the "NOTES" column in the

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with the new SARR re-routings of those movements, not, as the Board intended, over the actual, historical routing."

[62] *See WFA/Basin*, p 13

[63] *See* NS Reply, p III-A-83 (note 71)

[64] *See* DuPont Opening e-workpaper "DuPont_ATC_METHODOLOGY.xlsx." This document notes at Step #10 that DuPont identified or flagged "cars/containers that <u>may</u> be rerouted internally to the DRR." (Emphasis added)

DuPont ATC model.[65] they would see that despite being eligible for a reroute, these particular shipments were not modified NS's claim that it changed the designation for these shipments on Reply is meaningless and has no impact on the ATC results presented by DuPont.

Finally, NS appears to have made a number of minor, non-mileage related adjustments to the URCS Phase III variable cost inputs seemingly to address the fact that NS produced incomplete electronic data in this proceeding On Reply, NS does not demonstrate that DuPont's methodology for developing data or applying average Modified-ATC percentages for selected movements is erroneous or inaccurate NS simply developed "corrected" average variable cost input values where waybill data for tons, miles and/or fixed costs were missing or for revenue empty shipments and delivered railcars with no lading. The Board is left to consider two sets of data that have been created from records where NS provided incomplete traffic data. Given the fact that NS failed to produce complete data and that NS did not demonstrate on Reply that the DuPont data was deficient in any way, the Board should accept DuPont's inputs. NS should not be rewarded in any way for not providing complete and accurate traffic data in this proceeding

None of NS's adjustments to the "corrected" mileage based calculations would have been necessary if NS simply chose to utilize the methodology developed by DuPont on Opening. In the case of NS's adjustments to the "corrected" non-mileage based calculations. NS has made no demonstration that DuPont's evidence is deficient or that NS's changes result in a better answer. Nowhere in its Reply does NS dispute the propriety of DuPont's ATC methodology. The NS calculations discussed above only serve to create "corrected" data that is inaccurate and inconsistent.

[65] *See* DuPont Opening e-workpaper "DRR_2010_TRAFFIC_ATC_OPENING_v1_041412 xlsx "

ii. DuPont's Technical Correction Is Consistent and Fully Supported

On Rebuttal, DuPont corrects the erroneous filter included in its SQL code and closely follows the appropriate steps it relied upon to develop all of the ATC inputs it utilized on Opening. DuPont rejects NS's cut-and-paste approach because it is not clearly articulated, incorrect in many respects, and unnecessary in other respects. As a result, the DuPont "corrected" results presented in Rebuttal are fully explained, consistent, accurate and the best evidence of record in this case

b. Modified ATC vs. Original ATC

On Opening, DuPont utilized Modified ATC which is the only version of ATC that has been used in a rate reasonableness decision since *Major Issues* to determine revenue divisions for DRR cross-over traffic.[66]

On Reply, NS claims that utilization of the Modified ATC formula is inappropriate and instead states that revenue divisions should be calculated based on the original version of ATC ("Original ATC" or "OATC") first proposed by the Board in *Major Issues* but never implemented in any rate case. NS devotes forty-one pages of its Reply testimony to issues concerning the utilization of the Original, Modified, and alternate approaches to making ATC calculations.[67] The dollar value associated with applying OATC in place of Modified ATC on the DRR traffic group is $341.8 million in 2010.[68]

NS s Reply evidence and conclusions are wrong for the following reasons:

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[66] *See WPA/Basin*, p 14, *AEP Texas*, pp 15-16, and, *WPA/Basin II*, p. 13.
[67] *See* NS Reply, pp. III-A-83-124
[68] *See* Table III-A-11, Line 3

i. NS Has Not Justified The Application Of Original ATC To This Case

NS dedicates a lengthy portion of its Reply to DuPont's use of Modified ATC to determine cross-over traffic revenue divisions [69] Despite its length, NS's evidence boils down to assertions that: (1) the Board improperly adopted Modified ATC in *WFA/Basin II*, and therefore, (2) the Board should apply the discredited Original ATC methodology it has never used in this proceeding.

On Rebuttal, DuPont continues to use Modified ATC because the Board itself has declared that to be its currently applicable methodology for allocating cross-over traffic revenue.

ii. It Would Be Arbitrary And Capricious For The Board To Apply The Discredited Original ATC Methodology

There can be no doubt that the Board itself considers Modified ATC to be the currently applicable methodology for allocating cross-over traffic revenue In *Ex Parte 715*,[70] the Board twice referred to its "current modified ATC approach" [underline added] Furthermore, the Board clearly has determined that Original ATC created "an illogical and unintended result,"[71] that was contrary to the fundamental ATC objective "to equitably distribute [cross-over] revenues in relation to the cost incurred to generate those revenues "[72] According to the Board, "[s]uch a result would plainly conflict with our express purpose to find a non-biased, cost-based method."[73]

iii. Modified ATC Is Superior To Both Original And Alternate ATC

The reason the Board switched from Original ATC to Modified ATC in *WFA/Basin* was because the Original ATC formula produced illogical results when viewed through the spectrum

[69] *See* NS Reply, pp III-A-83-124
[70] *See Ex Parte 715*, slip op p 18
[71] *See WFA/Basin II*, p 13
[72] *See Major Issues*, p 25.
[73] *See WFA/Basin*, p. 14, citing *Major Issues* at 32

of the incumbent's costs of providing service, i.e., divisions must at least cover the incumbent's variable cost before any contribution may be allocated. The Board's proposal of Alternate ATC will correct one of the critical flaws of Original ATC, but it will still produce illogical results in many instances

1) Modified ATC is Still Superior to Original ATC for the Reasons Articulated By The Board in WFA/Basin

The STB held in *Major Issues* that the goal in allocating revenue from cross-over traffic to the SARR segment and residual incumbent is to ensure that revenue is equitably distributed to the movement segments in relation to the cost incurred by the incumbent to move the traffic that generates the revenues. The STB found that consideration of the incumbent carrier's relative average variable and fixed costs (i.e., ATC) incurred to move a shipment for the on-SARR and off-SARR segments was necessary to achieve its stated goal Using ATC in the revenue division formula serves to capture the effect of the economies of density inherent in the railroad industry while also reflecting the diminishing incremental economies as density increases Pursuant to these considerations, the STB applied its ATC division methodology by multiplying the on-SARR ATC division percentage to the incumbent's total movement revenue to develop the amount of revenue allocated to the SARR. This approach subsequently became known as the Original ATC method

In *WFA/Basin*, the STB modified its formula to reflect a refined and expanded understanding of the practical effect Original ATC had when applied to real-world movements in SAC cases. The STB correctly acknowledged that a reasonable cross-over traffic revenue division methodology must not only capture economies of density, it must also satisfy other economic axioms, including a requirement to allocate revenues to the movement segments sufficient to cover all segments' variable costs of service before any segment receives any

contribution to fixed costs and profits. To this end, the STB modified its approach to correct for the flaws inherent in Original ATC The corrected, new approach, Modified ATC, is a two-step approach that first calculates the variable costs of service for the on-SARR and off-SARR portions of a cross-over movement, and then, after assuming each segment recovers its full or pro-rata portion of variable costs, allocates any contribution based on the average total costs for each portion of the move.[74]

The defendant railroad in *WFA/Basin*, the BNSF Railway Company ("BNSF"), argued against the Board's logical and practical changes to its Original ATC formula, largely on procedural grounds, but also offered theoretical arguments in support of the continued use of the demonstrably flawed formula As discussed below, the Modified ATC methodology that replaced Original ATC meets both of the Board's criteria where the Original ATC formula clearly fails in many regards.

In *Ex Parte 715*, the STB proposed a further modified formula that it believes may offer a reasonable middle ground in the theoretical discussion regarding the validity of the two previously discussed options The new alternate formula ("Alternate ATC") is based largely on an alternative BNSF proposed during the lengthy debate in the *WFA/Basin* proceeding. Although the new Alternate ATC formula is clearly superior to the Original ATC formula when applied to a narrow subset of railroad movements (i e., very low-rated traffic), it still incorporates most of the critical flaws of the Original ATC formula that make it biased and demonstrably inferior to the current Modified A TC standard used by the Board. Below we discuss the relative merits of the three formulas.

[74] *See WFA/Basin*, p. 14.

a) Original ATC's Critical Flaws

The STB originally proposed an ATC approach to cross-over revenue divisions because incorporating average total costs into the revenue division formula would help capture the economies of density that in major part define the railroad industry. The *Major Issues* decision inferred that the ATC divisions could be calculated by applying the ATC division percentage to a movement's total revenue Upon its first application of the formula to real world movements in a rate case, the STB was confronted with an obvious critical flaw inherent to the formula that it had failed to consider. The Original ATC approach produced illogical and biased results when applied to total revenue by allocating revenue to one segment that was insufficient to cover the segment's variable costs of service while allocating revenue to the other segment that not only covered the segment variable costs, but also provided additional revenues to defray fixed costs and contribute to profits

In fact, Original ATC served to overstate the amount of revenue in excess of variable costs ("contribution") on several movements. For example, assume a 1,000 mile movement with variable costs per ton of $10 and revenues of $11 per ton. This movement clearly contributes $1 per ton in excess of variable costs to help defray fixed costs and contribute to the profits of the incumbent Now assume the movement is split between two 500-mile segments, one over high-density lines and one over low-density lines. Assume Original ATC divided revenues such that the high-density segment was allocated $4.75 and the low-density segment was allocated $6.25 The high-density segment was allocated revenues insufficient to cover the railroad's variable costs ($5), while the low-density segment was allocated revenues sufficient to cover the railroad's variable costs ($5) and contribute $1.25 to defray fixed costs and provide profit The hypothetical contribution on the 500-mile low-density segment was assumed to be greater than the actual contribution on the entire 1,000 mile real-world movement.

To address this erroneous outcome, the STB developed the Modified ATC approach Such an approach is logical because it conforms to basic economic principles, while also reflecting the scale economies that exist in the railroad industry

It is axiomatic that for an operation to continue in the long-run, its revenues must recover its total cost of operations It is also axiomatic that in the short-run, an operation's revenue must cover its average variable cost of operations, or else the operation would be better-off shutting down.[75] This is because average variable costs by definition do not change with changes in production While total variable costs will increase with increases in output, average variable costs per unit will remain constant across certain output ranges.[76] If an operation is not recovering its variable costs from its revenues, it would lose less money by producing no products or services at all and absorbing only the loss associated with its fixed costs

From a revenue division stand-point, any revenue allocation approach must allow each segment to recover its variable costs of service before allowing another segment to make a contribution to fixed costs. Otherwise, the segment to which revenues were over allocated would be falsely reliant on assumed contributions to fixed costs that were in reality unavailable. Modified ATC meets this bedrock economic principle by assuring in the first step that a movement's revenue at least covers each segment's variable costs prior to allocating revenues in excess of variable costs to defray any segment's fixed costs or contribute to its profits

[75] *See, e g*, "Principles of Micro-Economics" Amacher, Ryan, C or any other introductory economics text

[76] This is particularly the case with ATC since the variable costs used are URCS Phase III costs, which are the same regardless of the line density of the movements being costed This point is shown by the fact that there are no density related inputs when developing variable costs using the URCS Phase III costing model Whether a movement occurs in the heart of the Powder River Basin Joint Line or on lightly traveled branch line, the URCS Phase III model will produce the same variable costs for movements on high-density and low-density segments, holding all other factors constant.

b) Alternate ATC's Shortcomings

The Board's proposed Alternate ATC formula would partially correct the illogical results of applying the Original ATC formula in the example above because it would ensure that both segments were allocated revenues sufficient to cover their respective variable costs. However, Alternate ATC would allocate all of the contribution that is spread over the entire movement in the real world to only a portion of the movement. This result is also illogical, albeit less glaring. The problems with the Alternate ATC formula become much more evident when it is evaluated with respect to its application to a wide spectrum of representative moves.

Both Original and Alternate ATC produce absurd results by making low density lines more profitable on a per ton basis than high density lines. In contrast, Modified ATC produces reasonable results that reflect basic economic principles. Modified ATC appropriately considers economies of density, but Original and Alternate ATC serve to systematically restrict high-density lines from the benefits of economies of density Scale economies provide systems that enjoy them with greater profitability per unit than those that do not Similarly, within a system, scale economies are not universal across all operations. For freight railroads, the greatest per-unit profitability on a movement is enjoyed on the highest density segments, all else being equal Assuming equal revenues, a 100-mile unit coal train movement over a high-density line is more profitable than the same 100-mile unit coal train movement over a low-density line. specifically because less of the revenues on the high-density line are needed to defray joint and common costs This fundamental principle is the very incentive railroads have to invest their capital strategically to maximize utility and by extension, scale economies. Application of Original and Alternate ATC strips the benefits of scale economies from high-density lines and reallocates them to low-density lines

Economies of density reflect how per-unit profits for a network of a given size initially increase with increases in output. Railroads strategically invest to accommodate growth on high-density lines to leverage scale economies and *maximize profit on the traffic moving over those lines* Original and Alternate ATC transfer the profitability associated with traffic moving on high-density lines to traffic moving on low-density lines, in effect robbing the high-density lines of the very scale economies that incented the railroads to invest in capacity enhancements on those high-density lines in the first place.

High-density lines *are* more profitable on a per-unit basis than low-density lines. A revenue allocation methodology should reflect that fundamental economic principle. In a hypothetical example, the Alternate ATC allocation would be as follows:

- A 1,000-mile movement is split between a 500-mile segment over a 50-million-ton line and a 500-mile segment over a 25-million-ton line.
- The variable costs for each 500-mile segment are $5 00 per ton.
- The fixed costs are $1.25 per ton for the high-density segment and $2.50 per ton for the low-density segment
- The total costs are ($5.00 x 2) + $1 25 + $2.50, or $13 75 per ton.
- The rate for the movement is $15.00 per ton.
- Under Original and Alternate ATC, the high-density segment revenue allocation is $6 25/$13.75, or 45.5%.
- When applied to the movement revenue ($15.00), the resulting high-density segment revenues are $6 82 per ton
- The high-density segment profit per ton is $6 82-$6.25, or $0 57 per ton.
- The revenues allocated to the low-density segment are $8 18 per ton.
- The low-density segment profit is $8 18-$7 50, or $0.68 per ton.

The move on the low-density segment is therefore more profitable, after total costs are subtracted, than the move on the high-density segment This is an economically illogical result

Under Modified ATC, the allocation would be as follows.

- $5 00 is allocated to both the high-density and low-density segments to cover the variable costs of service of both segments
- The remaining $5.00 in revenue is allocated based on the percentage calculated above, 45.5% to the high-density segment and 54 5% to the low-density segment
- The high-density segment receives $5 00 + (.455 x $5.00), or $7 27 per ton.

- The high-density segment profit on the move is $7 27-$6.25, or $1.02 per ton.
- The low-density segment receives $5.00 + (.545 x $5.00). or $7 73 per ton.
- The low-density segment profit is $7 73-$7.50, or $0 23 per ton.

The move on the high-density segment is therefore more profitable. *after total costs are subtracted*, than the move on the low-density segment. This is an economically logical result.

Original and Alternate ATC produce per-unit profits that do not comport with actual railroad economics. The problem is even more evident when a relatively high-rated move is evaluated. Table III-A-12 below assesses the impact of applying Original ATC to a move with a revenue-to-variable cost ratio ("R/VC") of 2.20.

Table III-A-12
Comparison of Revenue Division
Methodologies - Movement R/VC = 2.20

Item	Original and Alternate ATC	Modified ATC
(1)	(2)	(3)
1. Rate per Ton	$22 00	$22.00
2. High-Density Segment Total Costs per ton	$6 25	$6.25
3 Low-Density Segment Total Costs	$7 50	$7 50
4. High-Density Segment Division	$10 00	$10.45
5 Low-Density Segment Division	$12 00	$11 55
6 High-Density Segment Profit	$3.75	$4 20
7 Low-Density Segment Profit	$4.50	$4 05
8 Result	Illogical	Logical

As Table III-A-12 above indicates, Original and Alternate ATC produce even more biased results on high revenue movements.

Finally, as a reminder of the reason why the STB properly introduced Modified ATC in the first place, it is helpful to consider a move with an R/VC of 1.00, as depicted in Table III-A-13 below.

Table III-A-13
Comparison of Revenue Division
Methodologies - Movement R/VC = 1.00

Item	Original ATC	Modified and Alternate ATC
(1)	(2)	(3)
1. Revenue	$10.00	$10.00
2. High-Density Segment Total Costs	$6 25	$6 25
3. Low-Density Segment Total Costs	$7 50	$7 50
4 High-Density Segment Division	$4 55	$5 00
5. Low-Density Segment Division	$5.45	$5 00
6 High-Density Segment Profit	($0 45)	$0.00
7. Low-Density Segment Profit	$0 45	$0 00
8. Result	Antithetical to rate-setting procedures· SARR does not recover incremental costs, Residual Incumbent recovers incremental costs and contribution to joint and common costs	Reflective of rate-setting procedures. SARR and Residual Incumbent recover incremental costs, no contribution to joint and common costs for either entity

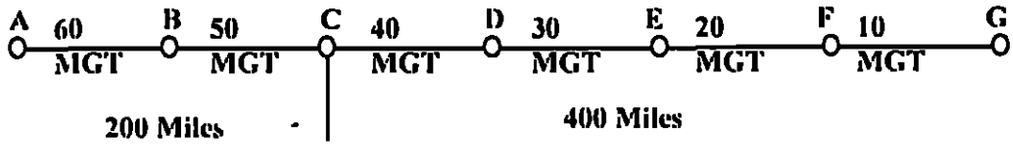
In each of the examples above (R/VC=1.00 and R/VC=2.20), it is clear that Original ATC allocates far too much revenue to the low-density segment, making the low-density more profitable on a per-unit basis after all costs (variable and fixed) are covered for movements where revenues are greater than total costs, and turning the high-density segment into a money loser (allocated revenues are less than variable costs) while allocating variable costs plus contribution to the low-density segment on movements where revenues are less than total costs. Alternate ATC only corrects the most glaring problem on the movement where R/VC = 1.0, but it incorporates the critical flaws inherent to Original ATC when allocating revenues on movements with R/VC greater than 1.0.

2) Alternate ATC Artificially Caps R/VC Ratios on High-Density Rail Segments

The newly-proposed Alternate ATC will not fairly allocate incumbent revenues between incumbent segments, but rather it will cap high-density segment revenues at levels well below the market rates the incumbent earns on the traffic In Table III-A-14 below, we examine the

allocation of revenues to high- and low-density line segments on a hypothetical system The system consists of a 200-mile high-density segment and a 400-mile low-density segment The system becomes ever lower in density in a graduated manner at 100-mile increments as it moves away from the high-density segment. Figure 7 below depicts the system described above

Figure 7



Fixed costs for the system are assumed to equal $125,000 per route mile over the entire system, and variable costs for the traffic on the system are assumed to equal $0.01 per ton-mile per 100 miles. All traffic is assumed to originate at point A and flow towards point G. with 10 million gross tons terminating at the other six points on the network.

We evaluate the impact of applying Original, Alternate. and Modified ATC to all of the traffic that moves over both portions of the system under three hypothetical scenarios where movement revenues are assumed to equal. (1) 100% of variable costs. (2) 100% of total costs, and (3) 125% of total costs

Table III-A-14
Demonstration of Problems with Original and Alternate ATC Allocations at Various Revenue Levels

Item (1)	High-density segment Portion of Total Costs (2)	% Original ATC Revenue (3)	% Modified and Alternate ATC Revenue (4)	Total Movement R/VC (5)	Original ATC High-density segment R/VC (6)	Original ATC Low-density segment R/VC (7)	Modified and Alternate ATC High-density segment R/VC (8)	Modified And Alternate ATC Low-density segment R/VC (9)
				Revenues = Variable Costs				
1. Moves A-D	65%	65%	67%	100%	98%	104%	100%	100%
2. Moves A-E	47%	47%	50%	100%	95%	105%	100%	100%
3. Moves A-F	36%	36%	40%	100%	90%	107%	100%	100%
4. Moves A-G	27%	27%	33%	100%	81%	109%	100%	100%
Item (1)	High-density segment Portion of Total Costs (2)	% Original and Alternate ATC Revenue (3)	% Modified ATC Revenue (4)	Total Movement R/VC (5)	Original and Alternate ATC High-density segment R/VC (6)	Original and Alternate ATC Low-density segment R/VC (7)	Modified ATC High-density segment R/VC (8)	Modified ATC Low-density segment R/VC (9)
				Revenues = Total Costs				
5. Moves A-D	65%	65%	66%	126%	123%	131%	125%	127%
6. Moves A-E	47%	47%	49%	130%	123%	136%	128%	131%
7. Moves A-F	36%	36%	39%	136%	123%	145%	133%	139%
8. Moves A-G	27%	27%	31%	151%	123%	165%	142%	156%
Item (1)	High-density segment Portion of Total Costs (2)	% Original and Alternate ATC Revenue (3)	% Modified ATC Revenue (4)	Total Movement R/VC (5)	Original and Alternate ATC High-density segment R/VC (6)	Original and Alternate ATC Low-density segment R/VC (7)	Modified ATC High-density segment R/VC (8)	Modified ATC Low-density segment R/VC (9)
				Revenues = 125% of Total Costs				
9. Moves A-D	65%	65%	66%	157%	154%	164%	156%	160%
10. Moves A-E	47%	47%	49%	162%	154%	171%	159%	165%
11. Moves A-F	36%	36%	38%	170%	154%	181%	163%	175%
12. Moves A-G	27%	27%	30%	189%	154%	206%	172%	197%

As shown in Table III-A-14 above, substantial problems arise when Original and Alternate ATC are applied in most situations. First, in the system where revenues equal variable

costs for all movements (Line 1 through Line 4), Original ATC clearly under-allocates revenue to the high-density segment, as the segment is allocated less than its variable costs while the low-density segment is allocated its full variable costs plus some contribution to joint and common costs *that in the real world does not exist*. This is precisely the reason why the STB instituted Modified ATC in the first place.

Second, in the system where revenues equal 100% of total costs for all movements (Line 5 through Line 8), Original and Alternate ATC results are clearly nonsensical. Under this scenario, the R/VC ratios for the full movements increase steadily as the movements increase in length (fixed costs account for a larger portion of total costs). However, under Original and Alternate ATC, the high-density segment R/VC is capped at a level well below the total movement R/VC while the low-density segment R/VC increases at a far greater rate than the rate at which the overall R/VC increases. The trend is even more pronounced on a system where revenues equal 125% of total costs for all movements (Line 9 through Line 12) The application of Original and Alternate ATC clearly has the effect of restricting the high-density segment from access to real-world high-R/VC movements, and improperly diverting the revenues on those movements to low-density segments

On Rebuttal, DuPont rejects NS's suggestion that OATC should be used to develop revenue divisions for cross-over traffic and continues to rely upon the only reasonable allocation methodology available, i e , Modified ATC.[77]

[77] DuPont previously provided the Board with cross-over revenue divisions for its Opening Evidence using three ATC variants (Modified, *Ex Parte 715* Alternate, and Original). *See* "Reply of E.I. du Pont de Nemours and Company to Norfolk Southern Railway Company's Motion to Hold Case in Abeyance Pending Completion of Rulemaking," pp 30-31 (filed August 27, 2012) DuPont also is providing this information for Modified and *Ex Parte 715* Alternate ATC with its Rebuttal Evidence *See* DuPont Rebuttal e-workpaper "DRR_2010_TRAFFIC_ATC_REBUTTAL_v3 xlsx "

c. TCS/TDIS Revenue Adjustments

As discussed in Opening, the NS revenue waybill data does not include all rail-related revenues associated with the movement of intermodal traffic of its Triple Crown Services ("TCS") and Thoroughbred Direct Intermodal Services ("TDIS") subsidiaries. Therefore, DuPont was left to develop accurate movement revenues for these shipments from other materials and data provided by NS in response to DuPont's discovery requests. DuPont calculated what it reasonably assumed to be net rail revenue for TCS and TDIS shipments, excluding revenue associated with activities it reasonably assumed were trucking services from origin to intermodal facilities, lifts, and trucking services from intermodal facilities to final destination based on information provided by NS in discovery DuPont then replaced (not supplemented)[78] the partial rail-related revenues included in the NS waybill data records with the restated rail-revenues NS actually earns on its TCS and TDIS traffic.

In Reply, NS rejects DuPont's revenue adjustment on TCS and TDIS movements and includes only the line-haul and train starts revenue TCS and TDIS transfer directly to NS to cover *the NS operating costs associated with moving the individual shipments*. The NS methodology completely disregards the lion's share of the TCS- and TDIS-generated revenues that NS reports on its books every year The NS's "Three-Card Monte" scheme must be rejected The value of this bogus adjustment is $142.1 million in 2010.[79]

According to NS

> Although TCS and TDIS technically are subsidiaries of NS, they function as customers of NS that purchase rail transportation services from NS. The revenue the DRR would obtain by 'stepping into NS's shoes' would be the line-haul revenue NS collects for the rail segments of those intermodal movements. However, rather than treating TCS and TDIS as customers of NS and accepting revenues that TCS and TDIS pay to NS, DuPont replaced the

[78] *See* DuPont Rebuttal Exhibit III-A-2, lines 10-14.
[79] *See* Table III-A-11, Line 4

> revenue NS collects from these customers (i e , the line-haul revenue) with the total revenue collected by TCS and TDIS for the various services they provide to third parties (including, for example, trucking services from the origin to the intermodal facility, revenues for rail line-haul services provided by NS as well as carriers other than NS, intermodal lifts, trucking services from the intermodal facility to the final destination, etc)[80]

NS's language is intentionally misleading and wrong on many counts. DuPont did not simply replace the NS line-haul revenues collected on the moves with the "total revenue collected by TCS and TDIS for the various services they provide to third parties." DuPont very clearly explained the procedures it used to reduce the TCS and TDIS total revenues to net out all costs associated with the following 10 separately identified drayage activities as indicated in NS's provided work papers.

1.	DRAY_ORIG_LD
2	DRAY_ORIG_LDF
3	DRAY_ORIG_MT
4.	DRAY_ORIG_MTF
5	DRAY_DEST_LD
6.	DRAY_DEST_LDF
7.	DRAY_DEST_MT
8.	DRAY_DEST_MTF
9.	DRAY_OTR
10.	DRAY_OTRF

To better understand the scope of the adjustment DuPont made to TCS/TDIS gross revenues to account for costs incurred by TCS/TDIS, TCS/TDIS gross revenues for 2010 were $375 5 million,[81] "drayage" costs were $107 9 million,[82] and the revenues less drayage costs DuPont calculated and applied to the TCS/TDIS shipments were $267 6 million ($375.5-$107 9) [83] DuPont therefore reduced TCS/TDIS total revenues by 29 percent before applying them to the NS moves. NS's claim that DuPont "replaced the revenue NS collects from these

[80] *See* NS Reply, p. III-A-61.
[81] *See* DuPont Rebuttal Exhibit III-A-2, line 8
[82] *See* DuPont Rebuttal Exhibit III-A-2, line 9
[83] *See* DuPont Rebuttal Exhibit III-A-2, line 10

customers with the total revenue collected by TCS and TDIS for the various services they provide to third parties" is a fabrication

As part of the discovery process, DuPont specifically requested that NS define the 10 above-listed "DRAY" data fields and provide descriptions as to the contents of each field On September 30, 2011, NS responded to DuPont's requests by stating, in pertinent part, "Most of the column headings should be self-explanatory. NS is providing the following definitions of columns that may be unclear: OTR = over the road "[84] Based on NS's cryptic data field headers and its refusal to provide detailed descriptions when asked, it was totally reasonable for DuPont to presume that the "DRAY" fields included costs associated with the very activities that NS claims DuPont did not factor into its revenue adjustments. Specifically, DuPont reasonably associated the fields listed above with "trucking services from the origin to the intermodal facility,. intermodal lifts, trucking services from the intermodal facility to the final destination, etc."

In a related portion of NS's Reply Evidence, NS is critical of DuPont's intermodal revenue adjustment which is based on the intermodal revenues included in NS's quarterly reports. Specifically, NS claims that, in developing its revenue forecast, DuPont relied on "a different and incorrect data source for 2010 NS rail revenues... gross intermodal revenue data reported in a NS Quarterly Financial Review . which was prepared for different purposes and reports different data [than the traffic data provided by NS in discovery]."[85] NS apparently believes DuPont should only be allowed access to revenue reported in its line-haul revenue field in its traffic database, and not to the entire revenue stream associated with the traffic.

[84] *See* September 30 letter from Matthew Warren to Jason Tutrone, pp 10-11, included as Opening e-workpaper "September 30 Letter.pdf."
[85] *See* NS Reply, pp. III-A-67-68

As shown in Rebuttal Exhibit III-A-2, NS is attempting to use an accounting device to restrict DuPont's access to NS revenues. The revenues identified as "NS Railway Operating Revenues" reported in both NS's Annual Report, Form R-1 to the STB and NS's 10-K report to the SEC for 2010 equal $9,516 million.[86] Of those total revenues, the revenues identified in both official reports as "NS Intermodal Operating Revenues" equal $1,796 million for 2010.[87]

In Reply, NS asserts that DuPont should only be allowed access to the portion of those total NS Operating revenues that is captured in the traffic data NS provided in this case. As shown in NS's Reply work papers, these revenues equal $1,440 million in 2010.[88] NS freely admits that TCS and TDIS are subsidiaries of NS, and NS's financial reports to the SEC, the STB, and its shareholders clearly include revenues generated by its TCS and TDIS subsidiaries as "NS Railway Operating Revenues." The TCS/TDIS reporting and operating status is clearly delineated in the NS R-1 Report. Specifically, at page 2 of the 2011 NS R-1, the reporting carrier is reported as "Norfolk Southern Combined Railroad Subsidiaries* (NS Rail) is comprised principally of Norfolk Southern Railway Consolidated." The asterisk notation reads: "See note on Page 4 'Principles of Combined Reporting' " A list appears at page 4 of the R-1 Report with the following header: "The following companies are included in the combined rail reporting to the Surface Transportation Board." The list includes "Thoroughbred Direct Intermodal Services, Inc." and "Triple Crown Services Company."[89] To be clear, this means that TCS and TDIS revenues are "included in the combined [NS] rail reporting to the Surface Transportation Board." However, when it is time for DRR to "step into NS's shoes" for purposes of developing SAC evidence, NS claims that DRR should not be allowed access to the

[86] *See* DuPont Rebuttal Exhibit III-A-2, lines 1 and 2.
[87] *See* e-workpaper "NS Revenue Reporting 2010.pdf." *See* also DuPont Rebuttal Exhibit III-A-2, line 3.
[88] *See* DuPont Rebuttal Exhibit III-A-2, line 4.
[89] *See* e-workpaper "TCS TDIS R-1 Status pdf"

very same TCS/TDIS revenues (in excess of $300 million) that NS claims in its own financial reports NS adjustments are self-serving and incorrect

NS also claims that:

> [W]ith the exception of drayage costs, DuPont's SAC evidence does not assume the costs of facilities, equipment, personnel, materials, and other expenses necessary to provide the services required to earn the revenues earned by TCS and TDIS. DuPont failed to include large operating costs that TCS and TDIS incur each year in order to provide non-rail line-haul services. The accounts payable files NS produced in discovery show that TCS paid out over {[redacted]} million in 2010 and TDIS paid {[redacted]} million in 2010.[90]

The accounts payable files provided by NS include only entity names to which payments were made in 2010. The actual entity is not always clear from review of the entity names What is clear is that many of the payments included in the accounts payable files are to trucking companies and terminal operators. Because NS refused to provide detailed descriptions of the nature of the "DRAY" costs included in the TCS and TDIS revenue data files it provided, DuPont logically and correctly assumed that many of the payments reflected in the accounts payable files are duplicative of the "DRAY" costs included in the TCS and TDIS revenue files. NS cannot refuse to sufficiently describe the contents of its provided data files (disingenuously claiming that the cryptic headers should be "self-explanatory") and then criticize DuPont for not completely understanding the precise nature of the data therein.

In light of DuPont's review of the more complete picture NS painted in Reply regarding its provided data, DuPont has adjusted its TCS and TDIS net revenues calculation in Rebuttal appropriately Specifically, in addition to the $107.9 million in drayage costs DuPont initially netted out of the TCS/TDIS total revenues on Opening, DuPont has further adjusted the

[90] *See* NS Reply, p. III-A-62.

TCS/TDIS revenues down by another $83 6 million to account for other cost items identified by NS for the first time on Reply.[91]

As shown in Rebuttal Exhibit III-A-2, DuPont's Opening Evidence inadvertently overstated TCS/TDIS intermodal revenues by 20 percent due to NS's failure to provide adequate support for its data.[92] In contrast, NS Reply Evidence intentionally understated TCS/TDIS intermodal revenue by 134 percent simply as a contrived way to limit DRR's access to revenues NS elsewhere reports as "NS Intermodal Railway Operating Revenues" in its accounting documents.[93] In Rebuttal, DuPont has adjusted its calculation of TCS/TDIS revenues downward to account for the small, inadvertent overstatement reflected in its Opening calculation that resulted from NS's refusal to provide sufficient detail regarding the nature of the TCS/TDIS revenue and cost data NS provided in discovery. Rebuttal Exhibit III-A-3 shows a comparison of DuPont's Opening, NS's Reply and DuPont's Rebuttal calculations of NS revenues on TCS moves Rebuttal Exhibit III-A-3 demonstrates that the revenues NS earns on TCS movements are dramatically understated in NS's Reply DuPont's Rebuttal restatement of revenues NS earns on TCS movements has been adjusted to remove the revenues associated with TCS moves over non-NS segments and to account for non-drayage-related expenses identified by NS in Reply DuPont's Rebuttal TCS revenues are also shown in Rebuttal Exhibit III-A-3

d. Handling Line Payments

DuPont explained in great detail on Opening the challenges it encountered interpreting and utilizing the many disparate sources of data provided by NS in discovery.[91] One of the issues encountered was the utilization of an undefined date range to link NS car and waybill

[91] *See* DuPont Rebuttal Exhibit III-A-2, line 13 minus line 24.
[92] *See* DuPont Rebuttal Exhibit III-A-2, line 25
[93] *See* DuPont Rebuttal Exhibit III-A-2, line 27
[94] *See* DuPont Opening Exhibits III-A-2, III-A-3, and III-C-2.

records to other provided data tables for the purpose of identifying NS payments to handling line and switching carriers. In Opening, DuPont relied upon a process of linking waybill and handling line data records based on specific waybill and interchange dates to develop handling line charges for individual shipments. In Reply, NS linked handling line records to NS waybill records using a never-before specified and still undocumented date range of (-1) to (+30) days. The value of the differing approach to identify handling line payments in 2010 is $73 3 million.[95]

NS's data production included insufficient data to make reliable links between critical data sets and the scant file linking instructions that were provided were often vague or completely erroneous Therefore, NS's statement that "DuPont acknowledged in its Opening Evidence that NS's instructions that accompanied its production of the relevant records and data expressly advised that a date range must be used in the matching process [and that] despite this acknowledgement, DuPont made no effort to actually use a date range," must be taken with a grain of salt Rather than hash out all of the obstacles NS's production tactics forced DuPont to overcome, DuPont refers the Board to DuPont Opening Exhibit III-A-2. It is notable that NS scarcely mentions the exhibit in question in its III-A narrative, and where it does attempt to address the ten (10) separate data production deficiencies DuPont was forced to overcome in developing its Opening Evidence,[96] NS glosses over the fact that its data linking instructions were so often erroneous, incomplete, and/or vague Rather, NS essentially states that, because DuPont was able to successfully cobble together functioning links in most cases despite the lack of sufficient information from NS, it should not be afforded the right to point out those deficiencies it was forced to overcome.

[95] *See* Table III-A-11, Line 5.
[96] *See* NS Reply Exhibit III-C-7

Regardless of these challenges, it is critical to frame the data linking issue relative to the scope of its impact on the NS net revenue calculations. NS's linking methodology resulted in a net reduction of approximately $66 million in total revenues on the entire system. This amounts to less than one percent of the $11,172 million in NS total railway operating revenues for the associated traffic. Furthermore, while NS uses its new linking procedures to reduce the revenues available to the SARR on movements over lines to which handling line payments were made in 2010, in many cases NS actually reroutes this traffic away from the handling line in question in developing its alternate operating plan for the DRR traffic. This creates a disconnect between the net revenues NS calculates for a movement and the operating plan NS develops to move this traffic. An example can be seen in the movement discussed earlier in this section that moves in the real world (and in the DuPont-posited DRR) over the NBER and WNYP between Mapleton, PA and Geneva, NY. For this move, NS makes a handling line payment to the NBER for services it performs on NS's behalf en route. However, in its operating plan, NS routes this traffic away from NBER and over a circuitous NS-only route via Ohio and Lake Erie. Therefore, NS nets out a payment to a foreign road for a service that is never required or performed under its operating plan.

Although NS's methodology utilizes a range of one day before the waybill date (-1) through 30 days after the waybill date (+30), it completely fails to demonstrate in any way that NS's provided linking instructions were complete and reliable. In fact, it underscores the vague nature of the provided instructions. By NS's own admission, it used an arbitrary date range of 31 days in its so-called "corrected" approach on Reply. NS also freely admits that "a wider range of dates would have captured additional records." These admissions simply serve to underscore the fact that NS <u>still</u> has not provided detailed and reliable means by which to definitively link the

data files it provided in response to DuPont's data production and follow-up requests DuPont's methodology does not represent a complete matching process specifically because there is no way to efficiently link the provided data sets For example, NS states that, "even when the handling by another carrier takes place at the origination of the movement, the interchange date is sometimes recorded a few days before or after the waybill date."[97] NS also states that its "correct" linking procedures used a date range "one day before the waybill date through 30 days after the waybill date "[98] NS cannot now, nor could it ever, claim that the linking procedures required to link its provided data sets has been clearly defined, much less implemented by either party.

In addition, NS's admission that its so-called "corrected" linking procedures are arbitrary and incomplete raises serious concern that NS may have held out on the data keys and linking procedures it uses in the normal course of business to track movements and associated revenue adjustments. It is difficult to believe in this day and age that NS does not have the ability to precisely link all of its revenue movements with their revenue adjustments in its internal data system.

Despite the fact that NS's linking procedures are no less arbitrary than those used by DuPont in developing its Opening Evidence, DuPont accepts NS's adjustment and its minor impact on the DRR net revenues in its Rebuttal.

e. Non-NS TCS Traffic

On Opening, DuPont included revenues for all TCS movements included in the waybill data provided by NS in its revenue calculations NS claims that DuPont included traffic actually

[97] *See* NS Reply, p III-A-74
[98] *See* NS Reply, p III-A-75

moved by other rail carriers and therefore eliminates this portion of the DRR revenues.[99] DuPont accepts NS's clarification of this traffic and removes these revenues on Rebuttal. The value of this difference is $37.5 million in 2010.[100]

However, NS's characterization of the movements in question is neither totally forthcoming nor technically correct. For TCS movements that originate on a non-NS railroad, the NS waybill data contains two separate waybill records with two separate waybill numbers and with different origin stations (the movement origin and the NS origin station) but the same terminating station (on the NS system). As NS points out in its Reply, the waybill records associated with the non-NS segment do not have any NS line-haul revenues reported in the waybill database. Therefore, it is telling that these non-revenue records are present in the NS waybill data at all, particularly as it relates to the preceding discussion on the revenue adjustments required for TCS/TDIS movements.

f. Switching Payments

NS's position regarding DuPont's calculation of switching payments is the same as its position regarding handling line payments. That is, DuPont utilized incomplete linking procedures.[101] All comments above relating to "handling line payments" apply to switching payments, except NS's switching adjustment has an even smaller impact on the answer than its handling line adjustment. NS's adjustment to switching payments reduces DRR revenues by $21.1 million in 2010.[102]

Furthermore, DuPont used similar linking procedures to link the revenue waybill data to three revenue adjustment files in Opening. They are: (1) NS handling line data, (2) NS switching

[99] *See* NS Reply, pp. III-A-61-68
[100] *See* Table III-A-11, Line 6
[101] *See* NS Reply, pp. III-A-76-77
[102] *See* Table III-A-11, Line 7.

data, and (3) NS haulage receivables data. Application of the first two revenue adjustments to the NS revenue waybill data result in net reductions in revenues, while application of the third revenue adjustment to the NS revenue waybill data results in net increases in revenues It is notable that, in Reply, NS "corrected" only the linking procedures for the two revenue adjustment files whose application results in net revenue reductions and did not make a similar "correction" to the linking procedures for the other revenue adjustment whose application results in offsetting net revenue increases It is clear that NS's motivation was not to "correct" any technical items in order to facilitate "correct" linking, but rather to selectively implement only those "corrections" that resulted in the most favorable result to NS

g. Rebuttal Restatement

As discussed above, DuPont has accepted some of NS's changes to DuPont's 2010 DRR revenue calculations and rejected others. Table III-A-15 below summarizes DuPont's position on Rebuttal.

Table III-A-15
DuPont Opening, NS Reply and
DuPont Rebuttal DRR Revenues – 2010
($ in millions)

	Item	DuPont's Position	Amount[1/]
	(1)	(2)	(3)
1	DuPont Opening – 2010 DRR Revenues	xxx	$6,642.8
2.	ATC SQL Coding	Accepted	$415 8
3.	Application of Original ATC in place of Modified ATC	Rejected	$341 8
4	TCS/TDIS Revenue Adjustments	Partially Accepted	$142 1
5.	Handling Line Payments	Accepted	$73 3
6.	Non-NS TCS Traffic Segments	Accepted	$37 5
7	Switching Payments	Accepted	$21.1
8	NS Reply – 2010 DRR Revenues[2/]	xxx	$5,611.2
9	DuPont Rebuttal – 2010 DRR Revenues	xxx	$6,152 8
10.	Difference Between DuPont Rebuttal and NS Reply[3/]	xxx	$541 6

Source DuPont Rebuttal Table III-A-11 and e-workpaper "Traffic and Revenue Summary-Rebuttal xlsx."
[1/] The figures shown in this table represent the proportional impact of each item However, the adjustments proposed by NS are interdependent and have synergistic effects on one another If one or more changes are not implemented, or if the order in which the changes are implemented is changed, the dollar impact will change both in the aggregate and on a line-by-line basis
[2/] Line 1 – (∑ Line 2 – Line 7).
[3/] Line 9 – Line 8

DuPont's Rebuttal Evidence related to the 2010 DRR revenues equals $6,152.8 million as shown on Table III-A-15, Line 9.

4. Forecasted Revenues

Each of the traffic forecast issues, addressed in Part III-A-2 above, and the base year revenue issues, addressed in Part III-A-3 above, impact DRR's forecasted revenues. In addition, NS made two adjustments to the DuPont coal revenue calculations, challenged DuPont's calculation of TCS revenue growth from 2010 to 2011 and complained about DuPont's use of EIA data to forecast fuel surcharge revenue. Each of these impacts on revenues is discussed after Table III-A-16 below.

Table III-A-16 below compares DuPont's Opening and NS's Reply base and forecasted DRR revenues by year.

Table III-A-16
Comparison of DuPont Opening and NS Reply DRR Revenues
($ in Thousands)

Year	DuPont Opening[1/]	NS Reply[2/]	Difference Cols (2) – (3)
(1)	(2)	(3)	(4)
June 1 – Dec 31, 2009	$3,349,996	$2,851,673	$498,323
2010	6,642,808	5,611,230	1,031,578
2011	7,250,894	6,074,799	1,176,095
2012	8,092,559	6,561,640	1,530,919
2013	8,683,051	7,024,440	1,658,611
2014	9,511,506	7,444,642	2,066,864
2015	10,287,457	7,825,844	2,461,613
2016	11,264,723	8,352,982	2,911,740
2017	12,407,613	8,930,852	3,476,760
2018	13,496,876	9,547,353	3,949,523
Jan 1 – May 31, 2019	6,116,979	4,254,361	1,862,618

1/ DuPont Opening e-workpaper "Traffic and Revenue Summary xlsx "
2/ NS Reply e-workpaper "Traffic and Revenue Summary Reply.xlsx "

a. **Coal Revenue Calculations**

In Reply, NS made two adjustments to DuPont's coal revenue forecast calculations. First, NS updated the EIA Annual Energy Outlook ("AEO") transportation rate escalator that DuPont used to project increases in the 2016-2019 forecast periods with the EIA's "2012 Final Release." NS's second adjustment was to correct the fuel surcharge calculation for one (1) coal movement.

On Rebuttal, DuPont updates the indices to reflect the EIA's most recently available "2013 Early Release." In addition, DuPont accepts NS's correction to the contract fuel surcharge calculation.

In reviewing the fuel surcharge contract error identified by NS, DuPont identified ten (10) additional contracts affected by the same error. Table III-A-17 is a summary of the eleven (11) contracts affected by the fuel surcharge error along with the corresponding 2010 and 2011 fuel surcharge revenues included by DuPont and NS. The forecast year 2011 was used as an

example of the annual impact in fuel surcharge revenues resulting from the eleven identified contracts.

Table III-A-17
NS's Coal Contracts Impacted By Fuel Surcharge Error

	2010		2011		
Contract	DuPont Opening	NS Reply	DuPont Opening	NS Reply	DuPont Rebuttal
(1)	(2)	(3)	(4)	(5)	(6)
1 {{[redacted]}}	$10,525,490	$7,873,453	$63,268,682	$0	$10,690,005
2. {{[redacted]}}	50,375	33,018	0	0	62,354
3 {{[redacted]}}	895,787	794,334	0	0	1,179,084
4 {{[redacted]}}	490,166	366,650	0	0	544,601
5 {{[redacted]}}	468,517	458,378	0	0	642,563
6. {{[redacted]}}	3,137,374	3,091,617	0	0	4,342,718
7 {{[redacted]}}	1,610,327	1,138,198	0	0	1,789,523
8. {{[redacted]}}	2,892	2,277	0	0	5,311
9 {{[redacted]}}	4,135,842	2,944,067	0	0	4,380,755
10. {{[redacted]}}	14,108	9,172	0	0	31,481
11. {{[redacted]}}	14,757,297	12,413,011	0	0	18,344,836
Total	$36,088,175	$29,124,175	$63,268,682	$0	$42,013,232

Sources.
Columns (2) & (4) e-workpaper "Rebuttal Table 17 Support 2010 Coal 80-Chem 40-Auto 60-Open.xlsx."
Columns (3) & (5) e-workpaper "Rebuttal Table 17 Support 2010 Coal 80-Chem 10-Auto 60-Reply xlsx."
Column (6) e-workpaper "2010 Coal 80-Chem 10-Auto 60-REBUTTAL.xlsx "

The first contract shown in Table III-A-17 is the contract {{[redacted]}} identified by NS as having a fuel surcharge calculation error in 2011 and subsequent years [103] NS's solution to this problem was to eliminate the fuel surcharge revenues identified by DuPont in 2011 and subsequent years.

DuPont agreed that it made an input coding error for the contract identified by NS but disagreed that the annual fuel surcharge revenues should be zero for 2011 and subsequent years. Rather, DuPont corrected the coding error and included the correct amount of fuel surcharge revenues for this contract in 2011 (Column (6) above) and subsequent years.

[103] For the 2010 calculation of aggregate fuel surcharge revenues for this contract, DuPont and NS agree on the amount of fuel surcharge revenues. The difference between the Line 1, Column (2) and Column (3) revenues is a result of applying different ATC percentages to the aggregate revenues

While evaluating NS's identification of the fuel surcharge calculation error for contract {{[redacted]}}, DuPont identified coding errors in ten (10) other NS contracts included in its traffic group (Table III-A-17, line 2 through line 11). For 2010, DuPont and NS agree on the calculation of the aggregate fuel surcharge revenues for each of these contracts.[104] However, for 2011 and subsequent years, NS failed to correct the fuel surcharge coding error for these ten (10) contracts. In Rebuttal, DuPont corrects the fuel surcharge coding error for 2011 and subsequent years The impact of making this correction for 2011 for each of these contracts is shown in Table III-A-17, Column (6)

b. Development of 2011 TCS Revenue

NS claims that DuPont miscalculated TCS revenue growth for 2010 to 2011 by "using a different and incorrect data source for 2010 NS rail revenues."[105] In Opening, DuPont utilized NS's actual 2010 year end revenues and carloads from the NS Quarterly Financial Review to develop its TCS revenue-per-unit. DuPont then compared that value to the revenue-per-unit value for 2011 derived from NS's internal revenue forecast data to develop annual revenue growth rates However, on Reply NS explained that "NS's forecast projects only the [TCS] revenue that NS itself receives and does not include the revenues generated and collected by TCS for non-line-haul services."[106] Since the NS Quarterly Review captures all revenues for Intermodal and TCS, DuPont's Opening 2010 TCS revenue-per-unit is overstated and its 2011 revenues for the selected TCS traffic are understated. On Rebuttal, DuPont has accepted NS's Reply 2010 to 2011 intermodal revenues-per-unit as shown in Table III-A-18 below.

[104] Table III-A-17, Column (2) and Column (3) -- the difference between the Column (2) and Column (3) revenue is a result of DuPont and NS applying different ATC percentages to the aggregate revenues
[105] *See* NS Reply, p. III-A-67.
[106] *See* NS Reply, pp III-A-67-68

Table III-A-18
DuPont Opening, NS Reply and DuPont Rebuttal DRR
Intermodal Per Unit Revenues – 2010 and 2011

Year	DuPont Opening	NS Reply	DuPont Rebuttal
(1)	(2)	(3)	(4)
2010	$533	$430	$430
2011	$439	$439	$439
% Change 2011/2010	-17.6%	4 4%	4 4%

Source
Column (2): e-workpaper "DRR Traffic Revenue Forecast xlsx "
Column (3) e-workpaper "DRR Traffic Revenue Forecast - Reply xlsx "
Column (4). e-workpaper "DRR Traffic Revenue Forecast - Rebuttal xlsx "

c. Fuel Indices

NS's position is that:

> DuPont introduces a significant distortion into its SAC evidence by using two different indices to project changes in the price of diesel fuel. To minimize fuel *costs*, DuPont used an index that predicts that the price of diesel fuel will be flat or decreasing over the relevant time period. But to maximize DRR fuel surcharge ***revenues***, DuPont uses an index that predicts that the price of that very same diesel fuel will increase significantly over the identical time period [107]

NS goes on to state that it "corrects DuPont's self-serving attempt to have it both ways" and that the Board "must not tolerate this transparent attempt to game the SAC analysis."[108]

While NS admits that both the indices and the procedures used by DuPont in Opening to develop fuel costs and fuel surcharge revenue were adopted by the Board in *AEPCO*, it also states that the issue of "the mismatch" between the two indices was never addressed This NS "so-called" mismatch was not addressed in *AEPCO* because it did not exist. What NS is trying to sell is that the change in operating "cost" associated with burning railroad diesel fuel in locomotives is the same as EIA's projected change in the "price" of intermediate crude oil at trading hubs that is used as a surrogate benchmark in NS's fuel surcharge mechanism. The cost

[107] *See* NS Reply, p. III-A-69
[108] *See* NS Reply, pp III-A-69-71.

of fuel measures not only the acquisition price of fuel but also how efficiently that fuel is used to transport products The "price" of fuel only measures the price per gallon or barrel to purchase fuel at an intermediate point in the supply chain. Price does not equal cost Furthermore, the same "mismatch" NS accuses DuPont of exploiting in its SAC analysis actually does exist and is exploited by NS in the real-world on a daily basis. The DRR is merely stepping into NS's shoes and applying NS's actual fuel surcharge program parameters to the DRR movements.

i. Fuel "Cost" Index

In forecasting the cost of fuel to develop stand-alone operating costs which is discussed later in DuPont's Rebuttal, NS and DuPont both use Global Insight's RCAF Fuel component forecast to develop fuel cost indices This approach is consistent with *AEPCO*.

ii. Fuel "Price" Index

In forecasting the price of fuel to develop fuel surcharge revenues, NS also utilizes the Global Insight Fuel component cost index forecast. By contrast, in Opening DuPont replicated NS's fuel surcharge program (NS Tariffs 8003 and 8004) and applied the EIA forecast of the WTI prices which is the benchmark of NS's fuel surcharge program Once again, DuPont is consistent with *AEPCO* and continues to employ these sound economic principles in forecasting fuel in Rebuttal.

Table III-A-19 below summarizes the fuel surcharge forecast percentages developed and used by DuPont in Opening and Rebuttal and NS in Reply. DuPont's Opening forecasts (Column (2)) were based on EIA's most current fuel price forecast available when Opening was filed. DuPont's Rebuttal fuel price forecasts (Column (4)) are based on EIA's current forecast available when Rebuttal is filed. By contrast, NS's Reply forecasts (Column (3)) represent Global Insight's fuel cost index forecasts

Table III-A-19
Summary of Fuel Surcharge Revenue Percentages

Year	DuPont Opening[1/]	NS Reply[2/]	DuPont Rebuttal[3/]
(1)	(2)	(3)	(4)
2011	5 7%	5.7%	5.7%
2012	9.5%	6.0%	5.7%
2013	9.5%	5 3%	4.6%
2014	12 7%	4 3%	5 3%
2015	15 8%	3 6%	6 0%
2016	17.9%	5.7%	7 4%
2017	20.0%	7 4%	9 9%
2018	21.4%	9 5%	11 6%
2019	22 8%	11 3%	13 4%

1/ Based on EIA Short Term Energy Outlook ("STEO") April 2012 and EIA AEO 2012 "Early Release "
2/ IHS Global Insight's Annual Fuel Component "Long-Term Railroad Cost Adjustment Factor Outlook" September 2012.
3/ Based on EIA STEO March 2013 and EIA AEO 2013 "Early Release "

DuPont continues to apply the fuel surcharge procedures and indices accepted in *AEPCO* and incorporates relevant actual EIA data and revised forecasts on Rebuttal.

d. Rebuttal Revenue

DuPont has accepted some of NS's changes to DuPont's DRR revenue calculations and rejected others. Table III-A-20 below summarizes DuPont's revenue position on Rebuttal and compares DuPont's Rebuttal revenues to those developed in NS's Reply and DuPont's Opening for each relevant time period

Table III-A-20
DuPont Opening, NS Reply and
DuPont Rebuttal DRR Revenues
($ in Thousands)

Year	DuPont Opening	NS Reply	DuPont Rebuttal	Difference Cols (4) – (3)
(1)	(2)	(3)	(4)	(5)
6/1 – 12/31/09	$3,349,996	$2,851,673	$3,109,690	$258,017
2010	6,642,808	5,611,230	6,152,779	541,549
2011	7,250,894	6,074,799	6,718,224	643,426
2012	8,092,559	6,561,640	7,238,075	676,435
2013	8,683,051	7,024,440	7,721,756	697,315
2014	9,511,506	7,444,642	8,349,743	905,101
2015	10,287,457	7,825,844	8,916,451	1,090,607
2016	11,264,723	8,352,982	9,713,198	1,360,216
2017	12,407,613	8,930,852	10,642,275	1,711,422
2018	13,496,876	9,547,353	11,660,519	2,113,165
1/1 – 5/31/19	6,116,979	4,254,361	5,320,078	1,065,717

Source:
Column (2): e-workpaper "Traffic and Revenue Summary xlsx "
Column (3) e-workpaper "Traffic and Revenue Summary Reply xlsx."
Column (4) e-workpaper "Traffic and Revenue Summary Rebuttal xlsx "

In Rebuttal, DuPont developed revenues that were between eight (8) percent and seventeen (17) percent per year lower than DuPont's Opening development of revenues. The reasons for this decline fall into two general categories. First, DuPont accepted and incorporated the impact of NS's valid criticisms. Second, the forecasts used to develop revenues were updated to reflect currently available forecasts These Rebuttal forecasts were considerably lower than the same forecasts DuPont used in Opening.

PART III-B

PUBLIC VERSION

Table of Contents

III. STAND-ALONE COST III-B-1

B. STAND-ALONE RAILROAD SYSTEM III-B-1

1 Routes and Mileage III-B-1

a Main Lines III-B-2

i. Partially Owned Lines III-B-2

ii Chicago, IL Extension III-B-3

iii. Additional Lead Track III-B-3

b. Branch Lines III-B-3

c. Rebuttal Route Miles III-B-3

2 Track Miles And Weight Of Track III-B-4

a. Main Line Track III-B-5

i Single Main III-B-5

ii Other Main III-B-5

b Branch Line Track III-B-6

c. Other III-B-6

i Helper Pocket and Setout Track III-B-6

i. Customer Access Sidings III-B-6

d. Yard And Interchange Track III-B-8

e. Rebuttal DRR Track Miles III-B-8

3. Yard And Interchange Track III-B-9

a Yards III-B-13

i. Intermodal Facilities III-B-16

ii Automotive Facilities III-B-16

iii Transload Facilities III-B-17

b. Interchange Track III-B-17

c. Rebuttal DRR Yards III-B-18

4. Joint Facilities III-B-18

5. Signals And Communications System III-B-19

6. Turnouts, FEDs And AEI Scanners III-B-19

III. STAND-ALONE COST

B. STAND-ALONE RAILROAD SYSTEM

The DRR is an extensive system that replicates much of the NS from Chicago, IL east to Buffalo, NY, south to New Orleans, LA, including track in New Jersey, Maryland, Tennessee and Missouri. NS "accepts the general scope and configuration of the DRR posited by DuPont."[1] However, NS includes additional mainline, industry lead and partially owned route miles as well as additional interchange locations, sidings and yards. NS also challenges DRR's yard types, locations and sizes and its communications system.

The issues raised by NS in Reply will be addressed separately below under the following topical headings

1. Routes and Mileage
2. Track Miles and Weight of Track
3. Yards and Interchange Track
4. Joint Facilities
5. Signals and Communications System
6. Turnouts, FEDs and AEI Scanners

1. Routes and Mileage

Table III-B-1 below summarizes the differences in constructed route miles between DuPont's Opening and NS's Reply

[1] *See* NS Reply, p III-B-1

Table III-B-1
Summary of DuPont Opening and NS Reply DRR Constructed Route Mileage

Description	DuPont Opening[1/]	NS Reply[2/]	Difference Col (3) – Col (2)
(1)	(2)	(3)	(4)
1. Main Lines			
a. Partially Owned Lines	0.00	49.77	49 77
b Chicago, IL Extension	0.00	2.82	2.82
c Additional Lead Track	0.00	14.02	14.02
d. Other Main Lines	6,479.79	6,479 79	0.00
2 Branch Lines	797 15	797 15	0.00
3. Total Constructed Route Miles	7,276.94	7,343.55	66 61

1/ DuPont Opening Errata, p. III-B-3
2/ NS Reply, p IIII-B-6

a. Main Lines

NS claims that DuPont did not "include certain main line tracks that are part of NS's Partially Owned Lines, including the Conrail Shared Asset Area ("Conrail"), the Indiana Harbor Belt Railroad Company ("IHB"), the Belt Railway Company of Chicago ("BRC"), and the Terminal Railroad Association of St. Louis ("TRRA")."[2] NS also claims the DRR should include additional trackage in the Chicago area to allow for interchange with BNSF and UP and six (6) additional lead tracks to serve DRR customers.

i. Partially Owned Lines

NS's position is that its trackage rights agreements over Conrail, IHB, BRC and TRRA are dependent upon NS's ownership stake and without that interest, the terms of the agreements would be different. On Reply, NS identifies the miles of these entities that the DRR traverses and multiplies them by NS's ownership percentage to arrive at the 49.77 miles NS claims the DRR would need to construct. Specifically, NS includes 40.43 constructed miles for Conrail (58 percent of 69.7 miles), 3.90 constructed miles for IHB (25 percent of 15.60 miles), 4.05 constructed miles for BRC (25 percent of 16.20 miles) and 1.40 constructed miles for TRRA

[2] *Id.* p III-B-2.

(14 29 percent of 9.78 miles) [3] As discussed in detail in Part III-F-13. the DRR does not need to construct these partially owned lines.

ii. Chicago, IL Extension

NS extends the DRR line segment from Cleveland, OH into Chicago, IL by adding 2.82 miles from Ashland Avenue Yard to Ogden Junction claiming that this segment is required to interchange traffic with BNSF and UP in Chicago "in a manner consistent with the operating practices of those railroads "[4] DuPont has accepted this extension in Rebuttal.

iii. Additional Lead Track

NS also adds 14.02 miles of NS-owned lead track for the following six (6) DRR customers:

1. Allen Power Plant, Belmont, NC
2. Cane River Power, Louisville, KY
3 Kingston Power Plant, Emory Gap, TN
4. Bear Creek Lead. Coal Yard Terminal Access. Baltimore, MD
5 Scherer Power Plant, Scherer, GA
6 Monroe Power Plant, Monroe, MI

DuPont has added these lead tracks in Rebuttal.

b. Branch Lines

NS agrees with DuPont's Branch Lines.

c. Rebuttal Route Miles

As discussed above. DuPont has accepted NS's changes to DuPont's DRR route miles for the Chicago extension and the six lead tracks but rejected the construction of the partially owned lines. Table III-B-2 below summarizes DuPont's Opening route miles and compares NS's Reply to DuPont's Rebuttal route miles

[3] *See* NS Reply, p III-B-7
[4] *Id*, p III-B-2

Table III-B-2
DuPont Opening, NS Reply And
DuPont Rebuttal DRR Constructed Route Mileage

Description	DuPont Opening[1/]	NS Reply[2/]	DuPont Rebuttal[3/]	Difference Cols (3)-(4)
(1)	(2)	(3)	(4)	(5)
1. Main Lines				
a. Partially Owned Lines	0 00	49 77	0 00	49.77
b. Chicago, IL extension	0.00	2 82	2.82	0.00
c Additional Lead Track	0.00	14.02	14.02	0.00
d. Other Main Lines	6,479.79	6,479.79	6,479.79	0 00
2. Branch Lines	797.15	797.15	797.15	0.00
3 Total Route Miles	7,276.94	7,343.55	7,293.78	49.77

1/ DuPont Opening Errata, p III-B-3.
2/ NS Reply, p. III-B-6.
3/ DuPont Rebuttal e-workpaper "DUPONT RR Route Miles Rebuttal Grading.xlsx."

As shown in Table III-B-2 above, the only difference between DuPont and NS regarding the constructed route miles of the DRR is NS's improper inclusion of 49.77 miles for the partially owned lines which is discussed in more detail in Part III-F.

2. Track Miles And Weight Of Track

Table III-B-3 below compares DuPont's Opening and NS's Reply DRR Track Miles.

Table III-B-3
Comparison of DuPont Opening and NS Reply DRR Track Miles

Description	DuPont Opening[1/]	NS Reply[2/]	Difference Cols (3)-(2)
(1)	(2)	(3)	(4)
1. Main Line Track			
a. Single Main Line (incl. branch lines)	7,276 94	7,343 55	66.61
b Other Main (incl sidings)	3,185 41	3,379 04	193.63
2. Other			
a. Helper Pocket and Setout Track	75 46	203.84	128.38
b Customer Access Sidings	0 00	191.21	191.21
3. Yard and Interchange Track	853.10	1,787.28	934.18
4 Total Track Miles	11,390 91	12,904.92	1,514.01

1/ DuPont Opening Errata, p III-B-5
2/ NS Reply, p III-B-10

NS agrees with DuPont's weight of rail specifications[5] but not DuPont's track miles. NS claims that DuPont's track capacity and configuration are inadequate to provide proper service to the customers included in the selected traffic. NS identifies four general criticisms that pertain to DuPont's Opening RTC Model and also criticizes DuPont's operating plan with regard to the classification and switching of general freight carload traffic.[6] As NS's RTC Model and classification and switching criticisms are discussed in detail in NS's Reply Part III-C, DuPont addresses them in its Rebuttal Part III-C. DuPont addresses mileage issues below.

a. Main Line Track

i. Single Main

NS adds 66.61 single main track miles. As discussed above, DuPont has accepted 16 84 miles for the Chicago extension and the six lead tracks but rejected the 49.77 miles for the partially owned lines[7]

ii. Other Main

DuPont's other main and siding miles in Opening were determined from its RTC Model On Reply, NS adds 193 63 miles of other main track and sidings that it claims are required to serve the DRR's selected traffic group, consisting of 160.18 miles on what NS refers to as "100% owned" DRR lines and 33.45 miles on the partially owned lines

As noted above, DuPont is not required to build the partially owned lines so the DRR does not need the 33.45 miles of other main identified by NS

On Rebuttal, as explained in Part III-C, DuPont has made several modifications to its RTC Model simulation in response to NS's Reply The results of those modifications result in a

[5] *See* NS Reply, p. III-F-139

[6] *See* NS Reply, pp III-B-7-8.

[7] The route miles of the DRR are contained in DuPont Rebuttal e-workpaper "DUPONT RR Route Miles Rebuttal Grading.xlsx," tab "DUPONT RR Miles" (filed with the III-F-2 workpapers) The route miles are also shown on the Rebuttal stick diagrams of the DRR *See* Rebuttal e-workpaper "DRR Rebuttal Sticks "

total of 3,448.19 miles of other main track and siding on Rebuttal.[8] DuPont notes that some of the sidings included in both Opening and Rebuttal are not passing sidings for through trains but rather short operational sidings used by local trains to pick up or drop off traffic.[9]

b. Branch Line Track

NS agrees with DuPont's branch line track miles.

c. Other

i. Helper Pocket and Setout Track

NS adds 128.38 miles of "setouts and helper pockets."[10] A review of NS's workpapers determined that this increase is for setout tracks only and not helper pocket tracks. NS accepted DuPont's configuration of one 735-foot single-ended setout track on either side of each FED.[11] Therefore, this increase in setout track miles is due solely to NS's increased number of failed equipment detectors ("FED") caused by NS's decreased spacing and increased count, of FEDs along the DRR. As discussed below, DuPont has not modified its FED spacing from Opening and, therefore, does not include NS's additional setout tracks. The DRR's setout track miles have increased from 75.46 miles on Opening to 76.58 miles on Rebuttal to account for eight setout track locations where the DRR main track was modified from single track to double track.

i. Customer Access Sidings

NS claims that "DuPont's track configuration does not include the railroad-owned industrial and/or spur tracks at any of the customer locations that the DRR must serve."[12] On

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[8] *See* DuPont Rebuttal e-workpaper "DUPONT RR Route Miles Rebuttal Grading.xlsx," tab "Sticks." Other main track and sidings are also shown on the Rebuttal stick diagrams of the DRR. *See* Rebuttal e-workpaper "DRR Rebuttal Sticks."

[9] These tracks are shown as sidings in the RTC Model and not as yard track.

[10] *See* NS Reply, p. III-B-10

[11] *See* NS Reply, p. III-B-18, *see also* NS's Reply Exhibit III-B-1 (NS's stick diagrams for the DRR).

[12] *See* NS Reply, p. III-B-12

Reply, NS adds 191.21 miles of "customer access sidings" at 274 separate locations.[13] NS's additional track miles are erroneously calculated, unsupported and unnecessary.

One problem with NS's customer access sidings is that the track requirements are based on NS's MultiRail simulation.[14] As discussed in detail in Part III-C of this Rebuttal, NS's MultiRail simulation is unsupported and full of errors and, therefore, completely unreliable

Another problem is that NS has not demonstrated that these tracks actually exist or, if they do, that they are paid for and owned by NS The only support offered by NS as to the existence of these customer access sidings is the statement "[T]he spurs and industrial tracks that are owned by NS at customer facilities were shown on the track charts provided to DuPont in discovery."[15] Using the from and to mileposts for these sidings as shown in NS's workpapers, DuPont attempted to find some of these sidings in NS's track charts. In many instances, there were no sidings shown on the track charts at the milepost indicated by NS. In many other instances, the milepost indicated by NS was at a yard location with no track detail shown on NS's track charts [16] In a few instances, there appears to be a track at a location specified by NS but there is no identification of what the track is used for

Furthermore, it has been the experience of DuPont's operating witness Mr McDonald and engineering witness Mr. Crouch that, while railroads may construct track to reach an industry, the industry will either pay the cost for the track construction upfront or reimburse the railroad through a track lease payment.

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[13] *Id*, p. III-B-10 NS also refers to this trackage as work sidings – *see* NS Reply Exhibit III-B-1 and e-workpaper "DUPONT RR Route Miles Opening Grading errata Reply xlsx," tab "New Work Sidings."

[14] *See* NS Reply, p III-B-12.

[15] *Id*, p III-C-189, note 291

[16] *See* DuPont Rebuttal e-workpaper "Examples of Non-Existent Work Sidings pdf" for seventy-five examples of both of these instances This is not a complete list of locations where no track is shown in NS's track charts but merely a list of examples identified by DuPont

DuPont acknowledged on Opening that the DRR would pay for the turnout from the DRR's rail line to connect to industry track and included 702 turnouts for just this purpose.[17] DuPont also notes that, as discussed above, its RTC Model includes many short sidings (less than 1 mile) that are used by local trains to pick up and drop off traffic

Based on the above, DuPont rejects NS's customer access siding track miles and continues to include 702 customer turnouts on Rebuttal[18] as well as the short sidings included in its RTC Model

d. Yard And Interchange Track

As shown in Table III-B-3 above, there is a difference between DuPont and NS in yard and interchange track of over 900 track miles. These differences are addressed in the next section.

e. Rebuttal DRR Track Miles

As discussed above, and below, DuPont has added track miles where appropriate. Table III-B-4 below summarizes the DRR track miles presented by DuPont in Opening and compares NS's Reply track miles to those included by DuPont on Rebuttal.

[17] *See* DuPont Opening, p. III-F-29 and Opening e-workpapers "DRR_2010_TRAFFIC_ATC_OT_v2 xlsx" and "Track Construction Costs errata xls," tab "User Input," cell J53.

[18] *See* DuPont Rebuttal e-workpaper "Track Construction Costs Rebuttal xls," tab "User Input," cell J53

Table III-B-4
DuPont Opening, NS Reply and
DuPont Rebuttal DRR Track Miles

Description	DuPont Opening[1/]	NS Reply[2/]	DuPont Rebuttal[3/]	Difference Cols (3)-(4)
(1)	(2)	(3)	(4)	(5)
1. Main Line Track				
a Single Main Line (incl. branch lines	7,276.94	7,343.55	7,293.78	49.77
b. Other Main (incl. sidings)	3,185 41	3,379.04	3,448.19	(69.15)
2. Other				
a. Helper Pocket and Setout Track	75.46	203.84	76.58	127.26
b. Customer Access Sidings	0.00	191.21	0.00	191 21
3. Yard and Interchange Track	853.10	1,787.28	1,197.01	590.27
4. Total Track Miles (excl. Yards)	11,390.91	12,904.92	12,015 56	889 36

1/ DuPont Opening Errata, p. III-B-5.
2/ NS Reply, p III-B-10.
3/ DuPont Rebuttal e-workpapers "DUPONT RR Route Miles Rebuttal Grading.xlsx," tab "Sticks" and "DRR Yard Matrix Rebuttal Grading.xlsx," tab "DRR YARDS "

3. Yard And Interchange Track

The biggest difference between DuPont's Opening and NS's Reply track is in yard and interchange track. On Opening, DuPont included 853.10 miles of track for yards and interchange locations.[19] On Reply, NS included 1,787 28 miles of track for yards and interchange locations.[20] On Rebuttal, DuPont has included 1,197.01 miles of track for yard and interchange locations. Table III-B-5 below compares DuPont's Opening and Rebuttal yard and interchange track with NS's Reply yard and interchange track.[21]

[19] *See* DuPont Opening, p. III-B-5 and e-workpaper "DRR Yard Matrix errata xlsx."
[20] *See* NS Reply, p. III-B-10.
[21] NS's yard track components were difficult to separate into the categories shown in Table III-B-5. *See* DuPont Rebuttal e-workpaper "Yard Track Comparison – DuPont v. NS.xlsx" for the various sources of the Table III-B-5 components

Table III-B-5
DuPont Opening, NS Reply and
DuPont Rebuttal DRR Yard and Interchange Locations and Track Miles

Description	DuPont Opening		NS Reply		DuPont Rebuttal	
	No. of Locations	Track Miles	No. of Locations	Track Miles	No. of Locations	Track Miles
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1 Yard Track for Trains						
a. Yard Track For Trains	115	700.04	71	526 31	119	744.45
b Industrial Support Yards	---	0.00	70	31 34	---	0.00
c. Intermodal Facilities	—	0.00	31	60 07	29	54.66
d. Automotive Facilities	8	28.08	8	41 68	8	41.68
e Bulk Transfer Facilities	—	0 00	14	22.17	11	17 81
f. Interchange Tracks	—	1/	143	249.11	76	95 51
g. Subtotal	---	728.12	---	930.68	---	954 11
2 Classification Tracks	39	89.79	71	836 02	52	204.38
3. Fixed Fueling Facility Tracks	6	2.22	22	3 22	6	2.22
4 Locomotive Shop Tracks	4	4.54	10	0 00	6	6.82
5. Locomotive Servicing Tracks	38	10 08	22	3 93	36	9.54
6. Car Shop Tracks	2	2 44	2	0 00	2	2 44
7. Rip Tracks	45	15.91	27	9.97	51	17.50
8. MOW Tracks	---	1.00	26	3 45	---	0.00
9 Total	—	853 10	---	1,787 27	---	1,197.01

Source: DuPont Rebuttal e-workpaper "Yard Track Comparison – DuPont v. NS xlsx."
1/ DuPont's interchange locations and tracks are included in line 1a

Before addressing the specific differences between DuPont and NS in yard and interchange track miles shown in Table III-B-5 above, the difference in philosophies underlying the development of yard and interchange track miles must first be addressed.

On Opening, DuPont's operating plan specified the location of "major" and "minor" yards where activities such as train staging, car inspection, yard switching (for originating and terminating traffic plus intermediate blocking of cars), crew changes, local train operations and locomotive repairs, servicing and fueling would take place. At many of these locations, traffic would also be interchanged with NS and other railroads. The number and length of "running

tracks" in each yard (the tracks necessary to handle the peak period trains moving through the yards of DRR) were based on the results of the RTC Model [22]

Additional yards were also identified from the RTC Model These consist of tracks shown as yard track, and not siding track, in the RTC Model.[23] These tracks are present wherever trains are stopped for extended periods of time and would include interchange locations and some crew change locations located outside the yards identified by the operating plan. These locations are not yards as defined by the operating plan but are locations that are classified as yard track in the RTC Model and, therefore, classified as yard track for construction purposes

Additional interchange locations were identified by a review of DRR carload data and interchange track was added at interchange locations where the DRR did not already have a yard.[24]

Automotive yards were also added manually to the DRR yard list.[25]

The number and length of classification tracks were estimated based on the range of car counts at each yard.[26] The number and length of tracks needed for locomotive repair and servicing facilities, fueling and car repair (rip tracks) were estimated by general yard size and included where necessary.[27]

All of the above were incorporated into the yard requirements of the DRR resulting in 853 10 miles of yard track

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[22] *See* DuPont Opening e-workpaper "DRR Yard Matrix errata xlsx,' tab "DRR Yards," footnotes 1 and 2

[23] Yard track in the RTC Model is shown as gray

[24] An example of this would be the interchange track added at Huntingburg, IN *See* DuPont Opening e-workpaper "DRR Yard Matrix xlsx," tab "DRR YARDS," Line 35

[25] An example of this would be the automotive yard added at Shelbyville, KY *Id,* Line 37.

[26] *See* DuPont Opening e-workpaper "DRR Yard Matrix errata xlsx,' tab "CLASS TRK LENGTH"

[27] *See* DuPont Opening e-workpaper "DRR Yard Matrix errata xlsx,' tab "ADDL TRACK "

As explained above, the primary source of yard track requirements developed by DuPont is the RTC Model in which the DRR operates trains based on actual trains run by NS NS's yard track requirements are based on trains created by its MultiRail simulation and, as discussed in detail in Part III-C, the MultiRail simulation has no relationship to actual NS trains. In other words, DuPont's yard track requirements are based on actual trains while NS's yard track requirements are based on trains created by a simulation program.

NS claims that it "eliminates waste and inefficiency in DuPont's spreadsheet-based operating plan by eliminating 45 yards posited by DuPont and adding small yards at 16 locations where traffic volumes require."[28] NS also replaces some DRR yards with "industrial support" facilities, adds industrial support facilities where there were no yards, and changes the location and configuration of other yards All of these changes and additions are driven by NS's constant reference to its "Operating Plan" developed using its MultiRail simulation. As explained in detail in Part III-C, NS's MultiRail simulation is unreliable and results in a gross overstatement of yard track.

NS also claims that DuPont's "location, sizing, and configurations of the DRR yards .. were based entirely upon a series of unsupported mathematical calculations that are untethered to the workload that the DRR actually would have to perform at each facility" These claims underline NS's total lack of understanding of DuPont's approach.

All of the additional yards proposed by NS derive from its new operating plan for the DRR, which involves the creation of new trains with new blocking schemes that are unrelated to the real-world trains the DRR interchanges with NS As discussed in Part III-C, NS may not propose such an entirely new operating plan on Reply, and its operating plan therefore must be

[28] *See* NS Reply, p III-B-8. As discussed below, NS did not eliminate most of these yards but simply reclassified them as another type of yard or added the same location as an interchange location

disregarded by the Board. This means the new and enlarged yards purportedly required to handle the DRR traffic must also be disregarded

The specific differences in yard and interchange track between DuPont and NS are addressed below.

a. Yards

Following the procedures described above, DuPont included a total of one hundred twenty-three (123) yards, including six (6) major yards, thirty-five (35) yards where yard crews are employed, eight (8) automotive yards and seventy-four (74) other yards where other activities occur including interchanging traffic, crew changes and picking up/dropping off traffic.[29]

NS included seventy-one (71) yards, seventy (70) industrial support yards, thirty-one (31) intermodal facilities, eight (8) automotive facilities, fourteen (14) bulk transfer facilities and one hundred forty-three (143) interchange locations.[30]

NS states that it eliminated 45 yards proposed by DuPont on Opening.[31] This statement is very misleading and incorrect. A review of NS's workpapers shows that NS eliminated 42 yards [32] However, several of these "eliminated" yards appear elsewhere in NS's yard and interchange locations For example, NS eliminated five (5) of the eight (8) automotive yards included in DuPont's Opening yard list but these same five facilities appear in its listing of automotive yards.[33] Furthermore, NS eliminated nineteen (19) DRR yards but then included

[29] *See* DuPont Opening e-workpaper "DRR Yard Matrix errata xlsx,' tab "DRR YARDS "
[30] *See* NS Reply e-workpapers "DRR Yard List Reply.xlsx" and "DUPONT RR Route Miles Opening Grading errata Reply xlsx"
[31] *See* NS Reply, p. III-B-8
[32] *See* NS Reply e-workpaper "DRR Yard List Reply.xlsx," tab "DRR YARDS (Reply Notes)."
[33] Voltz, MO, Shelbyville, KY, Cheektowaga (Buffalo), NY, Petersburg, VA and Hapeville, GA

interchange tracks at the same locations [34] Clearly, DuPont's Opening yard matrix did not include yards that were not needed by the DRR.[35]

NS converted several DRR yards to industrial support yards and added a significant number of industrial support yards at other locations. The main problem with NS's industrial support yards is that they are based on the MultiRail simulation which, as discussed in Part III-C, DuPont has shown to be unreliable. DuPont disagrees with NS's conversion and relies on the track requirements at these locations specified by the RTC Model. It is also not clear whether or not these industrial support yards are owned by NS or owned by customers NS has provided no support of ownership for these tracks

As discussed in Part III-C, DuPont made some modifications to its RTC Model in response to NS's Reply criticisms As a result of those modifications, there were some modifications to DuPont's yards. Seven (7) new yards were included in the RTC Model[36] and three (3) yards from Opening were not included in the RTC Model[37] for a net increase of four (4) yards.

As shown in Table III-B-5 above, the largest difference in yard track, by far, is in classification track. On Opening, DuPont included 89 79 miles of classification track at 39 locations. On Reply, NS included 836.02 miles of classification track, nearly ten times the amount included by DuPont. As discussed in Part III-C. DuPont shows that NS's methodology for calculating classification track requirements results in grossly overstated track miles. In Part

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[34] Van Loon, IN, Ft. Wayne (NE Tower), IN, West Peru, IN, E. St Louis, IL, CO SO (South Fork), PA, Conpit, PA, Reading, PA, Brookneal, VA, Petersburg (Secoast), VA, Elmore, WV, Kellysville, WV, Boligee, MS, Marion Jct , AL, Streator, IL, Norristown (Abrams), PA, Baltimore (Bayview), MD, Chillicothe, OH, Fort Mill, NC and Pregnall, SC.

[35] Automotive and interchange yards are discussed in greater detail below

[36] The RTC Model added yards at Cleveland (Rockport), OH, Waverly, NY, Hagerstown, MD, Lexington, KY, Celco, VA and Columbus, OH Each of these yards is a DRR interchange location

[37] Yards were eliminated at Marion Jct., AL Kimbrough, AL and Muskogee Jct , GA All three locations are interchange locations and DuPont has added them to the additional interchanges discussed below in the interchange track section

III-C, DuPont also explains that it has reevaluated its classification track requirements based on the NS's criticisms. Using the number of classification tracks needed at each yard, the ladder track configuration used in Opening and the minimum and maximum track lengths of 1,000 and 3,200 feet used in Opening, DuPont has included 204.38 miles of classification track at 52 locations on Rebuttal [38]

As shown in Table III-B-5 above, DuPont included small amounts of track on Opening at selected yards for locomotive repair, fueling and servicing facilities as well as car repair and rip track facilities (Table III-B-5, lines 4-7, Column (2) and Column (3)). NS included track for locomotive fueling and servicing facilities as well as rip and MOW tracks (Table III-B-5, lines 4-8, Column (4) and Column (5)) NS did not criticize DuPont's locations or track miles for these facilities on Reply, and in most instances DuPont included more track at more locations Locomotive repair, car repair and fixed fueling facilities are discussed in Part III-F-8, Buildings and Facilities The only change DuPont is making to these facilities on Rebuttal is the increase to six (6) locomotive repair facilities. The only change to DuPont's number of locomotive servicing tracks is the elimination of these tracks at two yards where the DRR no longer needs yard crews as discussed in Part III-C. Also as discussed in Part III-C, DuPont has added car inspectors at a few additional locations and DuPont has added rip tracks at those locations where rip tracks were not provided on Opening. DuPont did not include MOW tracks in yards on Opening because DuPont's maintenance of way witness, Mr Crouch, did not deem them necessary. NS did not provide any evidence on Reply demonstrating that these tracks are necessary and DuPont has continued to exclude them in Rebuttal.

[38] *See* DuPont Rebuttal e-workpaper "DRR Yard Matrix Rebuttal Grading.xlsx," tab "CLASS TRK LENGTH."

i. Intermodal Facilities

On Reply, NS included thirty-one (31) intermodal facilities[39] DuPont agrees that the DRR needs intermodal facilities but has included only twenty-nine (29) of the facilities identified by NS. DuPont has excluded the facility in Elizabeth, NJ because NS stated that this facility is private and the DRR did not need to construct it[40] DuPont has also excluded the facility in Morrisville, PA because this facility is located on a Conrail Shared Asset line that the DRR is not constructing DuPont has accepted NS's track miles for the intermodal facilities included on Rebuttal.

ii. Automotive Facilities

On Opening, DuPont identified and included eight (8) automotive yards.[41] On Reply, NS eliminated five (5) automotive yards from DuPont's yard list, modified the three (3) other automotive yards to different type yards[42] and then added eight (8) automotive yards[43] A comparison of the automotive yards included by DuPont and those included by NS reveals that NS included seven (7) of the same yards as DuPont. The one difference is that NS converted DuPont's Avon Lake, OH automotive yard to an industrial support yard and added an automotive yard in Chicago, IL.

On Rebuttal, DuPont has accepted NS's Chicago, IL automotive facility and removed the Avon Lake, OH automotive facility for the same total of eight (8) automotive facility locations on the DRR. DuPont has also accepted NS's track miles at each of these facilities.

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[39] *See* NS Reply, pp. III-C-195-197 and e-workpaper "DRR Yard List Reply xlsx," tab "IM Yards."
[40] *Id*, p III-C-196, note 307
[41] *See* DuPont Opening e-workpaper "DRR Yard Matrix errata xlsx," tab "DRR YARDS "
[42] For unexplained reasons, NS converted the New Orleans, LA automotive yard to a medium flat yard, converted the Avon Lake, OH automotive yard to an industrial support yard and combined the Fostoria, OH automotive yard with another yard
[43] *See* NS Reply, pp. III-C-197-200 and e-workpaper "DRR Yard List Reply xlsx," tab "Auto Yards "

iii. Transload Facilities

On Reply, NS included fourteen (14) transload (bulk transfer) facilities.[44] In Rebuttal, DuPont agrees that the DRR needs to include transload facilities but has included only eleven (11) of the facilities identified by NS in Reply. Using the addresses for these facilities provided by NS in discovery, DuPont determined that three (3) of the facilities identified by NS are not located on rail lines that the DRR is constructing. DuPont has excluded the facility in Baltimore, MD as it is located a few miles west of the Baltimore terminus of the DRR (Bayview Yard). DuPont has also excluded the facility in Charlotte, NC as it is located a few miles southwest of the DRR's rail line through Charlotte Finally, DuPont has excluded the facility in Cincinnati, OH as it is located several miles east of the DRR's rail line through Cincinnati DuPont has accepted NS's track miles for the eleven (11) transload facilities that it has included in Rebuttal.

h. Interchange Track

As discussed above, interchange track was included by DuPont on Opening in two ways First, interchange track was included in the yard track identified by the RTC Model as interchange trains were included in the trains moving over the DRR during the peak period Second, additional interchange yards were added at locations where there were no yards in the RTC Model based on a review of the DRR's traffic data.[45]

On Reply, NS ignored the yards DuPont included, developed its own list of 143 interchange locations and included 249 11 miles of interchange track.[46] DuPont reviewed NS's interchange location list, identified 67 interchange locations that are at existing yards included in the DuPont Rebuttal yard matrix and accepted NS's remaining 76 interchange locations. DuPont

[44] *See* NS Reply, pp III-C-200-202 and e-workpaper "DRR Yard List Reply xlsx," tab "TBT Yards."
[45] For example, DuPont included interchange yards at Huntingburg, IN, Alliance, OH, Streator, IL, Fort Mill, NC and Columbia, SC. See DuPont Opening e-workpaper "DRR Yard Matrix errata xlsx," tab "DRR YARDS."
[46] *See* NS Reply e-workpaper "DUPONT RR Route Miles Opening Grading errata Reply.xlsx," tab "New Interchange Tracks."

has added 95.51 miles of interchange track at these 76 locations based on the track miles NS included in Reply.[47]

c. **Rebuttal DRR Yards**

As discussed above, and shown earlier in Table III-B-5, DuPont has increased its yard and interchange track from 853.10 track miles to 1,197.01 track miles. This is still substantially lower than NS's overstated 1,787.27 track miles.

4. **Joint Facilities**

DuPont included 818.87 miles of trackage rights in Opening.[48] After reviewing NS's Reply, DuPont has made four modifications to the DRR's trackage rights miles.

NS claims that DuPont cannot move over CSXT track between Pine, IN and Burnham, IL[49] (designated by DuPont as the Chicago Connector 2). DuPont accepts this and has eliminated this segment in Rebuttal and deleted the 6.40 miles of trackage rights.[50]

NS also claims that DuPont cannot connect to the Canadian National Railway ("CN") line from Chicago, IL to Gibson City, IL at milepost 17.70 in Riverdale, IL but must connect at the 95th Street Junction at milepost 12.00.[51] DuPont accepts this and adds 5.71 miles of trackage rights over the CN.[52]

NS reduces the mileage for the TRRA segments traversed by the DRR in St. Louis by a total of 0.52 miles. DuPont accepts NS's mileage changes for these segments.

NS also reduces the mileage for the IHB segment between Argo, IL and Provo Jct., IL by 0.10 miles. DuPont accepts this change.

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[47] *See* DuPont Rebuttal e-workpaper "DuPont Rebuttal RR Interchanges.xlsx."
[48] *See* DuPont Opening, p. III-B-8 and e-workpaper "DUPONT RR Route Miles Opening errata.xlsx."
[49] *See* NS Reply, p. III-C-146.
[50] DuPont notes that NS did not delete this segment or the corresponding miles from its route mile spreadsheet. *See* NS Reply e-workpaper "DUPONT RR Route Miles Opening Grading errata Reply.xlsx."
[51] *See* NS Reply, p. III-C-147.
[52] DuPont notes that NS did not include this extension or the corresponding 5.71 miles in its route mile spreadsheet. *See* NS Reply e-workpaper "DUPONT RR Route Miles Opening Grading errata Reply.xlsx."

On Rebuttal, DuPont has included 817 56 miles of trackage rights for the DRR. This includes the partially owned track which NS claims the DRR must construct which was addressed previously in the route mile section and is addressed in detail in Part III-F-13. NS also claims that DuPont has not calculated the DRR's trackage rights costs correctly. This issue is addressed in Part III-D.

5. Signals And Communications System

DuPont equipped the DRR with a Positive Train Control system ("PTC") from the outset of operations in June 2009. NS's position on Reply is that, because the technology required to implement PTC did not exist in 2009, the DRR must start out with a Centralized Traffic Control System ("CTC") and overlay PTC by December 31, 2015

As discussed in Part III-F-6, the DRR's inclusion of PTC at the beginning of the DRR's operations is feasible (technology did exist) and in Rebuttal DuPont continues to implement PTC in June 2009.

NS accepts DuPont's communications and microwave system with microwave towers placed at 20-mile intervals along the DRR

6. Turnouts, FEDs And AEI Scanners

NS accepts DuPont's turnout specifications and count of 108 AEI scanners but challenges DuPont's spacing for Failed Equipment Detectors ("FED").[53]

DuPont placed FEDs at 35-mile intervals throughout the DRR system with single-ended setout tracks on either side of each FED.[54] NS accepts DuPont's setout track specifications but rejects DuPont's FED spacing NS states that it has placed FEDs according to their actual

[53] Both DuPont and NS included Dragging Equipment Detectors ("DED") as well as Failed Equipment Detectors ("FED") at each location but the text only refers to FEDs. *See* NS Reply, pp III-B-17-18 FEDs and DEDs are also discussed in Rebuttal Part III-F-6

[54] *See* DuPont Opening, p III-B-9.

placement today based on NS track charts resulting in FEDs spaced approximately every 15 miles. This spacing more than doubles both the number of FEDs and setout tracks on the DRR.

DuPont's 35-mile spacing was based on the experience of its operating witness. NS did not demonstrate that DuPont's FED spacing was not feasible. NS merely said it was "unreasonable," for the sole reason that it is "twice the distance between FEDs as is NS's practice in the real-world."[55] The DRR is not a replication of NS and it has no requirement to conform to existing NS configuration. The DRR only needs to be feasible. Spacing FEDs every 35 miles is certainly feasible. In fact, NS's actual FED placement demonstrates this. For example, a review of NS's track charts for the DRR line segment between Bellevue, OH and Walton, VA revealed three instances of NS actual FED spacing in excess of 35 miles, including one instance of nearly 100 miles.[56]

DuPont has also reviewed a limited number of publicly available track charts for other railroads and found several instances of FED spacing in excess of 35 miles.[57]

Based on the above, NS's FED spacing is not necessary for the DRR and DuPont's FED spacing is feasible. DuPont continues to use its Opening 35-mile spacing for FEDs in Rebuttal.

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[55] *See* NS Reply, p. III-B-18.

[56] 56.38 miles between milepost ("MP") RR 62.61 and MP RR 6.23, 38.50 miles between MP WV 171.80 and MP WV 133.30, and 94.74 miles between MP WV 189.98 and MP V 366.48. See NS Reply Exhibit III-B-1, pp. 47-49.

[57] *See* DuPont Rebuttal e-workpaper "FED Spacing on Other Railroads.pdf."

PART III-C

PUBLIC VERSION

Table of Contents

III. STAND-ALONE COST III-C-1

C. STAND-ALONE RAILROAD OPERATING PLAN III-C-1

1. DuPont's Operating Plan is Feasible III-C-3

a. DuPont's Operating Plan Is Based On NS's Own Operations III-C-4

i. DuPont Used NS's Own Operations As The Template For its Operating Plan. III-C-4

(1) The DRR Provides Local Train Service III-C-7

(2) DuPont Did Not Develop a Trainload Operating Plan III-C-8

(3) The DRR Uses The Same Car Classification and Blocking Plans As NS's Real World Operations III-C-10

(4) DuPont Provided The Facilities To Operate Road and Local Trains..... III-C-10

(5) DuPont Provided Sufficient Time For Local Trains To Pick-Up and Set-Out Cars III-C-11

(6) DuPont Provided The Special Services To Meet The Needs of DRR Shippers III-C-12

ii DuPont's Operating Plan Was Prepared By Experts With Many Years Of Railroad Operating Experience..... III-C-12

b. Any Limitations On DuPont's Operating Plan Are A Result Of NS's Failure To Provide Accurate Data III-C-14

i NS Cannot Run Away From Its Own Flawed Data III-C-14

ii. NS Acknowledges The Flaws In Its Own Data III-C-15

(1) Train and Car Event Data Cannot Be Accurately Combined III-C-16

(2) NS Had To Resort To Opinions To Develop Dwell Times Because They Could Not Be Identified From NS Data. III-C-20

iii. DuPont included All Trains NS's Data Indicated Moved Over The DRR. III-C-22

(1) Train Event Data Shows More Trains On SARR Than Car Event Data III-C-23

(2) NS Included Trains That Are Not In The Car Event Data III-C-26

c DuPont's Operating Plan Accounts For Reciprocal Operations..... III-C-27

i. Pre-Blocking Cars Forwarded to Connecting Carriers III-C-28

ii. Handled Run Through Power III-C-29

iii Distributive Power III-C-30

iv Fueling and Inspecting Locomotives III-C-31

v. Running Repairs To Foreign Railcars III-C-32

d DuPont's Operating Plan Properly Handles TIH Shipments..... III-C-33

i The DRR Can Track TIH Shipments..... III-C-34

ii. DRR Trains Carrying TIH Shipments Are Limited To 50 MPH. ... III-C-34

iii The DRR Has The Appropriate Personnel To Handle TIH Shipments III-C-34

e. DuPont Has Reasonably And Properly Included Cross-Over Traffic In "Leapfrog" Service..... III-C-35

f DuPont Has Accounted For Traffic On Line Segments Impacted by Rerouted Trains..... III-C-50

2. DuPont's RTC Simulation Proves The Feasibility Of The DRR Operating Plan..... III-C-53

a. DuPont's Modeling Of NS's Own Operations Proves Its Feasibility III-C-53

b. DuPont Used Correct Grade Information..... III-C-54

i DuPont Relied On The Grade Information Included In NS's RTC Models Provided In Discovery..... III-C-55

ii Rebuttal RTC Grades..... III-C-56

c. Track Outages..... III-C-56

i NS Train Movement Data Shows Train Moving Over Line Segments NS Claims Were Shutdown Due To Outages..... III-C-56

ii. Rebuttal RTC Outages..... III-C-57

d Amtrak Northeast Corridor..... III-C-58

e. Foreign Railroad Crossings..... III-C-58

f. DuPont's Modeling of The Chicago Area..... III-C-59

g Light Engine and Hi-Rail Movements..... III-C-60

h. DuPont Incorporated In-Route Consist Stops and Changes..... III-C-61

i. The DRR Provides The Same Or Better Service Quality Than NS..... III-C-62

3. NS's MultiRail-Based Operating Plan is Unnecessary and Erroneous, and It Complicates the SAC Analysis while Providing no Advantage Over DuPont's Tried and Tested Model..... III-C-65

a Substituting Modeled SARR Routing And Operations For Actual Routing And Operations Is Unnecessary..... III-C-67

b. Substituting Modeled SARR Routing and Operations for Actual Routing and Operations Distorts the SAC Analysis..... III-C-71

c. NS Uses A Model That Is Superior To MultiRail In Developing its Real-World Operating Plan..... III-C-84

d. NS's MultiRail-Based Modeling Exercise Fails To Consider Downstream Impacts On Both DRR Traffic And Other Non-Selected NS Traffic..... III-C-85

e. NS's MultiRail-Based Modeling Exercise Fails To Account For All Selected DRR Traffic..... III-C-88

f NS's MultiRail-Based Modeling Exercise Relies on Simple Mathematical Algorithms Rather than Real-World Operations. III-C-92

g. NS's MultiRail-Based Modeling Exercise Is Riddled With Faulty And Unalterable *Inputs And Assumptions That Render Its Outputs And All Downstream SAC* Analyses Invalid III-C-96

4. NS's RTC Model Of The DRR Is Filled With Errors III-C-108

a NS Incorrectly Modeled Foreign Railroad Trains..... .. . . III-C-108

b NS Improperly Modeled Random Outages. III-C-111

c. NS Improperly Input RTC Trains III-C-112

d NS RTC Network Does Not Reflect Its Investment... .... III-C-117

5 DuPont Response to NS's Criticisms of DuPont's Operating Plan. III-C-120

a Yard and Facilities. III-C-120

i Yards..... .. . . III-C-120

(1) Yard Switching and Classification Tracks. III-C-121

(a) NS Yard Classification Car Counts are Unsupported.. .... .III-C-122

(b) NS Yard Classification Car Counts are Unrealistic. III-C-123

(c) NS Hump Yard Classification Track Miles are Significantly Overstated..... .. ..III-C-125

(2) Determination of DRR Yard Classification Tracks in Rebuttal III-C-126

ii. Intermodal Facilities. III-C-128

iii. Automotive Facilites.. ... .III-C-128

iv. Transload Facilities III-C-129

b Yard Activity. III-C-129

i. Locomotive Inspections and Fueling III-C-129

ii Railcar inspections III-C-130

c. Train Sizes and Equipment III-C-130

i. Train Size .... '. III-C-130

ii. Locomotives III-C-131

(1) Road Locomotives.. .. . .III-C-132

(a) Locomotive Dwell in Yards..... ... ... III-C-133

(b) Peaking Factor III-C-136

(c) Spare Margin. III-C-138

(2) Local Trains... . ... III-C-138

(3) Helper Locomotives..... .. .. III-C-138

(4) Switch Locomotives III-C-139

d Crew Districts and Requirements III-C-140
i Road Crews III-C-140
ii. Yard Crews III-C-140
iii Helper Crews III-C-140

PUBLIC VERSION

III. STAND-ALONE COST

C. STAND-ALONE RAILROAD OPERATING PLAN

This section of DuPont's Rebuttal Evidence responds to NS's Reply evidence on the DRR's operating plan This section also responds to NS's Reply Evidence related to the RTC Model simulation of the DRR's operations conducted by DuPont, as well as the "MultiRail" model used by NS to create an entirely new (and unworkable) operating plan for the DRR.

NS devotes 116 pages of its Part III-C Reply Narrative to a critique of the alleged shortcomings of DuPont's operating plan. NS then spends 88 pages presenting an entirely new operating plan that NS developed, from scratch, to handle the DRR's traffic in a manner that supposedly corrects the shortcomings of DuPont's operating plan and provides for "full-service" handling of all cars moving on DRR's merchandise and intermodal trains (both cars containing DRR traffic and cars containing other, non-DRR traffic).

NS's position is that DuPont's operating plan does not account properly for intermediate pickups and setouts, or yard/local switching, needed to move all of the cars on the DRR's merchandise and intermodal trains between their DRR origins and DRR destinations. In fact, however, DuPont has accounted for all of these activities DuPont's operating plan, which was developed by Mr. Richard McDonald, an acknowledged railroad operating expert with over 40 years of operating, maintenance and engineering experiences with both Eastern and Western railroads, provides for pickup or delivery of cars at all local origins and destinations, and it accounts for intermediate and other yard switching by applying an I&I switching cost or a yard/local switching cost every time one of these activities could be identified from the car event and train event data produced by NS in discovery DuPont also included an intermodal lift and ramp cost to reflect the cost of adding/removing trailers and containers at local origins and destinations for the DRR's intermodal trains. The only thing DuPont did not do is include, in

some instances, the time for these activities in its RTC Model simulation As explained in more detail below, DuPont could not model these activities on Opening because of unresolved problems with NS's electronic data detailed in DuPont's Opening Exhibits III-C-1 and III-A-2 In its Rebuttal, DuPont has addressed these cases where NS's own data was unclear, but still greatly questions the accuracy of the spurious and conflicting NS data.

Rather than correcting for the claimed "errors" committed by DuPont, NS instead chose to develop an entirely new operating plan NS's operating plan involves the creation of new DRR merchandise and, to some extent, intermodal trains, assembled from blocks of cars removed from various NS trains at interchange points where the traffic first touches the DRR system. NS's operating plan must be rejected by the Board because there is no link between the real-world trains that move DRR traffic to the on-SARR points and the new DRR trains created by NS to move traffic from the on-SARR points to local destinations or off-SARR interchange points Essentially, NS's use of the MultiRail software to develop its operating plan draws a "wall" around the SARR, without accounting for the effect on the residual NS and other connecting railroads. Moreover, NS's Reply operating plan results in numerous cases of impermissible off-SARR rerouted traffic. As the Board has indicated in prior SAC cases, such use of impermissible off-SARR traffic is contradictory to the SAC process

This means NS has not demonstrated that its operating plan is capable of providing the end-to-end service required by the DRR's customers, which is an essential factor for Board approval of a SARR operating plan.[1] Moreover, the "MultiRail" data made available to DuPont and the Board is a read-only copy of the results of NS's analyses As discussed in more detail below, this means DuPont was unable to verify that the inputs used by NS produce the results or to test alternative scenarios to ascertain whether these results are indeed the most efficient. What

[1] *See Duke/NS*, p. 99

is clear is that NS's operating plan is extremely costly and does not in any way reflect the flow of the DRR's traffic in the real world, much less the flow of cross-over traffic between NS and the DRR and vice versa

In the following sections of this Part III-C, DuPont explains in more detail why its operating plan is feasible and supported by the best evidence available, and why NS's operating plan must be rejected. DuPont also responds to NS's criticisms of its inputs to the RTC Model, corrects those inputs where warranted, and presents the results of its Rebuttal RTC Model simulation of the DRR's peak-period operations. DuPont also addresses again the propriety of using internal cross-over traffic, i.e., "leapfrog traffic," and why its use is consistent with SAC Theory.

1 DuPont's Operating Plan is Feasible

In its Reply narrative, NS went to great lengths in an attempt to portray DuPont's DRR operating plan as unfeasible NS alleges that DuPont did not include all the trains necessary to transport the DRR's traffic, did not operate the trains included in the DRR traffic group in a manner that provides the same services as the NS, did not classify the DRR trains properly in its yards and did not interchange the DRR trains with connecting carriers in the same fashion as NS. In addition, NS took the unprecedented step of saying DuPont's operating witnesses were incompetent

NS's overheated Reply rhetoric is designed to distract from, and disguise, the flaws in its alternative operating plan based upon the MultiRail software. As DuPont clearly indicated in its Opening Narrative, DuPont developed its operating plan specifically to use the same basic operating practices NS uses in its real world operations. In other words, DuPont operated the

same trains as NS operates in its real world operations in the same basic fashion.[2] Any indictment of the DRR operating plan is an indictment of NS's own operations. Moreover, any minor flaws in the DRR operating plan stemmed primarily from the inconsistent and error filled data NS provided in discovery.[3]

DuPont discusses the flaws in NS's Reply evidence and its Rebuttal Operating Plan below

a. DuPont's Operating Plan Is Based On NS's Own Operations

i. DuPont Used NS's Own Operations As The Template For its Operating Plan

NS's underlying Reply theme is that DuPont's DRR operating plan is unfeasible because it does not provide the same level of service as that provided by NS in its real world operations.[4] NS' Reply position is a bit of a quandary because, as DuPont indicated in its Opening Narrative, DuPont ran the same trains in the same fashion as NS operates in its real world operations.[5] In essence, NS is indicting its own operations.

The STB has made it abundantly clear in its prior decisions in SAC cases that SARR operating plans that stray too far from the incumbent's real world operations run the risk of being rejected as being unfeasible. In *FMC*, the shipper based its operating plan on the use of average train sizes instead of using actual train sizes used by the defendant railroad UP For example, FMC estimated the number of coal trains operating over the *FMC* stand-alone system by using the average number of cars per train for all trains moving over the specific interchange points

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2 DuPont did make some adjustments to certain train operations where NS's operations where less efficient than the DRR's operations

3 NS's data was so lacking that its own experts acknowledged its flaws and could not use it for its own Reply evidence See DuPont Rebuttal Exhibit III-C-1 for a listing of data flaws acknowledged by NS.

4 *See* NS Reply, pp. III-C-10-22 and III-C-52-68.

5 *See* DuPont Opening at III-C-2 "[t]he peak traffic volume and train movements were developed by DuPont Witness Fapp using the 2009 and 2010 traffic and car/train movement data provided by NS in discovery..."

and interchanges, but limited the maximum length of the trains to 115 railcars.[6] Similarly, FMC developed its grain train requirements by consolidating its multiple-car shipments into unit train shipments, while ignoring the actual number of cars on the trains operated by UP.[7] The Board rejected FMC's operating plan because it did not reflect the actual number of trains UP operated nor did it reflect the actual number of cars UP operated on those trains.[8]

In a similar fashion, the Board rejected the shipper's operating plan in the *Duke/CSXT* decision for failing to conduct operations in a similar fashion to the defendant CSXT. As stated by the Board:

> To limit operating expenses, Duke selected an operating plan for the ACW [the SARR in the case] that is different from how CSXT conducts its coal-hauling operations in the Central Appalachian Region.[9]

As with the operating plan presented by the shipper in *FMC*, the STB rejected Duke's operating plan because it would not provide the same level of service as that provided by the incumbent railroad.[10]

Based on the Board's decisions in *FMC* and *Duke/CSXT*, as well as other Board decisions[11], shippers in SAC cases have developed their operating plans to mimic the operations of the incumbent railroad. This has taken the form of operating the SARR trains in virtually the same manner as the incumbent, including using the same consist sizes, and using virtually the same mainline track infrastructure. In this way, shippers in SAC cases can best ensure that their operating plans meet the needs of the incumbent's customers. This is the approach taken by the

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6 *See FMC*, p. 736
7 *Id*, p. 737.
8 *Id*, p. 738.
9 *See Duke/CSXT*, p. 426
10 *Id*, p. 430
11 *See Duke/NS* and *CP&L* for example.

shipper in *AEPCO*, the most recent SAC case decided by the Board, and one in which the Board found the shipper's SARR operating plan feasible. As stated by *AEPCO*:

> The ANR's train sizes are the same as those for comparable BNSF and UP trains operated in the most recent twelve-month period (2Q08 through 1Q09, also referred to as the "Base Year") for which the defendants produced usable train and car movement data. Non-coal trains move exclusively in overhead service so they use the same cars (or mix of cars) as the comparable BNSF and UP trains that moved between the same points in the same year.[12]

This also is the approach DuPont used in developing its operating plan. As indicated in its Opening Narrative, Mr. McDonald developed the DRR configuration based on NS's present main-track/passing siding configuration for all the NS lines replicated by the DRR.[13] In a similar fashion, Mr Fapp identified the trains operating over the DRR system based on the trains operated by the NS. This includes identifying the number of loaded and empty railcars moving on these trains [14] Mr. McDonald then used the list of real world NS cars to develop the specific parameters of the DRR operating plan

Unlike the shippers in the *I-MC* and *Duke/CSXT* cases, DuPont's operating plan does not attempt to stray too far from NS's own operations by developing train sizes and consists different from those used by the incumbent carrier. Instead, DuPont used the same train sizes and consists as those used by NS and identified in NS supplied data. NS cannot realistically claim that DuPont's operating plan is not feasible, because in many important ways, it is NS's own real-world operating plan. As discussed in section A-3 below, it is NS which has developed an unfeasible operating plan that strays far from its own operations

Nevertheless, NS questions the feasibility of the DRR's operating plan based on a series of allegations regarding missing or incomplete trains and facilities, and improper service design

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[12] *See* Opening Evidence of Complainant Arizona Electric Power Cooperative, Inc (Public Version) pp III-C-7-8.
[13] *See* DuPont Opening, p. III-C-2
[14] *Id*

processes.[15] NS also alleges that DuPont "does not properly account for the facilities, personnel and time required to transport the massive volume of general freight traffic that it selected for the DRR in accordance with customer needs." NS asserts that this failure encompasses five aspects of "carload" railroading, which NS summarizes at pages III-C-56 through 68. Although DuPont provides a detailed response to these claims elsewhere within this Part III-C, as well as in Sections III-B and III-F of this Rebuttal narrative, DuPont summarizes below why NS's allegations are wrong and/or overstated, and why DuPont has developed a feasible operating plan based on NS's own operations that is capable of providing service to carload shippers.

(1) The DRR Provides Local Train Service

NS alleges that the DRR operating plan is infeasible because DuPont did not provide all the trains necessary, including local trains, to move the DRR traffic, and did not operate those trains in a manner that would allow for the origination and delivery of traffic along the DRR route.[16] NS is wrong. DuPont included all of the local trains readily identifiable as moving over the DRR route in the NS train event data. In contrast, NS included trains in its Reply operations that are completely divorced from NS's own operations and that do not necessarily move on the DRR route at all.[17]

Contrary to NS's allegations, DuPont did model local traffic in its RTC model and stopped trains along the routes of service where DuPont could reliably identify the stops in NS's faulty traffic data. However, given the extreme flaws in NS's car and train event data, DuPont had to make certain assumptions about where and when trains stopped to provide local service, and the consist of those trains in the RTC model.

[15] *See* NS Reply, pp. III-C-4-7.
[16] *See* NS Reply, pp. III-C-10-22.
[17] In addition, NS included trains that do not even appear in its car and train event data.

In this Rebuttal, DuPont has updated its RTC model to address certain criticisms levied by NS, including stopping trains in route, and changes in consist sizes on DRR local and road trains DuPont has included consist changes in its RTC model, even though it continues to believe that NS's car and train event data is so flawed that it is an unreliable source of information as to what actually moved on the NS trains. DuPont also explains where it added additional trains to its Opening base year DRR train group in response to the limited number of valid NS criticisms

(2) DuPont Did Not Develop a Trainload Operating Plan

NS alleges that DuPont designed a "trainload railroad," and did not develop its operating plan to allow for the delivery of individual shipments [18] In addition, NS contends that DuPont should have built "trip plans" for each shipment, and, using these individual trip plans, should have built trains to move individual cars across the DRR system. NS intentionally misconstrues DuPont's statements about the DRR and its train operations, and ignores the fact that the DRR provides services to all customers

Contrary to NS's claim, DuPont did not state that it designed a "trainload railroad," but stated that it designed its operating plan to meet the transportation needs of the DRR traffic group by operating the same train sizes with the same mix of traffic as NS [19] Additionally, NS exploits the working assumptions DuPont was forced to make in order to work with NS's flawed data when it asserts that the DRR would not change consists at yards or along train routes. From this misnomer that the DRR would not change consist sizes, NS jumps to the improper

[18] *See* NS Reply, pp III-C-56-58.

[19] *See* DuPont Opening, p. I-63. NS misstates DuPont statement on page I-66 of its Opening narrative that DuPont would operate a trainload railroad. DuPont's statement reflected the calculation of the DRR's operating expenses and how DRR employees would handle trainload quantities of goods NS's own workpapers show that the DRR handles more road trains than local trains meaning most trains are handled with trainload quantities.

conclusion that the DRR is a "train only" railroad [20] In actuality, as explained at page Opening III-C-15, DuPont stopped trains in route for spotting and pulling cars from trains, which is the very definition of changing train consists and providing services to its customers The only thing that DuPont did not do, because of data limitations, was model the consist changes in the RTC Model, which has very little effect on RTC simulation

Finally, NS's statement that DuPont's operating plan fails because it did not develop individual trip plans for each shipment is a case of misdirection [21] DuPont operates the same trains with the same consists as NS does in its normal course of operations. Because the DRR is operating NS's own trains, DuPont has effectively adopted NS's own trip plans for each shipment and has no need to develop new trip plans divorced from NS's own operations In contrast, instead of adopting trip plans that it uses in the normal course of its business, NS's Reply developed new trip plans based on the MultiRail software program. These new trip plans are convoluted and inefficient and result in impermissible off-SARR reroutes There was no reason for DuPont or NS to develop new trip plans, when NS already had adequate trip plans based upon its real world operations By operating the same trains as the real-world NS, the DRR effectively implements the real-world NS trip plans, and thus DuPont has no need to reinvent the wheel.

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[20] As it explained in its Opening Exhibit III-C-1, DuPont stopped trains along the route of movement to reflect the spotting and pulling of cars for DRR customers DuPont did not change the numbers of loaded and empty cars because of concern about the legitimacy of NS data. DuPont does not believe this materially impacted the RTC model because it is the stopping and dwelling that has the larger impact on a train's operations and not necessarily incremental changes in train sizes. For example, a train moving along the route with 10 loaded and 10 empty cars will operate in a very similar way as a train with 15 loads and 5 empty cars

[21] NS's analogy of a trip plan on a railroad to a package plan used by FedEx or UPS is misguided and demonstrates NS's complete misunderstanding of current package shipment operations FedEx's and UPS's highly sophisticated operations find the most efficient routing for packages, which may or may not include shipments to a main sorting hub, which NS incorrectly equates to a railroad's classification yard Instead, UPS or FedEx may send packages to a regional hub were a parallel sort is used to route packages to their final destinations

(3) The DRR Uses The Same Car Classification and Blocking Plans As NS's Real World Operations

NS also asserts that the DRR operating plan is infeasible because DuPont did not provide for yards to classify cars, nor did it provide blocking plans used in classifying groups of railcars. [22] Once again, NS is wrong As discussed below, DuPont's Opening evidence included the yards necessary to build DRR's trains, and, in Rebuttal, DuPont has expanded those yards to meet the needs of DRR operations where NS identified legitimate issues.

Additionally, NS's assertion that DuPont did not construct car blocking plans to assist in building DRR trains is also wrong because DuPont, in adopting the same trains used by NS, has effectively adopted NS's existing blocking plans NS has provided no information or data showing its own real-world blocking plans are incapable of providing the services required, and is, in effect, arguing that its own blocking plans used in its every day operations are insufficient NS cannot use its own blocking plans in the normal course of its business, and then turn around and argue in litigation that these same blocking plans are insufficient. In subpart E 1.a ii of this Part III-C, DuPont has modified its Yard classification tracks based upon real-world NS data, and tested their sufficiency using DuPont's Rebuttal RTC model This results in yard sizes and configurations that can accommodate DRR's peak period traffic volumes, and are consistent with NS's real world operations [23]

(4) DuPont Provided The Facilities To Operate Road and Local Trains

NS claims that DuPont did not provide sufficient time and facilities to provide local train service to the DRR's merchandise traffic customers [24] This claim is largely predicated upon

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[22] *See* NS Reply p. III-C-59.

[23] Because DuPont has included some, but not all of NS's traffic, the DRR yards may not match in all cases NS's current yard configurations since it would be contradictory to the idea of SAC to include unnecessary infrastructure for traffic the SARR would not carry.

[24] *See* NS Reply, p III-C-65

NS's assertion that DuPont omitted tens of thousands of local trains. As noted above and addressed in detail further below, DuPont included all of the local trains readily identifiable as moving over the DRR route in the NS train event data Although DuPont has identified some local trains that were inadvertently omitted, they are far, far fewer than NS contends, and DuPont has added those trains to its Rebuttal operating plan

NS also claims that DuPont omitted railroad-owned spur and industrial tracks needed to access many of the DRR's customers As described in Section III-B, DuPont provided all the tracks necessary to serve the customers in Opening that DuPont could reasonably identify in NS's extensively flawed data. In Rebuttal, DuPont has added even more track and structures to serve the additional customers DuPont identified based on certain legitimate issues raised by NS. DuPont has further confirmed the feasibility of its network in its Rebuttal DRR RTC model

(5) DuPont Provided Sufficient Time For Local Trains To Pick-Up and Set-Out Cars

NS claims that the DRR operating plan is infeasible because DuPont's RTC Model simulation did not provide sufficient time to service customers along the DRR's route served by both local and road trains.[25] NS bases this claim on DuPont's alleged failure to provide sufficient time to switch customer operations and to perform operations such as switching power from one end of a train to the other in trains operating in turn service. Once again, NS is incorrect. As described below, DuPont included time at each location necessary to place and pull cars and to provide all necessary switching activities that could be identified from the traffic data that NS produced in discovery But as DuPont has noted, the quality of the NS data was inadequate to determine actual dwell times and locations in most instances Indeed, even NS itself did not use its own data to develop dwell times, but instead relied upon the opinions of its experts.

[25] *Id.*

Similarly, DuPont's dwell times are based on the vast experience of its operating expert, Richard H. McDonald, and are consistent with normal railroad operating practices and prior STB case precedent.

(6) DuPont Provided The Special Services To Meet The Needs of DRR Shippers

Finally, NS states that the some of the traffic that the DRR carries requires "special" equipment and facilities to meet customer needs.[26] These special services include, but are not limited to, transload sites with specialized equipment for handing chemicals and allied products, automobile facilities, and intermodal facilities. NS argues that DuPont's failure to provide these special facilities invalidates DuPont's DRR operating plan.

Once again, NS is in almost all cases incorrect. For example, DuPont provided eight (8) automotive yards especially necessary to handle the DRR's automotive traffic. In addition, DuPont provide intermodal yards and ramps for the loading and unloading of intermodal traffic. As described in detail in Section III-B, DuPont did adopt NS's Reply infrastructure and investment costs in those instances where NS correctly pointed out additional facilities were necessary, however, even then, DuPont had to make corrections to NS's overstated Reply analyses.[27]

ii. DuPont's Operating Plan Was Prepared By Experts With Many Years Of Railroad Operating Experience

NS attempted to distract the Board from more relevant issues in the case by questioning the competence of DuPont's operating witnesses and inferring that they do not have the

[26] *Id.* p. III-C-66

[27] For example, NS added 14 transload sites that it alleges the DRR needs to handle certain traffic, but 3 of the sites added by NS are not even on the DRR network. *See* Section III-B-3above

qualifications to address certain operating issues [28] NS's salacious allegations are far from the truth.

First, as indicated in its Opening Narrative, DuPont's Operating plan, including the development of the train service plan, was performed by DuPont's witness Richard H. McDonald [29] Mr. McDonald has over 42 years experience in increasingly responsible positions with both Eastern railroad companies, including the New York Central ("NYC") and Penn-Central ("PC"), and with Western railroad companies, primarily the Chicago and Northwestern Railroad ("CNW") While with the NYC and PC, Mr. McDonald worked as an officer in the railroads' operating departments and was assigned duties in the states of Ohio, Indiana and New York, all states in which the DRR operates

Since his retirement from the CNW, Mr. McDonald has been actively involved in the railroad consulting industry, including working for both eastern and western Class I railroads performing operational adjustments and analyses. He also played a key role in the restructuring of the Ferrocarriles Nacionales de Mexico ("FNM") into an independent, modern transportation company before its privatization and disposition into four separate railroad companies Clearly Mr. McDonald is intimately familiar with the operating requirements of carload railroads, including eastern carload railroads like the DRR.

Second, contrary to NS's inferences, DRR's operating plan was developed exclusively by Mr McDonald and not DuPont witnesses Burris, Fapp and Humphrey As DuPont indicated in its Opening narrative, Mr. Burris was responsible for the development of the operating statistics based on the output of the RTC model and the operating plan, while Messrs. Fapp and Humphrey were responsible for inputting the operating plan as prepared by Mr McDonald into the RTC

[28] *See* NS Reply, p III-C-10
[29] *See* DuPont Opening, p III-C-1

model Mr. Burris has over 30 years experience consulting in the railroad industry both for shippers and freight railroads, and is more than qualified to develop operating statistics based on the operating plan developed by Mr McDonald [30] Likewise, both Messrs Fapp and Humphrey are eminently qualified to run simulations in the RTC model, and, in fact, were responsible for the RTC simulation in the *Otter Tail* case, which was the first SAC case in which a shipper's operating plan was accepted by the STB [31] NS's claims that DuPont witnesses Burris, Fapp and Humphrey developed the DRR operating plan are simply wrong

b. Any Limitations On DuPont's Operating Plan Are A Result Of NS's Failure To Provide Accurate Data

i. NS Cannot Run Away From Its Own Flawed Data

In Exhibits III-A-2 and III-C-1 of its Opening Narrative, DuPont detailed the numerous flaws and inconsistencies with NS's car and train movement data The flaws included, but were not limited to

- Duplicate milepost
- Missing milepost
- Missing stations
- Severe imbalances in arrival and departure statistics
- Out of sequence train and car movement data
- Missing car and train event records
- Missing load and empty statistics
- Incorrect train statistics

Because of the extreme discrepancies in the car and train event data, DuPont had to spend an inordinate amount of time attempting to cleanse and massage the data into something useable.

[30] It is because of this vast experience that Mr. Burris was selected to be an outside director for the South Central Florida Express, a Class III common carrier freight railroad.

[31] NS also misstated and mischaracterized Mr Fapp's prior railroad experiences in its narrative. As indicated in his resume included in DuPont's Opening narrative, Mr. Fapp was an officer of three railroad companies, The San Manual Arizona Railroad, The Magma Arizona Railroad (later the BHP Arizona Railroad) and the BHP Nevada Railroad Contrary to NS's inference, these three railroads were not simply "proprietary" railroads, but three separate and distinct Class III common carrier freight railroads under the purview of the STB and the Federal Railroad Administration See Rebuttal e-workpaper "The Pocket List of Railroad Officials pdf." In addition to his financial and administrative responsibilities, Mr. Fapp was also responsible for the operations of the railroad's dispatchers and dispatching function, and is intimately familiar with train operations and regulations

In its Reply narrative, NS attempted to dismiss the flawed data it provided by claiming "competent" witnesses would have known the NS data was flawed, and used other sources of data to develop an operating plan [32] NS's position is wrong for several reasons, but primarily it is wrong because NS cannot run away and hide from its own deeply flawed data provided in discovery without any qualifications as to its accuracy or completeness

In its November 19, 2003 *AEPCO* decision, the STB stated that the railroads have a responsibility to provide the information necessary for the STB to exercise its regulatory oversight·

> Rail rate cases are not ordinary commercial litigation, given the regulated nature of rail rates charged to captive shippers Operating in an industry subject to regulatory oversight of rates charged on captive traffic, railroads have a responsibility to provide information needed by the Board.[33]

In this instance, NS has failed to meet its responsibility. NS cannot provide extremely flawed data in discovery, data that NS acknowledges is flawed as discussed below, and then turn around and hide from this flawed data by stating the shipper should have used different data. As stated by the Board, NS has a responsibility to provide the information necessary for the STB to perform its regulatory oversight. The STB cannot allow regulated common carriers to shirk their responsibility to provide the data necessary to develop a SAC analysis.

ii. NS Acknowledges The Flaws In Its Own Data

As indicated above, DuPont included in its Opening Narrative Exhibit III-C-1, which listed the numerous flaws with NS's train event data, and Exhibit III-A-2, which listed the major issues with NS's car event data. In response to these Opening Exhibits, NS submitted Reply Exhibit III-C-7, in which NS claims to address the flaws highlighted by DuPont DuPont has

[32] *See* NS Reply, pp. III-C-24-27
[33] *See AEPCO*, pp 224-225

prepared Rebuttal Exhibit III-C-1, which addresses NS's Reply Exhibit III-C-7, and discusses why NS's statements are misleading, in most cases, simply wrong.

One of the compelling facets of Reply Exhibit III-C-7 is the number of times NS acknowledges that its own data is flawed As discussed in more detail in DuPont Rebuttal Exhibit III-C-1, NS acknowledges that its train event and car event data contains the following critical flaws.

1. The same milepost assigned to multiple stations in different states [34]
2. Train event data contains erroneous milepost.[35]
3. Train event data and car event data contains missing station information mileposts.[36]
4. Train event data contains multiple-mileposts per station [37]
5. Train event data contains an imbalance in arrival and departure events [38]
6. Train event data contains out of sequence events [39]
7 Train event data contains incorrect train statistics [40]

NS attempts to minimize its data flaws by making dismissive comments such as calling the flaws "minor data issues," or stating "the data was available elsewhere." As DuPont addresses below and in Rebuttal Exhibit III-C-1, NS's responses are nothing but hot air

(1) Train and Car Event Data Cannot Be Accurately Combined

Throughout its Reply Exhibit III-C-7, NS repeatedly stated that DuPont could have solved many of the flaws in NS's train event data by supplementing the train event data with car

[34] *See* NS Reply Exhibit III-C-7, p 45
[35] *Id*, p. page 47
[36] *Id*, p page 48
[37] *Id*, p page 49
[38] *Id*, p. page 50
[39] *Id*, p page 52
[40] *Id*, p. page 60

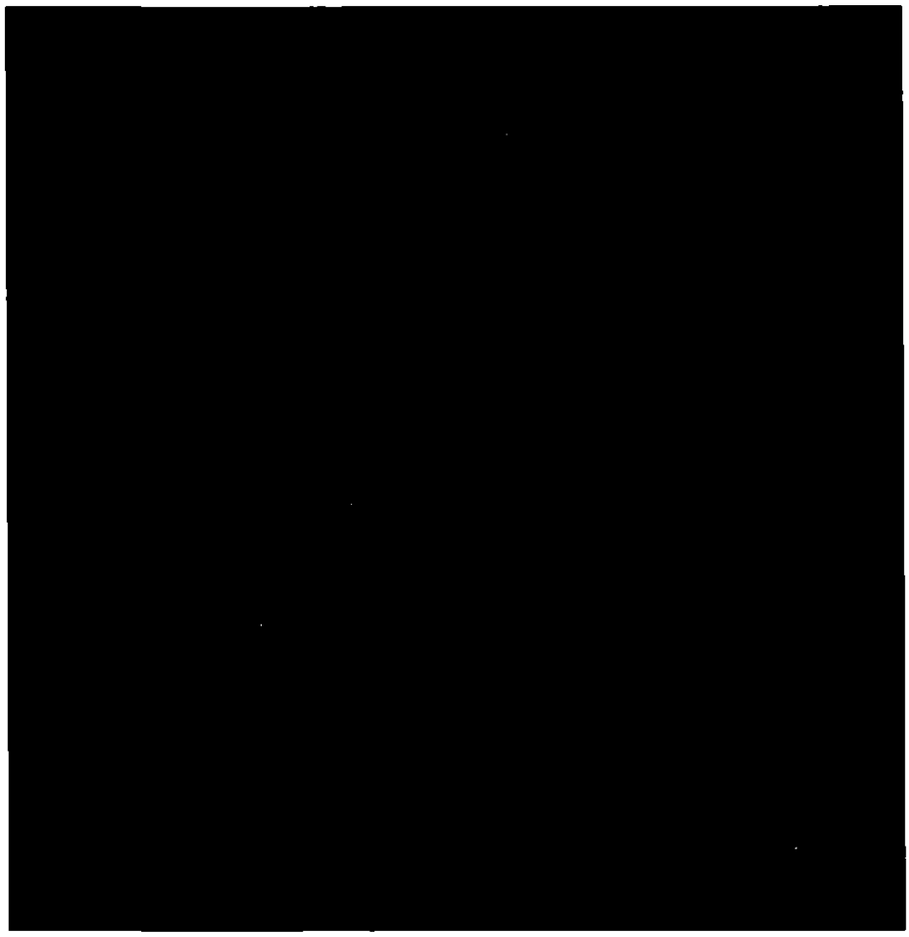
event data.[41] NS's claim is in fact a red herring. As discussed above and in Rebuttal Exhibit III-C-1, NS's car event data was replete with errors as was its train event data. The impact of combining one set of erroneous data with another set of erroneous data just leads to greater distortions.

DuPont includes several examples of this issue in its Rebuttal Exhibit III-C-1, but repeats one of the examples here to demonstrate the problem with combining car and train event data. {{[redacted]}} As shown in Figure 1 below, the issue train appears to make an incongruous jump based on the train event data reported by NS.

[41] *See*, e.g., NS Reply Exhibit III-C-7, p. 52 "this issue would have easily been remedied had DuPont not excluded the car-event data from its analysis," or NS Reply Exhibit III-C-7, p. 53 "car-specific data could easily have been used to clarify any inconsistencies in the train sheets."

PUBLIC VERSION

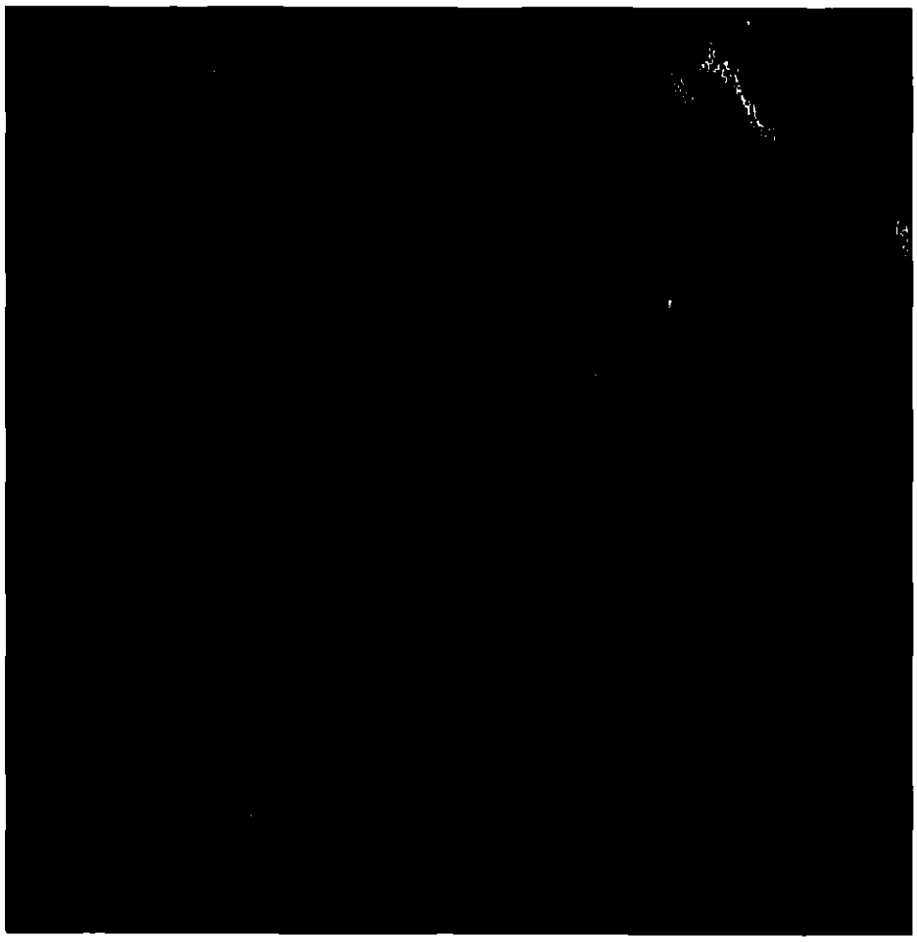
Figure 1
Plot of Partial Route of Train 407-03/13/2009-0
Based on Departure Train Events



As Figure 1 above shows, the train appears to make an uncalled for jump in {{ }} NS's response to such an anomaly is to use car event data to "clarify" the route of movement for this train NS asserts that anomalies in the train event data can simply be overcome by use of car event data to clarify any issues However, when car event data is combined with train event data, in an attempt to clarify the routing of this particular train, the results become even more jumbled as shown in Figure 2 below.

PUBLIC VERSION

Figure 2
Plot of Partial Route of Train 407-03/13/2009-0
Based on Departure Train Events And Car Events



As shown in Figure 2 above, combing the car event data with the train event data not only does not clarify the routing for this particular train, it muddies the waters even more Instead of showing whether the train's routing actually made the incongrous jump {{ }}, the car event data indicates the train took an even more unrealistic routing by zig-zagging in and round the area.

The additional illustrations included in DuPont Rebuttal Exhibit III-C-1 demonstrate that this is not a single issue Both the NS car event data and train event data contain numerous flaws These individual flaws create data analysis problems when they are encountered

singularly. In other words, a missing milepost or a misstated date stamp in one train record can be overcome The real issue is the flaws in NS's data are so numerous that they compund themselves Combining a missing milepost with an inaccurate date stamp and with an out of sequence station leads to a distorted picture of the train's true operation. The diagram in Figure 2 above illulstiates the problem of the compounding of errors when trying to apply both NS's car and train event data.

(2) NS Had To Resort To Opinions To Develop Dwell Times Because They Could Not Be Identified From NS Data

In its Opening evidence, DuPont explained that it could not calculate train dwell times from NS train movement data because of the lack of arrival event information, and the out of sequence nature of the arrival events that did exist in the train movement data [42] Because of this, DuPont had to rely upon other sources to develop train dwell times.

In its Reply Exhibit III-C-7, NS stated that DuPont could have developed train dwell times from the car event and locomotive event data provided in discovery, which DuPont ignored [43] NS may "talk the talk" about using car event and locomotive event data to develop train dwell times, but it does not "walk the walk" because even its own experts could not use these sources to develop train dwell times for NS's own Reply analyses. As discussed in Rebuttal Exhibit III-C-1, NS's workpapers show that its experts considered using car event data to develop dwell times, but apparently rejected the use of this data for dwell calculations for the same reason DuPont did not use car event data to develop train dwell times. Namely, car event

[42] *See* DuPont Opening Exhibit III-C-1, p. 8
[43] *See* NS Reply Exhibit III-C-7, p 50

data does not produce consistent train dwells because cars move on multiple trains and loading and unloading stations can handle multiple trains at a time.[44]

Instead of using car event data to develop dwell times for its operating plan as it stated DuPont should have done, NS relied on the opinions of its operating experts to estimate dwell times at different locations along the route.[45] The reason for this is obvious from examining NS's Reply workpapers NS's car event data has so many flaws as to make it unusable for dwell time calculations on most traffic.

In Rebuttal, DuPont is continuing to rely on its opening dwell time of 30 minutes per location for non-coal trains switched at industry locations. This dwell time figure is based on the expert opinion of DuPont's operating witness Richard McDonald, who, as explained above, has extensive experience in eastern railroad operations The 30 minutes per industry train switch is also consistent with times used in other SAC cases For example, in its filing with the Board in *IPA*, IPA included the testimony of railroad operating expert Paul H. Reistrup, an expert with over 50 years of railroad operating and engineering experience and former President of Amtrak.[46] In developing dwell times for switching at industries along the stand-alone right of way, Mr Reistrup allocated 30 minutes to place and pull cars from industry along the route.[47]

The 30 minutes allowed for industry switching is also conservative when compared to times shown by other railroad companies to switch industries, and shows the extreme overstatements in NS's assumed dwell times. In *FMC*, the UP, the defendant railroad in the case, performed a study to determine the time it took to switch a chemical manufacturing plant in

[44] *See* NS Reply e-workpaper "Dwell_Time_Summary.docx "

[45] *See* NS Reply e-workpapers "NS Reply RTC Simulation Locations-Specific Work Events.xlsx," and "Dwell by location in NS Reply RTC.xlsx."

[46] *See IPA* Opening Evidence (Public Edition), p. IV-1.

[47] *See IPA* Opening Evidence (Public Edition), p III-C-30 Mr Reistrup noted that these times could be achieved because the railroad pre-blocked cars before delivery. As discussed further below, the DRR also pre-blocks cars on trains based on NS's own blocking plans Therefore, like in *IPA*, it is reasonable to assume 30 minutes is sufficient to place and pull cars from industry.

Lawrence, KS UP determined that it took on average 41 seconds per car to switch the industry.[48] Assuming, for argument's sake, that UP's estimated time was low, and the actual time it takes to switch industry operations is twice this amount (82 seconds), it would take on average approximately 18 minutes to switch the average industry based on the average 13 cars per industry switch shown in NS's car event data.[49] This demonstrates that the 30 minutes used by DuPont is more than adequate to service DRR industries. Moreover, it clearly demonstrates that the times NS's experts used, some of which exceed 3 hours, are dramatically overstated and out of line with current railroad operations.

Based on the fact that DuPont's dwell time at industry for non-coal shipments developed by Mr McDonald is consistent with the opinion of other railroad experts, and based on the time that other railroads have determined it takes to switch industry locations (which is significantly lower than the times assumed by NS's experts), DuPont continues to use its Opening position on dwell times to switch industries along the DRR route

In its Reply evidence, NS also submitted a study of dwell times for unit coal train origins and destinations along the DRR route DuPont has reviewed NS's calculations and agrees with NS's dwell time estimates for unit coal trains. DuPont has updated its RTC model to assume NS's unit coal train dwell times

iii. DuPont included All Trains NS's Data Indicated Moved Over The DRR

NS saves the majority of its overheated rhetoric for its allegation that DuPont improperly excluded over 60,000 trains from its train group. NS further states that DuPont had all of the data

[48] *See FMC*, p. 753, note 105. The shipper in the case determined it only took 24 seconds per car to switch the industry

[49] *See* DuPont Rebuttal e-workpaper "Rebuttal Local Peak Period RTC List (With Consist Changes and Dwell).xlsx," worksheet "Local RTC List," columns CF to CI, which show on average 13 cars per industry stop Assuming 82 seconds per car and 13 cars per stop results in 1,066 seconds or 17.7 minutes of switching time

it needed in DuPont's so-called "Car/Train Database," which allegedly shows that DuPont had substantially understated the number of DRR trains. Finally, NS claims that DuPont should have looked beyond car and train event data and used "other" sources of data to add trains to the DRR system.

In actuality, NS's claims are nothing more than an artifice to increase the number of trains operated by the DRR, and thereby overstate the DRR's operating costs. NS relied upon an overly-broad definition of "on-SARR" to include trains that both car and train event data show only touch the DRR at one location, and do not actually traverse the SARR. To include trains that may cross the SARR at a single location, but not operate over the SARR is not representative of the DRR's traffic. Moreover, NS included over 5,000 trains, which, based on car event data, never touch the SARR in any location, but NS alleges should be included in the DRR train group. Overall, NS dramatically overstated the number of trains moving on the DRR.

(1) Train Event Data Shows More Trains On SARR Than Car Event Data

In its Opening evidence, DuPont identified 185,568 trains that moved over the DRR system during its base year. NS claims that this number is understated, and if DuPont had used car event data instead of train event data, it would have identified substantially more trains moving over the DRR system. NS's claim is wrong.

DuPont compared the trains included in its opening train group, which are primarily based on train movement data, to the same trains included in the NS' car event data. In other words, DuPont looked to see how many of the trains it included in its train group also were included in the car event data NS contends is the panacea for its data issues. As shown in Table III-C-1 below, the number of trains included in NS's car event data is less than the number of comparable trains shown in the NS train event data.

Table III-C-1
Car Event Trains versus Train Event Trains

Item	Number of Trains
(1)	(2)
1. Car Event Trains With Multiple Points On-SARR	173,992
2. Car Event Trains With One-Point On-SARR	8,950
3. Total Trains In Car Event Data	182,942
4 Total Trains Included in DRR Train List	185,568

Source. Car Event v Train Event Trains v01.xlsx"

As shown in Table III-C-1 above, DuPont included 185,568 trains in its Opening base year train list. When looking at these same trains using car event data, what one sees is that only 173,992 trains report more than one point on-SARR. As we indicated above, saying a train traverses a SARR because it shows a single point on the stand-alone system would overstate the trains included because it would include trains that may cross the SARR, or use a yard along the SARR route, but do not actively move over the stand-alone system.[50] Even if DuPont were to expand its analysis to include trains in the car event data that showed one or more points on the DRR, the total number of trains would still be less than the number of trains included in the DRR's base year train group as shown in Table 1 above.

The vast majority of the trains that NS alleges DuPont improperly excluded from its train group (41,702 of the alleged 61,610 missing trains) were included in the NS train event data but showed no movements over the DRR route In other words, nearly 68 percent of the trains allegedly missing are included in the NS train event data, but show no movements across the DRR system This is not because NS's train event data is not picking up these trains, but rather

[50] For example, NS's Fort Wayne, IN yard has multiple mainlines feeding into the yard, of which two are constructed by the DRR A train moving into the Fort Wayne yard from a line not constructed by the DRR would likely report one- point on the DRR system, i.e., Fort Wayne While this train reported one point on-SARR, it is properly not included in the DRR train group since it did not actually traverse the DRR system

because these trains simply are not moving over the DRR system based on the NS's own train data.

NS went to great lengths to overstate the issue of so-called "missing trains." For example, NS discusses three (3) different scheduled trains that NS claims DuPont failed to include in its train analysis.[51] NS's train event data indicates that many of these trains did not operate over the DRR, and NS's car event data is inconclusive about whether or not these trains operate on the DRR. For example, data provided by NS in discovery indicates that one of these trains, {{ }}, is a {{ }}, which nominally operates daily service.[52] However, even though this train nominally operates every day, i e , 365 trains per year based on NS local train definitions, NS's car event data only shows 124 movements for this train. In other words, NS would include these trains mainly on the unsupported description of where a train should move, and not where it has been proven to move To be conservative in its cost determinations, however, DuPont's Rebuttal operating costs reflect the inclusion of these 699 allegedly "missing" trains serving {{ }}. This reflects a 0.003 percent increase in trains over DuPont's opening train count.

Of the remaining allegedly missing trains, 3,296 were Amtrak trains, haulage trains, commuter trains, and foreign trains that would not operate over the DRR system, and were properly excluded from the DRR system.[53] Additionally 5,306 trains have no train event records, while 4,421 trains only show one train event on-SARR. As clearly explained above, only

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[51] *See* NS Reply, pp: III-C-16 -19.

[52] *See* DuPont Rebuttal e-workpaper "Yards xlsx," which is a copy of NS's file showing local and yard train specifications

[53] DuPont has not taken any revenues associated with these trains moving over the stand-alone DRR system, and therefore is under no obligation to include these trains in its train group. NS apparently agrees with the point, but still included these train as "missing" trains in its evidence. *See* NS Reply, p III-C-12

showing one event moving on the SARR system is clearly not indicative of a train moving over the SARR

Finally, in reviewing NS's Reply analysis, DuPont agrees that it inadvertently omitted just 6,855 of the more than 60,000 allegedly missing trains that should have been in its traffic group, but were inadvertently excluded due to a train coding error. DuPont has added these inadvertently excluded trains to its Rebuttal train list

(2) NS Included Trains That Are Not In The Car Event Data

NS repeatedly complains that, if DuPont had used car event data instead of train event data, it would have identified all the allegedly missing trains. However, even if this were true, which it clearly is not based on the discussion above, the number of trains allegedly missing would have been 5,377 trains fewer than NS has counted This is because NS included over 5,000 trains even though the car event data shows none of these trains moving over the DRR system Simply stated, NS included these trains even though neither the car event data or the train event data indicated these trains should be moving over the SARR system.

Of these 5,377 trains, 3,296 of them were the trains discussed above that DuPont categorically excluded because they are not trains that would move over the DRR system The other 2,081 trains are trains that NS included even though they are not shown in the car event data moving over the DRR route NS ostensibly included these trains based on other data, including train schedules and train lists provided in discovery

NS claims that it used other sources of information provided in discovery, including road train and local schedules, to help identify trains that moved over the DRR Such a strategy may work if these supplemental sources of data exactly matched the electronic train and car data, but DuPont found numerous situations where this was not true. DuPont identified numerous TRN

that indicated where trains moved one way in NS's schedule files, but moved over a different route in the car and train event data [54] For example, NS's schedules provided in discovery indicate {{[redacted]}} is scheduled to move between {{[redacted]}}. A minority of the trains in the NS's electronic train data show trains moving between these stations, but the data also shows nearly 60 percent of the base years trains with this TRN moving between {{[redacted]}} [55] If DuPont had relied upon this erroneous train schedule data, it would have misrouted or excluded significant amounts of DRR traffic.

More importantly, one of the files that contain local train schedules that NS stated DuPont should have used to develop its train list does not provide any routing information [56] Instead, the file shows only origin and destination locations. While this can provide some assistance on local trains that operate in straight-away service, it provides no help on routing when the train operates in turn service, e g , moving to and from the same yard This is especially true on trains moving from a yard that may be on the DRR route, but has other line segments not built by the DRR In this way, there is no way to tell from this data whether the train moved over the DRR or not Strategies such as this do nothing but artificially increase the number of trains moving over the DRR.

c. DuPont's Operating Plan Accounts For Reciprocal Operations

In Reply, NS argues that DuPont's operating plan is flawed to the extent it does not account for reciprocal operations with connecting carriers consistent with the joint use and interline agreements NS has with other carriers.[57] Specifically, NS claims that DuPont's operating plan. 1) does not provide for reciprocal blocking of cars being interchanged with its

[54] *See* DuPont Rebuttal e-workpaper "Train Event vs Schedule.xlsx."
[55] *Id.*
[56] *See* DuPont Rebuttal e-workpaper "Yards xlsx," which contains listings of NS local and yard trains provided in discovery.
[57] *See* NS Reply, pp. III-C-68-71

connecting partners, 2) assumes all interchange agreements provide for run-through power when in fact several agreements specifically exclude run-through power; 3) uses distributed power inconsistently with real world operating practices; 4) allocates responsibility for fueling and inspecting locomotives inconsistent with inter-carrier agreements and real world operating practices; and e) makes no provision for running repairs to foreign railcars on the DRR network For the most part NS's claims are incorrect or intentionally misconstrue DuPont's operating plan for the DRR In those few instances where NS's arguments have merit, DuPont has adjusted its operations in Rebuttal to account for proper handling of each of these issues. Each item is discussed below

i. Pre-Blocking Cars Forwarded to Connecting Carriers

In Opening, DuPont's operating plan failed to account for classification of cars in yards, except for cars originating or terminating in specific yards As discussed *infra*, DuPont has adjusted its operating plan to account for required classification switching in yards. DuPont adjusted the car counts by first examining the car counts NS proffered that require classification in the DRR yards. DuPont rejected NS's cars counts for the following reasons First, NS's car counts are a result of NS's use of the MultiRail program. As fully discussed later in this Part III-C, NS's made for litigation MultiRail results are unsupported and unreasonable. For example, the classification car counts provided by NS in Reply,[58] which NS sources to MultiRail[59], are hard-coded numbers and unverifiable. When requested to provide the source for these car counts, NS provided yet another spreadsheet[60] with hard-coded numbers that do not match the numbers provided in its Reply filing. Further, when NS did finally provide access to MultiRail on a limited basis, DuPont's analysts were able to review the classification car counts included in

[58] *See* NS Reply e-workpaper "Reply Yards – Operations xlsx."
[59] *See* NS Reply, p III-C-176
[60] *See* NS Reply e-workpaper "Yard_Volumes_DRR xlsx" provided by NS on January 17, 2013

MultiRail and found that they did not match the car counts from either of the two previous sources provided by NS![61] NS's multiple choice classification car counts are clearly unsupported and unreliable.

NS, however, did explain that it develops classification car counts based on cars originating, terminating and moving through yards based on MultiRail that need to be classified, excluding "block swaps" or cars that move through yards without being classified.[62] As fully addressed later in Part III-C, NS' MultiRail is fatally flawed and cannot be relied on for operating statistics including car counts. As a result, in Rebuttal, DuPont has developed classification car counts from the car event data provided by NS in discovery in the same manner as NS described above, i.e., cars originating, terminating and moving through yards requiring classification, excluding block swaps.[63] The loaded and empty cars included in DuPont's classification car counts correspond to NS's *actual* trains that move on the lines than comprise the DRR rather than the "made for litigation" trains in NS's MultiRail analysis.

ii. Handled Run Through Power

NS states that DuPont's operating plan improperly assumes that all interchange agreements allow for run though power and that "this assumption contradicts the clear terms of numerous NS interline service agreements, which do not provide for run-through power."[64] NS is correct that some interline service agreements do not permit run-through power. In Rebuttal, DuPont's experts reviewed each of the run-through agreements and found that in 28 instances the

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[61] *See DuPont Rebuttal e-workpaper "Yard Volume 2010.pdf,"* this document was created by running the MultiRail Report function under Report Manager, Traffic Volume, "Yard Summary" and printing to a pdf file.

[62] *See* NS Reply e-workpaper "Terminal Capacity Requirement Tracking Process for Hump Classification Yards.doc" pp 10-11. This document can be found in NS's III-C workpapers.

[63] To accomplish this, car event records associated with locations on the DRR were examined and all cars moving through yards that changed train symbols were included in the car counts, unless the block name remained the same. Specifically, if an entire block of cars changed train symbols, but did not change block name it was considered a "block swap." *See* rebuttal workpaper "Plan Block Analysis v11.xlsx."

[64] *See NS Reply, p. III-C-74*

agreements prohibited run-through power at specific locations and with a specific connecting carrier.[65] In Rebuttal, DuPont has adjusted the RTC model to reflect the removal of DRR locomotives from trains interchanged to the specified connecting carriers at these locations and the adding of DRR locomotives to trains received from the specified connecting carriers at these locations.

iii. Distributive Power

NS argues that the DRR's use of distributive power ("DP") is contrary to NS operations and that the existing run-through power agreements do not require the participating carriers to deliver trains with locomotives in a DP configuration.[66] NS's arguments are inaccurate First, the DRR is not required to operate in the same manner as NS. There are numerous advantages to using locomotives in a DP configuration as evidenced in the article NS uses to support its position that DP is inappropriate. For example, pulling long trains through curves creates tremendous tension on the inside rail of the curve. By using DP power to push cars through the curves in addition to pulling cars through the curves reduces the tension and wear in curves. In addition use of DP power reduces draw bar tension and thereby wear on car knuckles. DP power also improves braking performance, and improves fuel efficiency. For these, and many other reasons articulated in this article,[67] carriers are increasing the use of DP power As a result, DuPont continues to assume in its RTC model use of DP power on road trains, especially since the peak period is in 2019 and, given current trends, use of DP power will be more prevalent than it is today.

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[65] A list of the carrier/location specific interchanges where run-through power is prohibited is included with DuPont III-C Rebuttal workpapers in electronic file "*No run through power.xlsx*"

[66] *See* NS Reply, pp III-C-77-78

[67] *See* NS Reply e-workpaper "Distributed Power Trains Magazine Article pdf (Freight Train Unbounded Distributed Power: it's a bigger deal than you think " *Trains* (September 2010)

iv. Fueling and Inspecting Locomotives

NS incorrectly argues that "DuPont assumes that fueling and inspecting locomotives used in interline service would, in most instances, be the responsibility of connecting carriers rather than the DRR."[68] NS bases its argument on two statements in DuPont's Opening evidence: (1) that the DRR will receive locomotives in interchange filled with fuel and that do not require 92-day inspections while the locomotives are on the DRR system; and (2) that "for all non-coal trains that move at least 750 miles on the DRR...locomotives on the train will need fueling and or a 92-day inspection at one of the DRR yards. ."[69] NS intentionally misinterprets the facts and DuPont's statements in order to make it appear that DuPont's operating plan does not fulfill the common reciprocity with connecting carriers NS's arguments ignore the fact that all of DuPont's locomotives on originating trains are fully fueled and serviced prior to departure from the originating yard. Further, because ES44 locomotives have a fueling capacity of 5,000 gallons[70] and the average fuel consumption on the DRR is 2.28 gallons per mile, a fully fueled locomotive has a range of approximately 2,193 miles (5,000 gallons/2.28 gallons per mile).

Given these facts, NS's argument is contradicted by its own evidence. NS clearly states just two pages earlier in its Reply text, "...the average length of haul for DRR trains would be 286 miles for general freight trains, 223 miles for coal trains and 571 miles for intermodal trains."[71] Given the fact that DRR trains are fully fueled and serviced before departing an origin, the average length of haul for DRR trains is 571 miles or less, and locomotives are fueled and serviced again if they travel more than 750 miles, virtually every train that the DRR provides in interchange will have a minimum range of 1,622 miles before it must be refueled (2,193 less 571

[68] *See* NS Reply, p III-C-82
[69] *Id.*
[70] *See* Rebuttal e-workpaper "GE Evolution Series Locomotive specifications.pdf"
[71] *See* NS Reply, p III-C-80.

miles). This procedure is consistent, for example, with the NS/BNSF agreement cited by NS in its Reply evidence[72], which indicates that {{[redacted]}}, and DRR would expect its connecting carriers to comply with these same agreements. Thus, the implication that DuPont's operating plan results in the DRR somehow shirking its responsibility by providing locomotives without sufficient fuel is preposterous and is nothing more than inflammatory rhetoric.

v. Running Repairs To Foreign Railcars

NS argues that DuPont's operating plan fails to meet its reciprocity obligations with connecting carriers because it fails to provide car repair facilities and personnel required to make running repairs to foreign railcars while they are on the DRR system, even though such repairs are required pursuant to the AAR interchange rules.[73] NS's argument is incorrect for three reasons First, NS fails to recognize that, in Opening, DuPont provided a total of 15 91 miles of car repair tracks at 45 yards. In contrast, NS provided only 9.97 miles of car repair tracks at 27 yards In Rebuttal, DuPont increases car repair tracks to 17 50 miles of track at 51 locations.[74]

Second, in Opening, DuPont provided 269 railcar equipment inspectors, part of whose task is to make minor (running) repairs to railcars during the inspection process In Reply, NS provided 464 equipment inspectors, and in Rebuttal, DuPont provides 377 car inspectors at 51 locations.

Third, while NS argues that DuPont has failed to provide car repair facilities and personnel required to make running repairs (i e., car shops) and states that the AAR Interchange Rules require participating carriers to make such repairs to foreign equipment, NS fails to

[72] *See* NS Reply, p III-C-83. ES44AC locomotives have a fuel capacity of 5000 gallons and a burn rate of 2 28 gallons per mile. Intermodal trains on the DRR travel on average the greatest distance of all train types, which is approximately 571 miles. Thus locomotives at the end of a run on the average intermodal train have 3,698 gallons, at interchange, i.e , far in excess of the {{[redacted]}} gallons required by the BNSF/NS agreement

[73] *See* NS Reply, p III-C-88.

[74] *See* DuPont Rebuttal Part III-B-2.

mention the part of the AAR Interchange rules that requires the owning carrier to pay for any such repairs [75] Stated, differently, NS claims DRR has an obligation to make running repairs to foreign cars, but the owning carrier must pay for these repairs and such payment is sufficient to cover the cost of any facilities and personnel that the DRR would incur. As neither DuPont nor NS has included the revenue from foreign car repairs, it is not appropriate to include the cost of the facilities or personnel required to make these reimbursable repairs

d. DuPont's Operating Plan Properly Handles TIH Shipments

NS alleges that DuPont's operating plan fails to properly handle TIH shipments and makes no provision to comply with federal and state laws and regulations regarding these shipments. Specifically, NS claims that DuPont's operating plan[76]:

1 Is not capable of tracking the movement and location of individual TIH cars as required by law.. and makes no attempt to track the movement [of] TIH shipments ..

2 DuPont's operating plan and RTC simulation do not limit the speed of trains carrying TIH commodities to 50 mph, as required by federal law and industry best practice

3 DuPont's operating plan does not provide the personnel that the DRR would need to comply with the rules and best practices associated with the movement of TIH commodities and other hazardous materials.

NS's allegations are without merit First it must be pointed out that DuPont relies on NS actual trains for the movement of all traffic on the DRR. Therefore, DuPont handles the TIH shipments in exactly the same manner as does NS today. This includes not only specific trains, but as discussed in the previous section of Part III-C, DuPont's operating plan accounts for yard classification switching of all cars based on NS's actual car event data Thus to the extent TIH shipments are actually classified en-route, the DRR provides that switch service. Each of NS arguments is addressed below.

[75] *See* DuPont Rebuttal e-workpaper "AAR Interchange Rule 1.2 a (6) pdf"
[76] *See* NS Reply, p. III-C-93.

i. The DRR Can Track TIH Shipments

NS's claim that the DRR is not capable of tracking TIH shipments is completely unwarranted. DuPont's operating plan tracks all shipments using two different methods. First, DuPont's DRR employs a Positive Train Control ("PTC") communications system which allows for tracking and tracing of all trains on the DRR system via satellite on an ongoing basis. Thus, the DRR knows the exact whereabouts of all trains moving TIH shipments at any time. Second, as explained in DuPont's Opening evidence,[77] the DRR uses the services of RMI's Transportation Management System, which includes modules for yard and inventory control, waybilling, train operations, EDI consists, etc. This system allows the tracking and tracing of all cars on the DRR system at all times. NS's claim that the DRR is not capable of tracking the movement and location of TIH shipments is totally without merit.

ii. DRR Trains Carrying TIH Shipments Are Limited To 50 MPH

NS correctly points out that in DuPont's Opening evidence its operating plan and RTC simulation did not limit trains handling TIH commodities to a maximum of 50 mph. In Rebuttal this oversight has been corrected and all trains moving TIH commodities in the RTC simulation have been specifically identified and restricted to a maximum speed of 50 mph.

iii. The DRR Has The Appropriate Personnel To Handle TIH Shipments

NS argues that DuPont's staffing plan does not provide sufficient personnel to comply with Federal safety regulations and functions related to DRR's shipments of TIH traffic. Contrary to NS's assertions, DuPont has provided the necessary personnel to comply with Federal Regulations related to shipments of TIH traffic. As stated in DuPont's Opening evidence, the Manager – Environmental has overall responsibility for complying with Federal

[77] *See* DuPont Opening Exhibit III-D-2, pp. 23-24.

regulations regarding TIH shipments. The Manager – Environmental is aided by all regional transportation officers and managers who are responsible for shipments of TIH commodities in the territories for which they are responsible. Each of these officers and managers are well versed in the rules and regulations covering TIH shipments and other environmental issues It is their responsibility to ensure that the handling of TIH commodities is performed in accordance with those rules and regulations and for immediate reporting of any accidents or other issues to the proper authorities. DRR's Operations Control Office is the single point designated to make this contact in the case of an accident or miss-handling Attempting to report from multiple sources, as suggested by NS, complicates and confuses the issue and is inappropriate The training of all DRR field officers on environmental and TIH shipment rules and regulations is handled by the Safety Department, in concert with the Manager Environmental Testing.

NS's suggestion that another separate department, with separate employees is necessary to handle TIH shipment issues that are not separate from other tasks performed by responsible field officers is another example of NS unnecessarily adding layers of employees and management to the DRR system.

e. DuPont Has Reasonably And Properly Included Cross-Over Traffic In "Leapfrog" Service

NS has inappropriately isolated and criticized DuPont's use of a certain class of cross-over traffic, which NS refers to as moving on trains in "Leapfrog" service, as "contrary to fundamental SAC principles and inconsistent with the limited purpose of cross-over traffic articulated by the Board in past cases "[78] So-called Leapfrog service refers to movements comprising two distinct DRR segments with a residual NS segment bridging the two DRR

[78] *See* NS Reply, p III-C- 103.

segments.[79] As demonstrated in Part III-A of this Rebuttal, Leapfrog service is not peculiar to the DRR, as many other railroads, including NS itself, use such operating arrangements in the real-world. In this section, DuPont also demonstrates that its use of Leapfrog service is consistent with SAC principles and does not manipulate or distort the SAC analysis

Notably, NS does not object generally to DuPont's inclusion of cross-over traffic in its traffic group, and for good reason The Board repeatedly has acknowledged that cross-over traffic is a "well-established"[80] and "indispensable"[81] part of the SAC analysis.

> Permitting [the complainant] to use cross-over traffic in its SAC presentation...keeps the SAC analysis properly focused on the core inquiry—whether the defendant railroad is earning adequate revenues on the portion of its rail system that serves the complaining shipper.
>
> ***
>
> Creating a SARR to serve the same traffic group without using the cross-over traffic device would dramatically enlarge the geographic scope of a SARR [by requiring a complainant to build a SARR capable of handling the cross-over traffic from its origin to its destination, thus including far more facilities than those needed to handle the issue movement.]
>
> ***
>
> The use of cross-over traffic thus provides a reasonable measure of simplification that allows SAC presentations to be more manageable Curtailing the geographic scope of the SARR greatly simplifies the operating plans that must be developed, thus limiting the complexity of what is nevertheless still a dauntingly large and detailed task.[82]

The foregoing is just as true for cross-over traffic that moves in Leapfrog service as it is for cross-over traffic in general

However, NS scoffs at DuPont's assertion that Leapfrog segments are "happenstance" and incorrectly accuses DuPont of deliberately designing the DRR "to eliminate costs and

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[79] There are also some cases where the so-called Leapfrog moves comprise more than the three described DRR-NS-DRR segments (e.g DRR-NS-DRR-NS).

[80] *See PSCo/Xcel*, p 601; *Otter Tail Power*, p. 11

[81] *See WFA/Basin II*, p. 11

[82] *See PSCo/Xcel*, p. 601

increase traffic density in a manner that improperly distorts the SAC analysis."[83] The NS's skepticism is based on the fact that no previous SARR has used Leapfrog service.[84] But that is true only because no previous SARR has ever approached the size and scope of the DRR, which has over 8,000 route miles and serves 138 issue traffic origin-destination pairs. In essence, the DRR is an amalgamation of 138 separate SARRs with many overlapping and non-overlapping segments By designing the DRR with a focus upon serving the issue traffic, which is a core objective of the SAC analysis that is facilitated by the use of cross-over traffic, it was inevitable that some cross-over traffic would move in Leapfrog service with the residual NS serving as a bridge carrier between points on the DRR

Just because the overlapping and intersecting nature of 138 issue movements inevitably produces cross-over segments that begin and end on the DRR is no reason to deny the DRR access to cross-over traffic to which it otherwise would be entitled if there were separate SARRs for each individual issue movement If the DRR is to achieve the same economies of scale, scope and density as the real-world NS on line segments that also serve the issue traffic, the DRR is entitled to handle the same traffic that NS handles over those lines. This also is consistent with the simplifying objective of cross-over traffic to make the SAC analysis more manageable

NS has elected to exploit the inevitability of Leapfrog cross-over movements attributable to the unprecedented size and scope of the DRR in order to coin a new term for a supposedly discrete category of cross-over traffic with the objective of excluding as much traffic from the DRR as possible In order to accomplish its objective, NS devises five reasons why Leapfrog movements should be disallowed as inconsistent with the purposes of cross-over traffic and SAC principles None of those reasons can withstand scrutiny.

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[83] *See* NS Reply, p III-C-105.
[84] *Id*

First, NS inaccurately claims that Leapfrog cross-over movements do not fulfill the purpose of cross-over traffic because they do not reduce the geographic scope of the DRR.[85] But NS completely ignores the fact that, although the DRR's geographic scope includes both end-points of each Leapfrog segment, it does not include any of the residual NS route between those end-points over which the cross-over traffic moves in the real-world.[86] NS acknowledges that the DRR might not be able to reroute this cross-over traffic over the more circuitous DRR route consistent with the Board's rerouting principles. Nevertheless, NS incorrectly opines that the DRR is required to construct the real-world route in order to handle this cross-over traffic. The residual NS Leapfrog cross-over segments would add over 2,545 route miles to the DRR that are not needed to serve the issue traffic. Those cross-over segments add up to more than a quarter of the DRR's route miles as posited by DuPont, and represent more route miles than any single SARR in most prior cases.[87] Because many of those segments also run parallel to other DRR lines, NS seeks to require the DRR to replicate the redundancies and inefficiencies of the real-world NS, contrary to SAC principles. Requiring the DRR to build the residual NS Leapfrog cross-over segments clearly would dramatically increase the SARR's geographic scope and would not be consistent with SAC principles.

NS erroneously claims that the simplification objectives of cross-over traffic are achieved only by allowing the SARR to interchange cross-over traffic at the geographic end-points of the

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[85] *See* NS Reply, pp. III-C-109-110.

[86] NS's entire argument is predicated upon a definition of "geographic scope" or "service territory" that is not found in any of its cited precedent. NS broadly uses these terms to encompass entire regions between any two points on the DRR regardless whether the DRR actually has any track in those regions. Under the NS definition, if the DRR was a large circle with a diameter of 1,000 miles, the center of that circle would be within the DRR's geographic scope or service territory even though the DRR never comes closer than 500 miles to it. But it is evident from the Board's use of the term "geographic scope" in the context of cross-over traffic that it is referring to the territory actually served by the SARR. *See, e.g., PSCo/Xcel*, pp. 601-603.

[87] The only longer SARRs in modern SAC cases were the *PMC* SARR that extended over 3,109 route miles and the *McCarty Farms* SARR at 5,786 miles.

SARR [88] It is not clear precisely what NS means by the "geographic end-points of the SARR." If NS contends that cross-over traffic can only interchange at the SARR's peripheral terminals, as opposed to any junction between the SARR and the residual incumbent along the SARR network, NS is simply wrong. . Cross-over traffic has originated or terminated at such intermediate points on a SARR in many prior cases. For example, in the recently decided *AEPCO*, the SARR stretched from Montana to Arizona via Wyoming, Nebraska, Colorado, the Oklahoma panhandle, Texas, and New Mexico. The *AEPCO* SARR interchanged traffic with the residual BNSF and UP at "intermediate" stations in every state except Oklahoma.[89] In fact, the *AEPCO* SARR included 16 separate "intermediate" interchange points.[90]

Furthermore, the NS definition of a "geographic end point" appears to change on a movement-by-movement basis This is illustrated by the residual NS segment between Chillicothe, Ohio and PD Junction (near Ingleside), West Virginia Two types of cross-over movements occur over this line segment, through movements and movements that originate or terminate on the line. Although NS objects to DuPont's inclusion of cross-over traffic that uses this residual NS segment as a bridge between two DRR segments on the basis that the DRR-NS interchange locations (Chillicothe and PD Junction) are not "geographic end points" of the SARR as it relates to those movements, NS does not object to the large volumes of cross-over traffic that originate or terminate on this residual NS segment and are interchanged with the DRR at either of the same locations (Chillicothe or PD Junction), apparently believing that these same interchange locations do qualify as "geographic end points" of the SARR as it relates to movements that originate or terminate on the residual NS. Both positions cannot be aligned

[88] *See* NS Reply, p III-C-108, citing *Nevada Power II*, p 267
[89] *See AEPCO*, pp. 6-7
[90] *See* also *Otter Tail*, p 8, A-1 (referencing cross-over traffic between Moran Junction, MT and Benson, MN, which are "intermediate" points in the SARR configuration), *WFA/Basin II*, p 10 (referencing cross-over traffic interchanges p. "intermediate" points on SARR)

Either Chillicothe and PD Junction are "geographic end points" (or simply interchange locations) for the SARR as to all cross-over traffic (which they are) or they are not "geographic end points" for any cross-over traffic (an absurd suggestion). This illustrates both the inconsistency in NS's own argument and the absurdity of its premise that cross-over traffic may interchange only at the SARR's outermost peripheral terminals ("end-points ")

Second, NS incorrectly argues that internal cross-over traffic is inconsistent with the simplifying objective of cross-over traffic because it actually complicates the SAC presentation [91] NS points to added complication due to the need for additional interchanges between the DRR and residual NS. This is a red-herring because all cross-over traffic requires such interchanges And, as discussed above, the interchanges are not "additional" because they are already needed to serve traffic that terminates on the so-called leapfrog segments. Any added complication associated with "added" interchanges is far outweighed by the avoided complications associated with enlarging the SARR. NS also claims that internal cross-over traffic complicates the ATC and MMM analyses This claim is also completely false The ATC and MMM calculations are inherently complicated to begin with, because the parties must calculate the variable and average fixed costs for the entire end-to-end cross-over movement regardless of which segments(s) are part of the SARR and which are part of the residual incumbent system, the only difference is how the parties segment those costs, which is not a complicated process.[92] Furthermore, because both parties have successfully made the ATC and MMM calculations, the point is moot.

Third, NS distorts Board precedent in order to claim that Leapfrog cross-over movements are inconsistent with the objective of enabling the SARR to achieve the same economies of scale,

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[91] *See* NS Reply, p III-C-110

[92] In addition, because the STB requires the removal of interchange related costs from the URCS Phase III variable cost calculations when calculating costs for cross-over divisions, the number of on-SARR and off-SARR segments over which a shipment moves is irrelevant.

scope and density as the incumbent[93] Specifically, NS alleges that Leapfrog cross-over movements would allow a SARR to achieve greater overall economies of scale, scope and density than are available to the incumbent. That simply is not true. The precedent cited by NS states in full:

> As our predecessor, the Interstate Commerce Commission (ICC), explained in *Nevada Power*, 10 I.C.C 2d at 265 n. 12, excluding cross-over traffic "would weaken the SAC test because it would deprive the SARR of the ability to take advantage of the same economies of scale, scope and density that the incumbents enjoy over the identical route of movement" Therefore, for purposes of a SAC analysis, we assume that the SARR would replace the defendant carrier for the particular segment of the rail system that it would replicate.[94]

This quote demonstrates that the Board sought to enable the SARR to achieve the same economies of scale, scope and density as the incumbent over the lines replicated by the SARR. Leapfrog cross-over traffic does not provide the DRR with greater economies of scale, scope and density than the real-world NS possesses over the replicated lines.[95] Neither does it reduce density on the residual NS segments It only permits the SARR to achieve the same density

NS's third point appears actually to be different from the clearly inaccurate point that it claims to be making. Rather, NS is alleging that complainants can "game" the SAC analysis by designing a SARR that leaps over low density line segments.[96] But "gaming" is the fifth reason posited by NS for disallowing Leapfrog cross-over movements, which DuPont also dispels below.[97] Therefore, the third NS point is merely duplicative of its fifth point

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[93] *See* NS Reply, pp. III-C-110-112

[94] *See TMPA*, p 590 [footnotes omitted, underline added]

[95] Any suggestion that the SARR is not permitted to achieve greater traffic density than the incumbent must be rejected The very objective of rerouting traffic is to achieve greater density over a line than may currently exist. Leapfrog traffic, however, does not increase density.

[96] *See* NS Reply, p. III-C-111.

[97] NS also asserts that it receives a lower division than it deserves on internally rerouted traffic in some instances because the DRR reroutes some of the traffic that uses the Leapfrog segments in the real-world, implying that the rerouted traffic results in an understated fixed cost contribution for the remaining Leapfrog traffic under ATC. *See* NS Reply, pp III-C-111-112 NS's argument has no merit as it improperly comingles the hypothetical world

Fourth, NS raises a far-fetched and specious claim that DuPont's use of Leapfrog cross-over traffic circumvents the Board's rules for rerouting traffic.[98] This argument is far-fetched because NS does not actually contest the use of cross-over traffic that DuPont has rerouted from the internal cross-over segments as a violation of rerouting principles. Rather, NS contests the use of cross-over traffic that DuPont did not reroute is a violation of those principles. According to NS, because DuPont could not reroute certain time-sensitive traffic over a longer DRR route under the Board's rerouting principles (which allow rerouting that is internal to the SARR), the Board also should not permit the DRR to participate in that traffic via Leapfrog cross-over movements. NS completely misconstrues the Board's rerouting principles. The Board's rerouting precedent does not *require* internal reroutes, it merely *allows* them should the complainant choose to use them. NS simply does not like the choices DuPont made – which it was completely within its rights to make – regarding the SARR configuration and traffic group, or the results DuPont's legitimate and rational choices produced.

The predicate for applying the Board's rerouting rules to traffic that has not been rerouted is fundamentally flawed. Just because certain cross-over traffic is not internally rerouted does not lead to the conclusion that the SARR may not participate in that traffic over the real-world route unless it constructs that entire route. NS has not offered any explanation why that should be true, and has simply made this assertion as if it were fact. When the SARR handles cross-over traffic over the real-world route, it typically constructs the facilities needed to serve the issue traffic and interchanges the cross-over traffic with the residual incumbent for the other

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of the SARR's operations with the incumbent's real-world costs. The Board has made it abundantly clear that the SARR's operations have no impact on ATC revenue divisions since the principal goal of ATC is to divide the incumbent's revenues based on the incumbent's real-world operations, which are reflected in the relative variable and fixed costs used in the ATC calculation. *See, e.g., Major Issues*, p. 34, *WFA II*, p. 13. In other words, ATC revenue divisions are in no way impacted by the SARR's operations, and the NS is no worse off by the rerouting.

[98] *See* NS Reply, pp. III-C-112-13.

parts of the route The SARR then receives revenue only for the portion of the route it does construct, based on the incumbent's real-world costs and operations over the same route. This is exactly what DuPont has done.

NS distorts the Board's rerouting precedent in order to conclude that this precedent also should preclude internal cross-over traffic. NS first quotes the Board's rerouting decision in *CP&L*, completely out of context. The full quote in context is:

> In *Duke/NS*, 7 S.T.B. at 112-13, the Board refined and clarified SAC policy regarding rerouting of (non-issue) cross-over traffic in a manner that would change the routing of that traffic on the residual carrier. As explained there, rerouting can be an appropriate means of removing inefficiencies from a system. However, when a rerouting involves cross-over traffic and the SARR would not operate over all of the rerouted portion of the move, concerns can arise that the rerouting is designed not to remove inefficiencies but rather to inappropriately shift a greater share of the revenues from the movement onto the SARR and/or to shift costs of serving that traffic off of the SARR onto the residual railroad Therefore, the Board must look at a proposed rerouting to ensure that it is consistent with SAC principles [99]

NS quotes only the underlined portion of the foregoing text to support its assertion that *non-rerouted* internal cross-over traffic inappropriately shifts revenue to the DRR and costs to the residual NS.[100] But the predicate to the underlined text is that there is a reroute of cross-over traffic that is external to the SARR, where the residual incumbent would be forced to change the routing over its portion of the movement. That predicate simply does not exist here, and thus neither do the concerns expressed by the Board

Moreover, Leapfrog cross-over traffic does not involve any cost or revenue shifting As with all cross-over traffic that uses the real-world route, the DRR is responsible for the on-SARR costs of handling Leapfrog cross-over traffic (over the actual route of movement) and the residual NS is responsible for the off-SARR costs (over the actual route of movement). Revenue

[99] *See CP&L*, p. 253 [underline added].
[100] *See* NS Reply, pp. III-C-113-14.

is allocated on the basis of the costs incurred by the incumbent over each segment using the ATC methodology and the actual route of movement Therefore, the residual incumbent's revenues and costs are exactly the same in the real-world as they are in the hypothetical SARR world. NS erroneously refers to this as cost and revenue shifting because the DRR chose not to reroute this traffic. But because the traffic is not rerouted, the DRR neither imposed additional costs on the off-SARR segment, nor received revenue for that segment Thus, there has not been any cost or revenue shifting, only allocation based on real-world routing and operations

In order to contend that there has been cost shifting, NS misrepresents the Board's discussion of cost shifting in its rerouting precedent. The cost shifting that concerned the Board was the imposition of additional costs upon the residual incumbent for handling rerouted cross-over traffic outside of its normal route, *e.g.*, so-called external (off-SARR) reroutes. The Board identified its concerns in the context of off-SARR operating and cost issues and summarized its newly-announced rerouting principles as follows.

> [T]hus, to reroute non-issue traffic, the complainant's SAC analysis must either take responsibility for the entire movement from origin to destination or fully account for the ramifications of requiring the residual carrier to alter its handling of the traffic [101]

If there is no external (off-SARR) rerouting, there cannot be any of the cost shifting that is proscribed by the Board's rerouting principles

Ironically, it is NS, not DuPont that introduces externally rerouted NS Leapfrog segments to the SAC analysis in its Reply operating plan. A clear example of this manipulation can be seen in the NS treatment of a movement from {{[redacted]}}. In the real-world, NS originates this move at {{[redacted]}} and moves it west to {{[redacted]}}, where the movement enters the {{[redacted]}} system From there, the

[101] *See TMPA*, p. 595; *Duke/NS*, pp 115-116 ("Duke would have had the Board simply assume that off-SARR revenues would be sufficient to cover whatever additional off-SARR costs there might be")

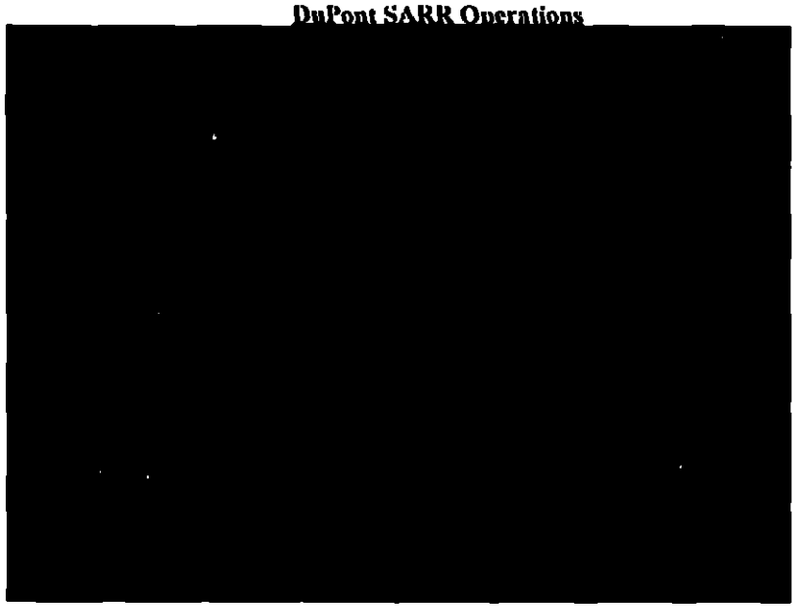
movement follows the {{[redacted]}}, where it reenters the NS system From there, the movement heads due west to {{[redacted]}}, where it enters the {{[redacted]}} system From there, the movement heads north and east over the {{[redacted]}}, where it reenters the NS system From there, the movement moves east to {{[redacted]}} over NS, for a total of {{[redacted]}} loaded miles The real-world route of movement is thus: {{[redacted]}} Figure 3 below shows the real-world route for the subject movement.

Figure 3
NS Real World Operations

[redacted]

Figure 4 below shows the same movement under the DuPont operating plan

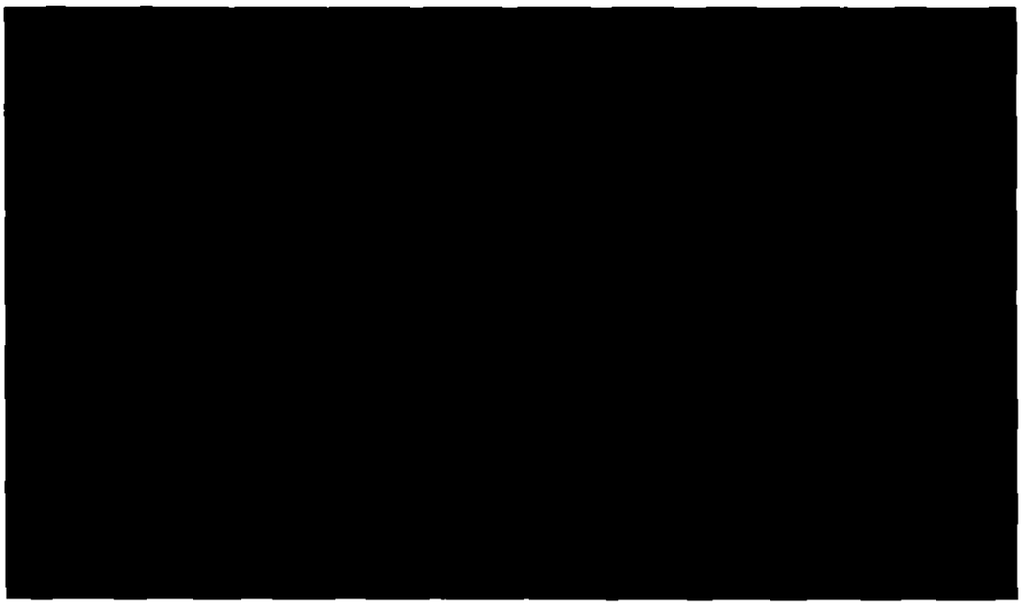
Figure 4
DuPont SARR Operations



In contrast, NS's Reply operating plan reroutes this traffic {{ }} miles out of the way over an NS-only route via {{ }}. The only segments that the NS reply route has in common with the real-world route are the {{ }} As a result, the traffic moves via the residual NS from {{ }} This is both an external reroute and a leapfrog movement. Therefore, it is NS, not DRR, that has violated the Board's rerouting principles by engaging in cost shifting and imposing operating requirements on the residual NS that do not occur in the real-world

Figure 5 below shows the same movement under the NS operating plan for the DRR

Figure 5
NS Reply SARR Operations



This movement is a good real-world example of three things. First, it demonstrates that NS clearly uses Leapfrog service in its everyday real-world operations with partners like {{ }} (Figure 1 above) Second, it demonstrates that NS itself has used the very same type of leapfrog movement in its operating plan that it accuses DuPont of improperly using, over a different portion of the residual NS (Figure 3 above). Third, it demonstrates that the DRR has preserved the more efficient real-world route and merely assumed NS's role for the first and last NS segments of this move (Figure 2 above) [102]

The NS rerouting argument is a collateral attack on well-established SAC principles. NS seeks to artificially restrict DuPont to one of three choices, all of which violate SAC rules 1) reroute the cross-over traffic internally via a longer route, which is a choice to which the SARR

[102] In the DRR operating plan, DRR assumes NS's role between the movement origin p. Mapleton and the first interchange point p Tyrone, and between interchanges with WNYP p. Hornell and the residual NS p Corning, NY. The internal off-SARR segment between Tyrone and Hornell operates exactly as it does in the real-world, via NBER-NS-WNYP, and the DRR interchange points are p. Tyrone, PA, Hornell, NY, and Corning, NY

is entitled, not a requirement for the SARR to adopt; 2) extend the DRR into new territory by constructing lines that are not needed to serve the issue traffic and that would be redundant of other lines that the DRR has built for the issue traffic, clearly antithetical to the least-cost, most-efficient objectives of the SARR configuration exercise, or 3) forego the cross-over traffic altogether, clearly contradictory to the last two decades of SAC precedent.[103] The first choice is simply not required and furthermore could result in exclusion of the cross-over traffic for failure to meet the customers' service needs or artificially inflate the SARR's construction costs to accommodate network upgrades that might be required to meet the service standards; the second choice would conflict with SAC principles by requiring the DRR to replicate the same redundancies and inefficiencies inherent in the NS system; and the third choice would deny the SARR the ability to achieve the same economies of scale, scope and density as NS over line segments that are needed to serve the issue traffic

NS would deny DuPont the obvious fourth option, which is to use the real-world route with the DRR providing service over the line segments shared with the issue traffic and the residual NS providing service for the other line segments In other words, NS would deny DuPont the ability to handle Leapfrog cross-over traffic in precisely the same manner as all other cross-over traffic to achieve the very same objectives for which cross-over traffic was designed. NS has not presented any rational reason why the Board should treat Leapfrog service any different than all other cross-over traffic NS's attempt to contort the Board's rerouting principles for this purpose is an obvious attempt to create a rationale where none exists.

Fifth, and last, NS presents what really has been its main argument all along, namely, that internal cross-over traffic creates opportunities to "game" the SAC analysis.[104] The examples

[103] *See* NS Reply, p. III-C-112.
[104] *Id.* pp. III-C-114-115.

provided by NS, however, are all impossible or improbable worst-case scenarios that would be obvious if such abuse actually occurred.

Principally, NS claims that complainants could game the SAC analysis "to avoid building and operating integral portions of a SARR network that have high construction costs and/or low traffic densities."[105] The potential for this to occur, however, is not nearly so great as NS suggests. The SARR must include all of the lines necessary to serve the issue traffic. It does not matter how much those lines cost or what is their density; without those lines, the SAC analysis must fail. Therefore, it would be impossible for a complainant to leap over low density line segments or to avoid tunnels, bridges or other high cost segments needed to serve the issue traffic by leaving those to the residual incumbent.

Thus, the only potential for such gaming to occur would be on line segments that the SARR chooses to construct, but that are not used by the issue traffic. If this occurred at all, it likely would be only a small portion of the SARR. Moreover, such abuse would be blatantly obvious because the resulting SARR would be comprised of multiple unconnected segments without any rational justification because they are not used by the issue traffic.

Although NS claims that DuPont has used Leapfrog cross-over traffic to game its SAC analysis, the facts do not even remotely resemble those that would indicate "gaming." The DRR is an amalgamation of 138 different routes for the issue traffic with both overlapping and non-overlapping segments. The Leapfrog cross-over segments are lines that the DRR did not need to replicate in order to serve the issue traffic. The end-points of the Leapfrog segments are all on lines that serve the issue traffic. Thus, DuPont clearly has not used Leapfrog traffic to "game" the SAC analysis.

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[105] *Id.* p. 114

f. DuPont Has Accounted For Traffic On Line Segments Impacted by Rerouted Trains

In its Opening evidence, DuPont discussed the fact that it rerouted some trains from their real-world route of operation to rationalize NS's system and to create a more efficient railroad.[106] As DuPont also discussed, all of the rerouted traffic were "internal reroutes," in which the movement is originated by the SARR (or interline received by the SARR) at a location on the actual route of movement and then terminated by the SARR (or interline forwarded back to the incumbent carrier) at a location on the actual route of movement [107] DuPont ultimately used four internal reroutes in its DRR operations

In Reply, NS makes the spurious accusation that DuPont's operating plan fails to provide uninterrupted train service for rerouted traffic.[108] Specifically, NS alleges that DuPont failed to include 325 trains in its train group in which rerouted traffic moved, and that DuPont failed to account for the fact that rerouted trains contain traffic that originates and/or terminates on the real-world rail lines not built by the DRR.[109] NS provides an example to support each allegation, both of which are incorrect

The first NS example of the DRR failing to provide uninterrupted train service for rerouted traffic is not even an example of rerouted traffic at all NS claims that DuPont rerouted a movement from Chicago, IL to Strasburg, VA. What NS refers to as a "reroute," however, is nothing more than ordinary cross-over traffic As NS itself concedes, the DRR handled this traffic from Chicago as far as {{ [redacted] }} on the same NS trains that handle this traffic in the real world.[110] NS, however, then criticizes DuPont for not also replicating the real world

[106] *See* DuPont Opening p. III-C-17.
[107] *See* DuPont Opening p III-C-18.
[108] *See* NS Reply, p III-C-22
[109] *See* NS Reply, pp. III-C-22-24
[110] *See* NS Reply pp III-C-22-23

NS trains to handle this movement from {{[redacted]}}.[111] But the DRR did not build those lines and thus would not operate any trains over them Instead, the DRR interchanges this traffic with the residual NS at {{[redacted]}} as cross-over traffic and the residual NS completes this transportation This is why DuPont did not take the revenue associated with delivering this movement, but instead treated the movement as it would any other cross-over movement NS's discussion of the fact that the DRR constructed a parallel NS line {{[redacted]}} is totally irrelevant because the DRR did not reroute this traffic over that line even though it could have chosen to do so.

In the second example, this time NS incorrectly states that DuPont rerouted TRN {{[redacted]}} from a line segment that moved via {{[redacted]}}, which the DRR has not replicated, to a parallel line segment, which the DRR has replicated. NS car event data, train event data and train schedule data shows that this TRN {{[redacted]}} does not operate on the {{[redacted]}}[112] In other words, NS incorrectly states that DuPont rerouted a train from a segment over which the train never operated DuPont did internally reroute TRN {{[redacted]}}, but over the {{[redacted]}}. But even then NS's assertion that DuPont did not account for the traffic that originates and terminates along the original route of this train in the DRR operating plan or RTC model is wrong.[113] As with the first NS example, NS has either failed to notice or chosen to ignore the fact that DuPont has treated the traffic that originates or terminates along the {{[redacted]}}

[111] *See* NS Reply p. III-C-23
[112] *See* DuPont Reply e-workpaper {{[redacted]}}
[113] *See* NS Reply pp. III-C-23-24

[redacted]}} as cross-over traffic, which again is why the DRR has not claimed revenue associated with this traffic when the DRR does not handle that traffic

As discussed in Section A-2-c-i above, DuPont included all of the trains identified from NS's traffic data, and, as such, NS's claim that DuPont failed to include rerouted trains has no merit. The DRR did not fail to provide complete origin (or on-SARR junction) to destination (or off-SARR junction) train service for such rerouted shipments Rather, as indicated on Opening, DuPont interchanged traffic on those segments not served by the DRR with the residual NS for final delivery Simply stated, this so-called failure to provide service was simply a case of DuPont developing cross-over traffic.

To account for shipments on trains that did not provide complete origin or destination train service because of rerouting, DuPont developed a precise rule for identifying the shipments that were eligible for a reroute.[114] The rule required that a shipment show a DRR location before the first point of the reroute and show a DRR location after the last point of the reroute. For example, a shipment on a train that was rerouted between Columbus, OH and Kellysville, WV would have to show a DRR station prior to Columbus and a DRR station after Kellysville to be included in the rerouted traffic group As a result of this rule, all rerouted shipments were internal reroutes to the DRR.

More importantly, by adopting this rule, DuPont specifically excluded any shipments from its revenue and traffic calculations that was originated or delivered on the NS track from being eligible for a reroute DRR revenue for these shipments was not calculated to the destination location, but to the NS location at the first point of reroute Therefore, NS's argument that DuPont failed to provide service to these locations on lines impacted by reroutes is moot

[114] *See* DuPont Opening III-A-3 workpaper "DUPONT_ATC_METHODOLOGY docx" and DuPont Rebuttal III-A-3 e-workpaper "DUPONT_ATC_METHODOLOGY_REBUTTAL.docx "

because DuPont did not take revenues for this traffic, and instead treated it like any other cross-over traffic.

2. DuPont's RTC Simulation Proves The Feasibility Of The DRR Operating Plan

The Berkeley Simulation Software's RTC model has long been the preferred testing method for proving the feasibility of a stand-alone railroad [115] NS acknowledges that "an RTC simulation indicates whether the complainant's proposed SARR configuration is adequate to enable the SARR to execute"[116] an operating plan.

DuPont witnesses Fapp and Humphrey input exhaustive amounts of data into the RTC Model in order to completely and accurately simulate the DRR. The few criticisms NS had of DuPont's opening RTC simulation have all been refuted or corrected in DuPont's Rebuttal RTC simulation as described below. The DuPont Rebuttal RTC Simulation demonstrates that the DRR would be able to serve all of its customers, deliver all of the selected traffic, and achieve cycle times comparable to NS (or better). All of this was achieved while observing the proper speed limits, the proper network configuration, a conservative number of system outages, and utilizing DuPont's Rebuttal operating plan

a. DuPont's Modeling Of NS's Own Operations Proves Its Feasibility

Whereas NS has opted to contrive an operating plan using the mathematical computations and algorithms of the MultiRail software, DuPont elected to mimic NS's real world operations, real world trains, and real world schedules. NS's time tested real world operations more accurately represent the operations of a railroad that is "stepping into the shoes" of NS than does a mathematical algorithm contained within a software program not used by the railroads in their daily operations

[115] *See*, e g., *AEPCO*, p. 28, and *WFA/Burns*, p 15
[116] *See* NS Reply, p. III-C-117

It seems clear that, when developing an operating plan, a simulation or model will be no substitute for the decades of experience and fine tuning employed by NS's own operating experts. Indeed, there are no factors in MultiRail to account for Amtrak Curfews, train routes requiring a turn move, special case customers, rebalancing of locomotives, or any of the thousands of other minute details that real-world experts encounter – and plan for – during NS's day to day operations. By emulating NS's own operations, DuPont has developed an operating plan that considers all of those details. Therefore, DuPont's operating plan is superior in both realism and detail to NS's MultiRail derived operating plan In addition, the knowledge that the DuPont Railroad operates similarly to the way NS does in the real world lends credibility and feasibility to its operating plan.

b. DuPont Used Correct Grade Information

In its Reply narrative, NS claims that DuPont erroneously input into 7,000 nodes incorrect grade information, and that those errors invalidated DuPont's Opening RTC simulation.[117] NS grossly overstates the error and, more importantly, the impact of the error NS also neglects to mention that 50% of the 7,000 grade "error" nodes originated in NS's own RTC simulations provided by NS to DuPont in discovery [118]

In NS's analysis of DuPont's opening grade inputs, NS compares grade percentages between DuPont's Opening RTC grades and NS's grade database out to three (3) decimal places. In reality, 4,520 of the 7,000 (65 percent) purported grade "errors" were inaccurate by a margin of less than 0 5 percent.[119] To put that number into perspective, NS reported grades as significant as -5 91% in discovery, almost 12 times the margin of error described above.[120] Stated

[117] *See* NS Reply, III-C-129
[118] *See* DuPont Rebuttal e-workpaper "top impact grade changes_DuPont Rebuttal xlsx "
[119] *See* DuPont Rebuttal e-workpaper "top impact grade changes_DuPont Rebuttal.xlsx."
[120] See NS Discovery File "grd_ns txt "

differently, the vast majority of the grade "errors" as defined by NS were still accurate to within a margin of error of less than +/-6 inches over a run of 100 feet. As shown in the illustration contained in Rebuttal Exhibit III-C-2, the difference in these grades is immaterial. NS also fails to acknowledge that DuPont's opening RTC simulation contained 87,532 grades in total,[121] a fact that reiterates the miniscule nature of NS's criticism.

NS also claims that correcting the above mentioned grade inaccuracies "caused trains to stall at multiple locations along the DRR network."[122] In fact, the changes resulted in only 14 of 7,210 trains stalling.[123] In other words, the correction of DuPont's grade input errors caused 0.19% of the trains to stall, an effect that is easily resolved by the addition of power to those 14 trains.

i. DuPont Relied On The Grade Information Included In NS's RTC Models Provided In Discovery

In building its Opening RTC model, DuPont utilized multiple RTC cases provided by NS in discovery. By copying these cases into its Opening RTC network, DuPont was able to rely upon RTC data used by NS in its every day course of business to simulate portions of its route replicated by the DRR Thus DuPont was able to capitalize on the modeling labor already performed by NS, and to benefit from NS's knowledge of its own network As an unfortunate side-effect, by copying NS's RTC networks into its own, DuPont also copied in any errors or inaccuracies contained in NS's own RTC models.[124] This exposes the source for 3,547 (50 percent) of the nodes in the above mentioned grade errors as coming directly from NS supplied RTC cases.

[121] *See* DuPont Opening "DRR 9 Errata LINK."
[122] *See* NS Reply, p III-C-129
[123] See NS Reply WP "DRR Train Failure Resulting From Substitution of Correct Grade Information doc "
[124] *See* DuPont Rebuttal e-workpaper ""top impact grade changes_DuPont Rebuttal xlsx" "

ii. Rebuttal RTC Grades

Though DuPont believes that the group of inaccurate grades is small, the margin of error is miniscule, and the number of impacted trains negligible, DuPont has adopted the grades as corrected by NS in its Reply. While the overall impact is minute, DuPont's Rebuttal RTC model contains the corrected grades to ensure ultimate accuracy and validity of its results [125]

c. Track Outages

In its Opening RTC simulation, DuPont included numerous track outages based on train delay information provided by NS in discovery.[126] In its Reply, NS claimed that DuPont significantly understated the number of track outages that would occur on the DRR, and identified 1,231 train, car, and maintenance related outages on the SARR. DuPont reviewed its Opening RTC outages, and agrees that it understated the number of outages that would occur on the DRR. However, in reviewing NS's alleged track outages, DuPont found that NS train movement data shows trains moving over sections of track during the time NS alleges the tracks were impassable In addition, a review of NS's RTC model shows NS modeled a significant number of outages that were not supported by its data DuPont discusses these issues below.

i. NS Train Movement Data Shows Train Moving Over Line Segments NS Claims Were Shutdown Due To Outages

As indicated above, NS indicated that the DRR would incur over 1200 track outages during the RTC simulation period However, when the times and locations of the NS identified outages were compared to NS's train movement statistics, DuPont found numerous cases where trains were moving over track claimed to be impassable by NS

[125] In order to incorporate the grades as corrected by NS, DuPont imported NS's Reply .LINK and .NODE files into its Rebuttal RTC model (2 of the 28 included files) before conforming the network to fit its operations

[126] *See* DuPont Opening e-workpaper "Delay_2009 (on-sarr).xlsx."

A prime example of this issue is seen in the analysis of NS identified train outages NS identified 220 "outages" caused by trains with locomotive engine failure DuPont systematically analyzed the train event data for these trains and found that, in 120 of the 220 reported outages, trains were moving over the line segment allegedly out of service due to a locomotive failure.[127] For example, NS identified {{[redacted]}} as being delayed for {{[redacted]}} at milepost {{[redacted]}} However, NS train event data shows this train taking only ({{[redacted]}} hours to move between the first station prior to {{[redacted]}} and first station after {{[redacted]}} In other words, clearly this train was moving through {{[redacted]}} during the time NS alleges it was delayed

Because NS train event data does not accurately report train arrival times, DuPont had to base its analysis on train departure times between stations. To account for times that trains may dwell between these stations, DuPont also looked at the minimum time it would take each train to traverse the line segment. If that time was less than the outage time identified by NS, the train was clearly moving, and DuPont disregarded that outage [128]

ii. Rebuttal RTC Outages

A review of NS's RTC model shows that it input 1,754 outages into its Reply RTC model. Of the 1,774 outages, only 662 were enabled as active outages

Upon reviewing the 1,754 outages included in the NS Reply RTC, DuPont concluded that 321 outages where unsupported, 1,112 outages were "randomly" disabled without justification, and 221 outages were included where the identified train was never delayed [129] DuPont corrected

[127] *See* DuPont Rebuttal e-workpaper "NS Loco and EOTD Outages Final.xlsx."
[128] *See* DuPont Rebuttal e-workpapers "NS Loco and EOTD Outages Final xlsx" and "Delays other than Loco and EOTD v3 xlsx "
[129] *See* DuPont Rebuttal e-workpaper "Outages Reconciliation – NS Workpapers vs RTC V06.xls"

all of these errors and has included 1058 active outages in its rebuttal RTC simulation, nearly 400 more outages than NS's own Reply RTC simulation.

d. Amtrak Northeast Corridor

DuPont agrees with NS that the Amtrak curfew in the Northeast corridor should be enforced to properly simulate any trains traversing that section of the network. NS's methodology for enforcing the curfew in the RTC was to input a track outage over Amtrak lines between 8AM and 9PM every day of the simulation. DuPont has accepted that methodology and incorporated those same outages of the Amtrak lines into its Rebuttal RTC simulation.

e. Foreign Railroad Crossings

NS Claims that DuPont did not account for foreign railroad crossings in its opening RTC simulation. DuPont accounted for delays by foreign railroads by inputting those delays in the form of random outages. A query error caused DuPont to understate the number of outages on its SARR. This error has been corrected in Rebuttal. In its Rebuttal RTC simulation, DuPont input 81 outages attributed to a foreign railroad DuPont also accepts NS's track modeling of foreign railroad at grade crossings as submitted in NS's Reply RTC simulation

However, DuPont does not agree that foreign trains should be randomly input into the model and has not included randomly generated foreign trains crossing at grade. This is an inappropriate and inaccurate method to simulate delays encountered by foreign trains By inputting foreign trains into the same peak period train list that is being simulated, the RTC model will dispatch the foreign trains to avoid conflict with the SARR trains If input properly, the RTC model will choose to hold foreign trains out of the way of SARR trains based on the priority setting used in the model However, in NS's Reply RTC simulation, NS has aggressively set the priority of foreign trains to be higher than that of most of its own SARR traffic. NS coded its "Foreign" train types to have a dispatch priority greater than or equal to the

DRR's own Triple Crown, Coal, Automotive, Merchandise, Special, Grain, Unit, Local, and Shuttle train types DuPont witness McDonald noted that this priority setting would be against proper protocol, stating that, like real world railroads, the DRR would work with the foreign railroads coordinate train priorities at crossings. This improper coding of its "Foreign" trains would cause all of the above-mentioned DRR traffic to yield to any foreign traffic of any type. For example, a DRR Triple Crown train could be asked to yield to a foreign Empty Coal train. Clearly that would not be standard practice in the real world. Given the massive volume of foreign traffic NS included in its Reply RTC model, this error has a profound impact on NS's DRR traffic

This is an unrealistic representation of the handling of foreign train crossings NS's modeling of foreign train crossings is incorrect for a plethora of other reasons as well, discussed below. DuPont believes that the real-world delays experienced by NS are a more accurate portrayal of the effect and has appropriately included those outages in its Rebuttal model without the inclusion of randomly generated foreign trains Indeed, NS's own evidence indicated when and where delays caused by foreign trains actually occurred in the real world. It is inexplicable why NS would opt to develop "imaginary" foreign trains rather than incorporate its own real world data to represent those delays.

f. DuPont's Modeling of The Chicago Area

In its Opening RTC simulation, DuPont modeled the rail lines in the Chicago Metropolitan area based on the routes identified by DuPont's operating expert In its Reply, NS states that DuPont improperly routed traffic through the Chicago area, and instead proposed a different route for DRR traffic As discussed in section III-B-2 above, DuPont agrees with NS's routing through the Chicago area and incorporates this routing into its Rebuttal RTC model.

g. Light Engine and Hi-Rail Movements

As discussed above, due to the many flaws included in NS's data, DuPont made the reasonable assumption in developing its train operations in its RTC model that the number of cars shown on each train reflected the average number of cars on the train over the route NS took exception with this assumption, and stated that DuPont should have changed consist sizes on its trains. Based on NS's direct Reply criticism, DuPont has updated its model to reflect the change in consists while in route

By modeling actual changes in consists along the train route, DuPont has also modeled the movement of light engines on the DRR Light engine movements happen in the real world daily; however, railroads attempt to minimize their movements Trains leave their origin station and head to their customer's location to deliver their product During the delivery the train will unhook their railcars and leave them at the customer's location for delivery The engines will then return to the yard "light " Conversely, locomotives may leave the yard "light," and proceed to industry where they will pick-up railcars To account for this real world phenomenon, DuPont has included 226 light engine movements in its Rebuttal RTC Model based on the changes in consists shown in NS car event data[130]

NS has also stated that DuPont failed to include hi-rail vehicles operating over the DRR route in its RTC model. NS is mistaken. Movement of hi-rail vehicles are accounted for in the maintenance outages that DuPont included in its RTC simulation where the hi-rail movements were due to track maintenance.

Where hi-rail movements are not used as part of maintenance outages, such as for required track inspections, any competent operating expert will tell you that it is common

[130] The light engine event occurs, for example, when a train leaves a yard with loaded railcars, and drops these cars at industry, and returns to the yard with no other railcars.

industry practice to have a vehicle trail an operating train using its clearance or warrant DuPont's operating witness McDonald, who has operated both eastern and western railroads for over 40 years, has performed and observed such practices across all railroads, from Class I to Class III There is no reason that hi-rails cannot operate safely in this manner. Moreover, unlike maintenance outages, railroads time and perform their inspections around the following of prevailing traffic. There is simply no need to model this type of activity in the RTC model.

h. DuPont Incorporated In-Route Consist Stops and Changes

As explained in Opening, NS's car and train event data was of such poor quality that DuPont was required to undertake a prolonged and manual analysis of NS data in an attempt to determine locations along the DRR's train routes where stopping occurred along the route.[131] From this information, DuPont identified, where possible, locations where trains stopped in route and had changes in consists. However, given the poor level of data, DuPont included stops in route, but did not reflect the exact changes in train sizes Although NS trumpets this as a fatal flaw in DuPont's operating plant, in truth, this assumption has minimal impact on the RTC model

In its Reply, NS criticized DuPont for the assumptions it was forced to make due to NS's flawed data, and claimed that DuPont did not stop trains along the route to service customers.[132] DuPont acknowledges that it did not stop certain local trains that operated in turn-service due to poor quality of the NS data, however NS is incorrect that DuPont did not stop along the DRR route As shown in DuPont Opening e-workpapers "General Freight Peak Period RTC List (With adjusted growth).xlsx," and "Peak Period Local v3.0.xlsx," DuPont included stops along the

[131] *See* DuPont Opening Exhibit III-C-1, p. 9-11
[132] *See* NS Reply, pp III-C-20, 57 and 59.

DRR routes when indicated by NS train event data for road trains and NS car event data for straight-away local trains

In its Rebuttal RTC model, and in direct response to NS's Reply criticisms, DuPont has updated its RTC train list to include dwells for local trains operating in turn service, and to reflect changes in consists for general freight and local trains. DuPont takes this step even though it continues to believe that NS's car and train event data are of such poor quality as to make the statistics used meaningless [133]

i. The DRR Provides The Same Or Better Service Quality Than NS

In its Opening narrative, DuPont explained how its modeling of the DRR network using the RTC simulation program proved the SARR's feasibility to handle the issue and non-issue traffic operating over the network. In its Reply, NS alleges that not only did DuPont not prove the feasibility of the DRR, but it also did not prove it was providing the same level of service as the NS provides its customers [134] In addition, NS expands the definition of providing "better service" beyond providing the same or better transit times as the incumbent to include other factors.[135]

As DuPont explained in Opening in great detail, the numerous errors and flaws on NS provided train and car event data limited the ability to develop broad operating analyses. This includes dwell time calculations, as discussed in detail above and in DuPont's Opening Exhibit III-C-1, and transit time calculations for most trains [136] While NS takes DuPont to task for not

[133] *See* DuPont Rebuttal e-workpapers "Rebuttal Local Peak Period RTC List (With Consist Changes and Dwell) xlsx," "Rebuttal General Freight Summary (With Consist Changes, Dwells and TIH) 3-2.xlsx" and "Rebuttal Added General Freight and Local RTC List 3-7.xlsx."

[134] *See* NS Reply, p. III-C-151

[135] *See* NS Reply, pp. III-C-150-153.

[136] Train transit times are calculated by subtracting the arrival time at the trains final destination from the departure time from the origin. DuPont explained in its Opening Exhibit III-C-1 that NS's train event data contains an extreme imbalance in arrival and departure train events, with a nearly 20 to 1 ratio of departure messages to arrival messages. DuPont also explained that the arrival events that are included are in most cases out of

developing transit time comparisons for all of its trains, it is most telling that NS was also unable to develop transit time comparisons for its own Reply DRR operations. In other words, NS's data is so bad that the incumbent itself could not use it to develop transit time information.

In direct response to NS's criticism that it did not show that it was providing the same or similar service as the NS, DuPont looked to other measures to demonstrate that the DRR is providing comparable service to current NS operations. One such measure was found in NS's monthly performance reports filed with the AAR and listed on NS's Investor Relations website. One of the metrics measured by NS, and other Class I railroads, is average train speed. NS defines average train speed as:

> Train Speed measures the line-haul movement between terminals. The average speed is calculated by dividing train-miles by total hours operated, excluding yard and local trains, passenger trains, maintenance of way trains, and terminal time.[137]

Based on this definition, DuPont compared the average train speeds reported by NS for 2009, the first year of the DRR's operations, to the DRR's average train speeds for the peak week of the peak year of the DRR's operations.[138] Comparing DRR's average train speeds to NS's reported train speeds will provide insight into how DRR's operations compare to NS's operations.[139] DuPont shows the comparison on Table III-C-2 below.

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sequence and show trains arriving before they depart. Given these infirmities, it is not possible to accurately calculate train transit times in almost all cases with the NS data.

[137] *See* NS's Investor Relations website at, http://www.nscorp.com/nscportal/nscorp/Investors/Performance_Measures/Performance_Definitions/

[138] DuPont calculated the average train speeds by dividing aggregate train miles by aggregate hours by train type. *See* DuPont Rebuttal e-workpaper "Average Speed by Group.xlsx."

[139] The STB has looked in the past at transit times on specific origin/destination pairs as a basis to compare the SARR's and the incumbent's operations. Given that speed is a relative measure of time e.g., miles per hour, there is not much difference in making time comparisons and speed comparisons.

Table III-C-2
DRR versus NS Average Train Speeds

Train Type	DRR Average (MPH)	NS Average (MPH)
(1)	(2)	(3)
1 Intermodal	30 4	29.0
2 Manifest	24 9	21.6
3. Multilevel	30.7	23 8
4. Coal Unit	17.6	16.1
5. Grain	24.8	17.7
6. All Trains	25.0	22.6

Source: *See* e-workpaper "Average Speed by Group.xlsx "

As shown in Table III-C-2 above, the DRR provides faster service than comparable real-world NS trains. One must keep in mind one other aspect of this comparison. The DRR's speeds shown above reflect the DRR's peak period average train speeds, meaning they reflect the average times during the busiest point of the DRR's shipping year at the peak year of its operations In contrast, the NS speeds shown are the average for the base year. One would expect that peak period speeds would be slower than average for a year, indicating that the DRR's average train speeds are higher than indicated in Table III-C-2 above

NS also alleges that "service quality" includes other factors besides delivery speed. Specifically, NS states that service reliability is also a factor, and that DuPont has not shown that the DRR will provide comparable service reliability to NS based on the trains DuPont allegedly failed to include in its DRR train list NS's argument for "reliability" as a definitive quality metric is just a case of misdirection in order to avert the Board from NS's failed operating plan As discussed in greater detail below, NS's operating plan results in much longer hauls and, presumably transit times, for many movements due to the inefficient routing used by NS. As such, NS looked for a way to divert the STB's attention from its failure to provide comparable service to NS's current real world operations. Moreover, as DuPont discussed above, it has

included all the trains necessary to serve the DRR's traffic group based on the trains identified from NS's flawed data, so it is providing the same level of reliability as the current NS operation.[140]

3 NS's MultiRail-Based Operating Plan is Unnecessary and Erroneous, and It Complicates the SAC Analysis while Providing no Advantage Over DuPont's Tried and Tested Model

NS roundly criticizes DuPont's operating plan and claims that it is "fatally deficient" and "infeasible in numerous respects."[141] However, DuPont developed the DRR operating plan based on the real-world NS operations over the DRR network. Specifically, DuPont's traffic group was selected based on the real-world route of movement of cars and containers, and the trains on which they moved in both the loaded and empty direction during the base period The DRR trains are of identical consist (including loaded and empty cars), and follow the identical routes (with identical pick-up and set-out locations along the way), as the corresponding NS trains.

Nonetheless, "NS concluded that DuPont's Operating Plan was irreparably deficient Rather than attempting to modify or supplement that plan, NS developed, from the ground up, a complete operating plan that is capable of meeting the service requirements of the DRR's customers."[142] This argument is dubious on its face. The DRR was based upon NS's real-world operations. If NS believed that the DRR failed to provide the service that NS provides in the real-world, it could have fixed what it believed to be flaws without resorting to an operating plan utterly divorced from NS's own real-world operations, using an untried program and unprecedented and arbitrary procedures As further discussed below, NS's wonderland operating plan is utterly inadequate Simply stated, there was no reason for NS to reinvent the wheel

[140] The simple fact that DuPont is running the same trains as NS, and doing so at higher average speeds indicates the DuPont is providing the same or better service than the incumbent. NS, which has developed completely new trains, has not demonstrated in any way that it would provide the same services NS currently provides to its own customers.

[141] *See* NS Reply, p III-C-153.

[142] *See* NS Reply, p III-C-155

It is important to remember that *DuPont used the same general approach* to developing its operating plan *that has been used by all parties* (complainants and railroads alike) *in all rate reasonableness proceedings that have been decided in the last decade* Specifically, DuPont selected its traffic group and associated trains from real-world railroad traffic and operating data, modeling the SARR operations based on those real-world trains and operations This established precedent has been used and endorsed by shippers, railroads, and the Board as recently as the very last case decided by the Board, including traffic groups that contained large amounts of manifest and intermodal traffic.

Specifically in *AEPCO*, the complainant selected its traffic group and train list from not one, but two western Class I railroads. The SARR in that case was an expansive system that traversed eight (8) western states [143] The traffic group in that case included traffic moving across the entire western Class I railroad system in manifest, intermodal, and unit train service that was interchanged with the residual incumbents at eighteen (18) locations.[144] The complainants based the SARR operations on real-world train data provided by the defendants in discovery The defendants accepted and used that methodology and those train lists in their reply models with no problems In fact, the railroads challenged the configuration of the SARR in that case Not only were the railroads, using the same consultants that NS employed in this case, able to understand and adjust the traffic selection and train modeling methodologies the complainants employed in that case, but they were able to implement it themselves to develop an alternate traffic group for the alternate SARR configurations they proposed to use on Reply

However, in this case, NS and its consultants, who have years of experience over multiple SAC cases, claim to be unable to use or adjust the model presented by the complainants

[143] *See AEPCO*, p. 7.
[144] *Id*

on Opening This claim suggests one of two things: either NS realized that the data it provided in discovery was so deficient as to not allow the complainants to develop the operating plan using the *de facto* standard data and models, or NS, realizing that more modest fixes to the DRR operating plan would not raise the SAC enough to justify its exorbitant rates, simply wished to introduce an additional, unnecessary level of cost and complexity to the case in an attempt both to raise the cost of bringing a complaint before the Board and to increase the "answer" that it submitted to the Board In either case, NS's claims that DuPont's methods and models are deficient are disingenuous Below DuPont discusses NS's use of its alternate MultiRail-based model under the following seven (7) topical headings:

1. Substituting Modeled SARR Routing and Operations for Actual Routing and Operations Is Unnecessary;
2. Substituting Modeled SARR Routing and Operations for Actual Routing and Operations Distorts the SAC Analysis;
3. NS Uses a Model That is Superior to MultiRail in Developing its Real-World Operating Plan,
4. NS's MultiRail-Based Modeling Exercise Fails to Consider Downstream Impacts on Both DRR Traffic and Other Non-Selected NS Traffic;
5. NS's MultiRail-Based Modeling Exercise Fails to Account for All Selected DRR Traffic;
6. NS's MultiRail-Based Modeling Exercise Relies on Simple Mathematical Algorithms Rather than Real-world Operations; and,
7. NS's MultiRail-Based Modeling Exercise is Riddled with Faulty and Unalterable Inputs and Assumptions that Render its Outputs and All Downstream SAC Analyses Invalid

a. Substituting Modeled SARR Routing And Operations For Actual Routing And Operations Is Unnecessary

NS proposes to replace DRR's operating plan, which is based on NS's real-world operations, with an operating plan that was "developed by a group of operating experts" with

"extensive experience with NS's day-to-day freight operations."[145] NS claims that its made-for-litigation operating plan is somehow superior to the DRR operating plan, which incorporates the train operations that were actually developed by NS's operating staff and implemented in the real-world NS's operating plan development exercise is akin to a student constructing a Rube Goldberg mousetrap – deliberately complicated and unnecessary, providing no more effective results than the tried and trusted, readily available alternative.

The NS-created DRR Operating plan includes four major components (1) a car blocking and train service plan, (2) a network of yards, terminals, tracks, and facilities; (3) a statement of the equipment and personnel needed, and; (4) an RTC model simulation. The car blocking and train service plan drives the development of the other three analyses and were developed by NS's witnesses using a software package called MultiRail.

The car blocking and train service plan was developed based on a series of inputs to the MultiRail modeling tool It relies on four major input databases: 1) the rail network being evaluated; 2) a blocking plan that defines the available car blocks (intermediate route segments) over which non-trainload traffic may be moved, 3) a train list to which individual car blocks may be assigned, and 4) the traffic data that must be flowed through the network. There are several specific problems associated with NS's use of the four listed inputs, as discussed in the following sections. However, it is important to note here the nature of the four input databases NS used and their implications for modeling.

The rail network NS used as its input network was the entire NS rail network, not simply the DRR network.[146] In addition, the blocking plan NS entered as an input to the model is the NS

[145] *See* NS Reply, p. III-C-154
[146] *See* NS Reply, p. III-C-159

system-wide blocking plan NS uses in the real-world,[147] and the train list NS entered as an input to the model is based on the train schedules NS uses in the real-world.[148] As discussed in detail below, this approach resulted in NS not only rerouting and changing the operations for the DRR traffic group over the DRR system, but also rerouting and changing the operations for the DRR traffic group over the residual NS system segments (*e g*, creating off-SARR, or external reroutes). Because NS accepted the DRR traffic group as selected by DuPont, including traffic moving in so-called Leapfrog trains, the traffic data that was flowed through the MultiRail model is the very same traffic group as that included in the DuPont model.

In the first phase of the MultiRail analysis, the traffic is assigned to pre-determined car blocks (in this case the actual system wide NS blocks used in the real-world). This is generally an automated process based on mathematical algorithms, although it is iterative and dependent on certain rules determined by the user. In the second phase of the analysis, the blocks are assigned to trains (in this case the actual system wide NS trains that move in the real-world) This is a totally manual process, based entirely on the operator's judgment. As NS acknowledged, "Witness Smith assigned one or more blocks of cars to each train, based upon the train's direction of movement, the distance it would travel along the DRR network, and the intermediate stops it was scheduled to make en route."[149] According to Oliver Wyman's[150] training staff, this is the most labor intensive part of the analysis It logically follows that it is difficult to gauge the effectiveness of the manual block assignment process, since there is no control scenario available to use as a benchmark Moreover, there is no way to test these assignments in the real-world. DuPont's acceptance of NS actual train consists and

[147] *See* NS Reply, p III-C-160.
[148] *See* NS Reply, p. III-C-162
[149] *Id.*
[150] Oliver Wyman is the consulting company that created the MultiRail software

incorporation of them into its operating plan is predicated on the assumption that the NS personnel who do this for a living have the benefit of years of experience and have perfected the blocking assignment through years of trial and error. In contrast, NS's Reply experts gave it one shot and declared that their ad hoc assignment, "provide[d] complete, efficient on-SARR service for all DRR traffic blocks."[151] This declaration is hardly proof that NS's modeling exercise actually provided service at least-cost, most-efficient SARR standards. *More importantly, acceptance of such a procedure in SAC cases for the future would, in fact, fatally sever the SARR modeling exercise from reality, pitting one "expert" against another, with no link to reality whatsoever.*

This first phase of the MultiRail analysis is utterly unnecessary and distances the SARR operations from efficient real-world practices Because NS has already assigned traffic using the NS system, NS blocks, and NS trains in the real-world, there is no need to reassign the same traffic to the same universe of blocks and trains for the DRR NS already successfully did this, so all of the inputs are inherently incorporated in the provided train and car event data. Furthermore, under DuPont's approach, its train schedules are guaranteed to be coordinated "to provide the most efficient service to [its] customers "[152] In Opening, DuPont logically assumed that NS put sufficient thought and effort into streamlining its real-world railroad operations, and incorporated those efforts into its DRR operating plan In essence, what NS did in Reply was to reshuffle the deck and overwrite NS's actual operations over the entire NS system with a parallel universe version of the same. Specifically, NS's experts substituted their chosen model's algorithms for assigning cars to blocks for the car blocking algorithms inherent in NS's real-world internal model, and their own judgment regarding the best

[151] *See* NS Reply, p. III-C-162.
[152] *See* NS Reply, p III-C-164.

assignment of blocks to trains for the judgment of the NS staff actually responsible in the real-world for assigning blocks to trains.

Ironically, some of the arguments NS makes in support of its MultiRail-derived operating plan assert that, where possible, real-world operations form a more reasonable and reliable basis for SARR operations than experts' assumptions. Specifically, NS argues

> In designing NS's Operating Plan, witness Johnson rejected DuPont's assumption that all DRR road trains would operate with locomotives in DP configuration. Rather, he assumed that the DRR would utilize DP in a manner similar to the "real world" operating practices of NS and other Eastern carriers. In NS's Operating Plan, DP is not used on DRR local trains Witness Johnson's more realistic assumption enhances the efficiency of the DRR's operations, and eliminates expenses that the DRR otherwise would be required to incur to implement DuPont's ill-advised "all DP" locomotive plan.[153]

Notwithstanding the fact that it is DuPont's prerogative to determine the DRR's locomotive configuration, this paragraph demonstrates that NS recognizes that real-world operating practices provide "more realistic" model results than do user-defined "assumptions" Despite this recognition, the NS operating plan fails to follow NS's own philosophy.

b. Substituting Modeled SARR Routing and Operations for Actual Routing and Operations Distorts the SAC Analysis

The DRR traffic group was selected based on its real-world route of movement. However, by including the entire NS network in its MultiRail routing exercise, NS literally rewrote history and moved traffic that traversed certain NS (and DRR) routes in the real-world over different parts of the NS system in its model This is problematic for several reasons Most importantly, the alternate routing NS developed via its MultiRail analysis *results in impermissible and distorting off-SARR ("external") reroutes that violate fundamental SAC principles* This fact alone requires the NS model and operating plan to be rejected out of hand

[153] *See* NS Reply, p III-C-213

and renders the entire NS analysis moot In addition, it ignores the special operating requirements that were considered and incorporated by NS when NS developed the real-world operating plan implicit in the train operations included in the DuPont plan.

Amazingly, NS warned of these very dangers in its August 1, 2011 Reply to DuPont's Motion to Compel NS to produce redacted traffic data devoid of routing information for TIH shipments Specifically, NS stated·

> [Using surrogate routing data] would distort the SAC analysis and the accuracy of its results .
>
> ***
>
> [Ignoring actual routing data] would require the parties to use substantially inferior data and tools to determine the routing of traffic that DuPont includes in its traffic group, including issue traffic
>
> ***
>
> Because TIH traffic is subject to special routing requirements and rules (as well as special handling and interchange requirements), routes suggested by off-the-shelf software may not be feasible or permissible. Moreover, DuPont's proposal would allow it to re-route traffic from its actual route of movement. .
>
> ***
>
> Use of impermissible and distorting re-routes, in turn, could substantially distort the SAC analysis and undermine the accuracy and validity of its results. The use of incorrect routings and re-routings of TIH commodities would also have other, indirect distorting effects on components of the SAC analysis including the proper distribution of crossover traffic revenue between the SARR and the residual incumbent (using ATC methodology), and determination of which lines and equipment would require the installation of Positive Train Control Systems and the accompanying capital investment. These and other distorting effects of DuPont's proposal to preclude the parties from using accurate routing and event data would significantly undermine the accuracy and validity of the SAC analysis and might well render any resulting

> maximum reasonable rate determination, rate prescription, or reparations arbitrary and capricious.[151]

Before the NS traffic data were even produced in this case, NS expressed concerns regarding the dangers associated with substituting actual routing data with inaccurate routes suggested by off-the-shelf software *for only the small portion of the NS shipments carrying TIH materials*, and asserted that the use of such unsupported substitute routes would *severely distort the entire SAC analysis* and render its results meaningless. However, NS now contends that the substitute routing *for all DRR traffic* that it developed using MultiRail is superior to the actual routing information upon which DuPont relied in developing its operating plan, *and does not distort the SAC analysis whatsoever*. This is a complete reversal of NS's prior stated position Furthermore, it is flatly incorrect

NS's modeling exercise fails to reconcile off-SARR routing with NS's actual off-SARR operations for traffic that is included in the DRR traffic group. NS complains at length throughout its narrative that DuPont should not have included what it terms "Leapfrog" traffic. What NS calls leapfrog traffic is properly called internal cross-over traffic. DuPont included some movements whose real-world route of movement results in their moving over two DRR segments with a residual NS segment in between them As discussed in Rebuttal Part III-A and elsewhere in this Rebuttal Part III-C, NS's arguments against the inclusion of this traffic are unsound. Specifically, because the internal cross-over traffic that DuPont included in the DRR traffic group follows the real-world route of movement, the joint DRR-residual NS operations ensure that the service requirements for all selected and non-selected NS traffic are met, whether

[151] Norfolk Southern Railway Company's Reply to Second Motion to Compel of E I DuPont de Nemours and Company, filed August 1, 2011, pages 1-4, emphasis added. Included as e-workpaper "230742 NS Reply, to Motion to Compel pdf."

the traffic originates/terminates on the DRR, originates/terminates on the residual NS, moves in bridge service over the DRR, or moves in bridge service over the residual NS.

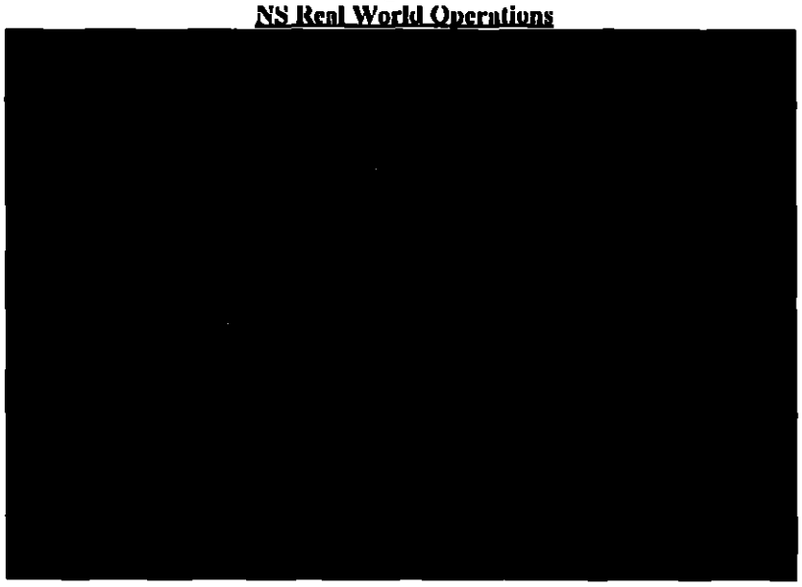
In contrast, NS, through its MultiRail modeling exercise, has violated fundamental SAC principles through the creation of external reroutes over the residual NS, imposing costs and operating requirements on the residual NS that it does not bear in the real-world. This can be shown using the same example from above, i.e., the movement from {{[redacted]}}

In the real-world, NS originates and moves the traffic from {{[redacted]}}[155]

The real-world route of movement is shown in Figure 6 below.

[155] *See* e-workpaper {{[redacted]}}

Figure 6
NS Real World Operations



In the DuPont operating plan, DRR originates the traffic and moves the traffic {{

d.

[redacted]

The route of movement under DuPont's DRR operating plan is shown in Figure 7 below.

Figure 7
DuPont SARR Operations

In the NS Reply operating plan, DRR originates the traffic and moves the traffic from

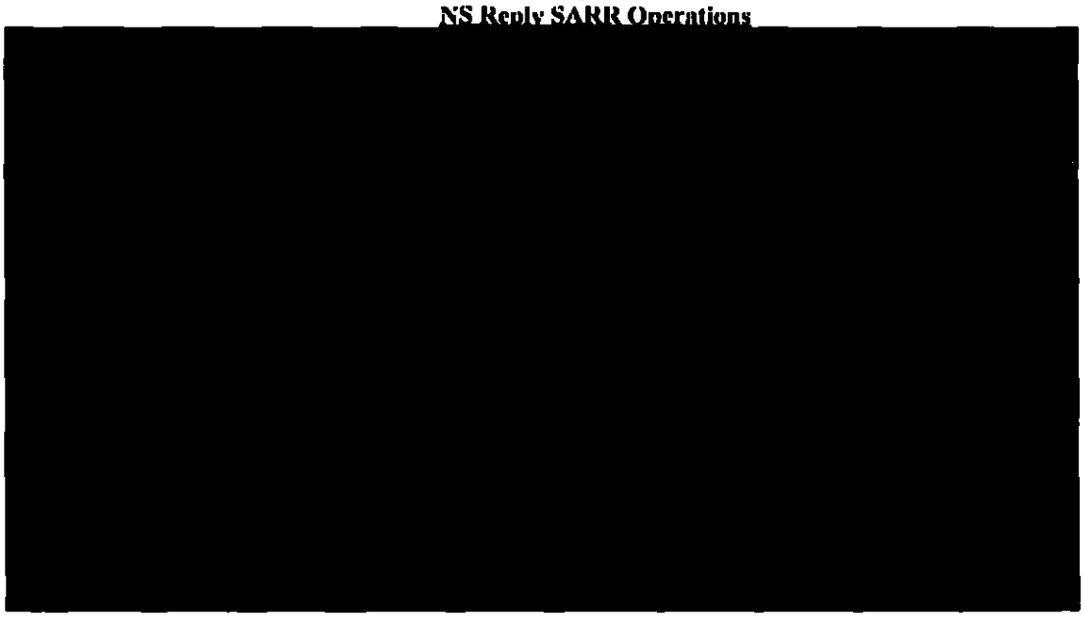
[redacted]

[158] *Id.*

[redacted]

The route of movement under NS's DRR operating plan is shown in Figure 8 below

Figure 8
NS Reply SARR Operations



A summary of the above follows:

[redacted]

[redacted]

- [redacted]}}

For other movements, NS has converted DRR cross-over movements that contain an internal cross-over segment into local DRR movements for operational purposes, imposing the full operational costs for the end-to-end movement on the DRR. However, NS continues to apply ATC divisions based on the real-world DRR-residual NS route of movement for these moves. Therefore, *NS moves the entire end-to-end movement onto the SARR, but gives a revenue division to NS for operations it no longer conducts*. For example, consider the following movement from {{[redacted]}}.

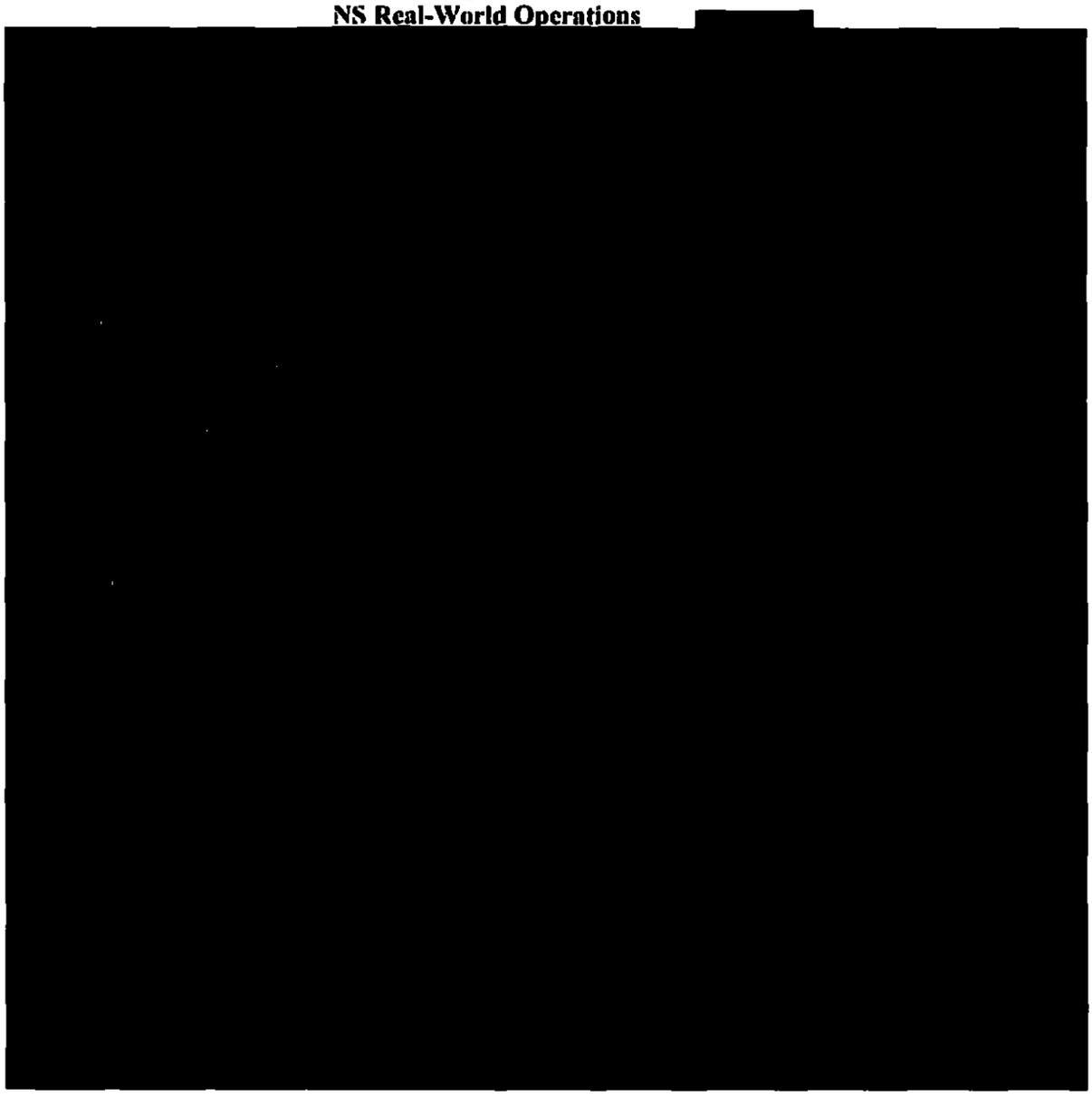
In the real-world, NS originates the traffic and moves the traffic from {{[redacted]

[redacted]

[redacted] }}[157]

The real-world route of movement is shown in Figure 9 below.

Figure 9
NS Real-World Operations [redacted]



[157] *See* e-workpaper {{[redacted]}}

In the DuPont operating plan, DRR originates the traffic and moves the traffic from

{{[redacted]

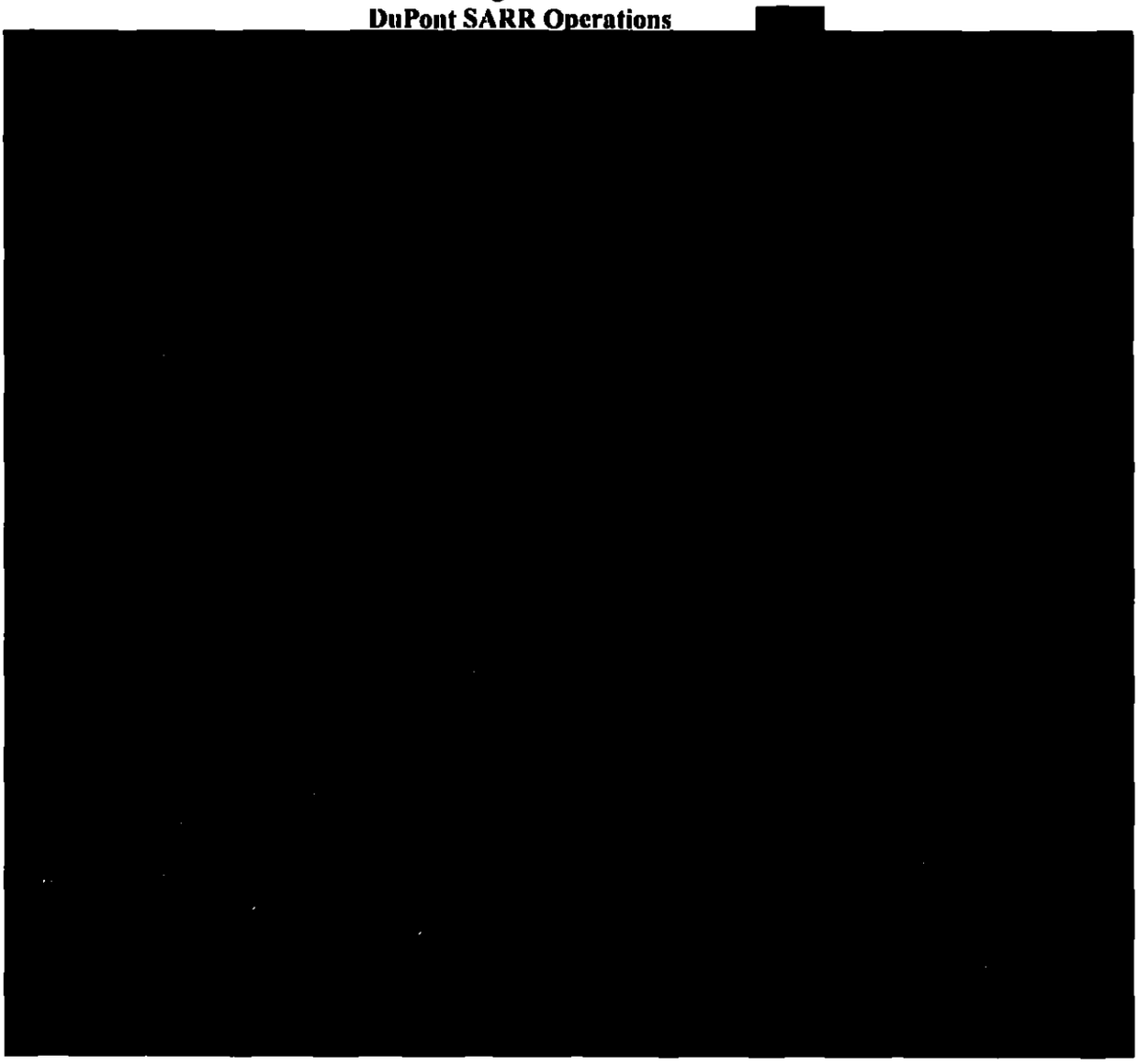
d [redacted]}}

The route of movement under the DuPont DRR operating plan is shown in Figure 10 below

[158] *Id.*

PUBLIC VERSION

Figure 10
DuPont SARR Operations



In the NS Reply operating plan, DRR originates the traffic and moves the traffic from

{{

[redacted]

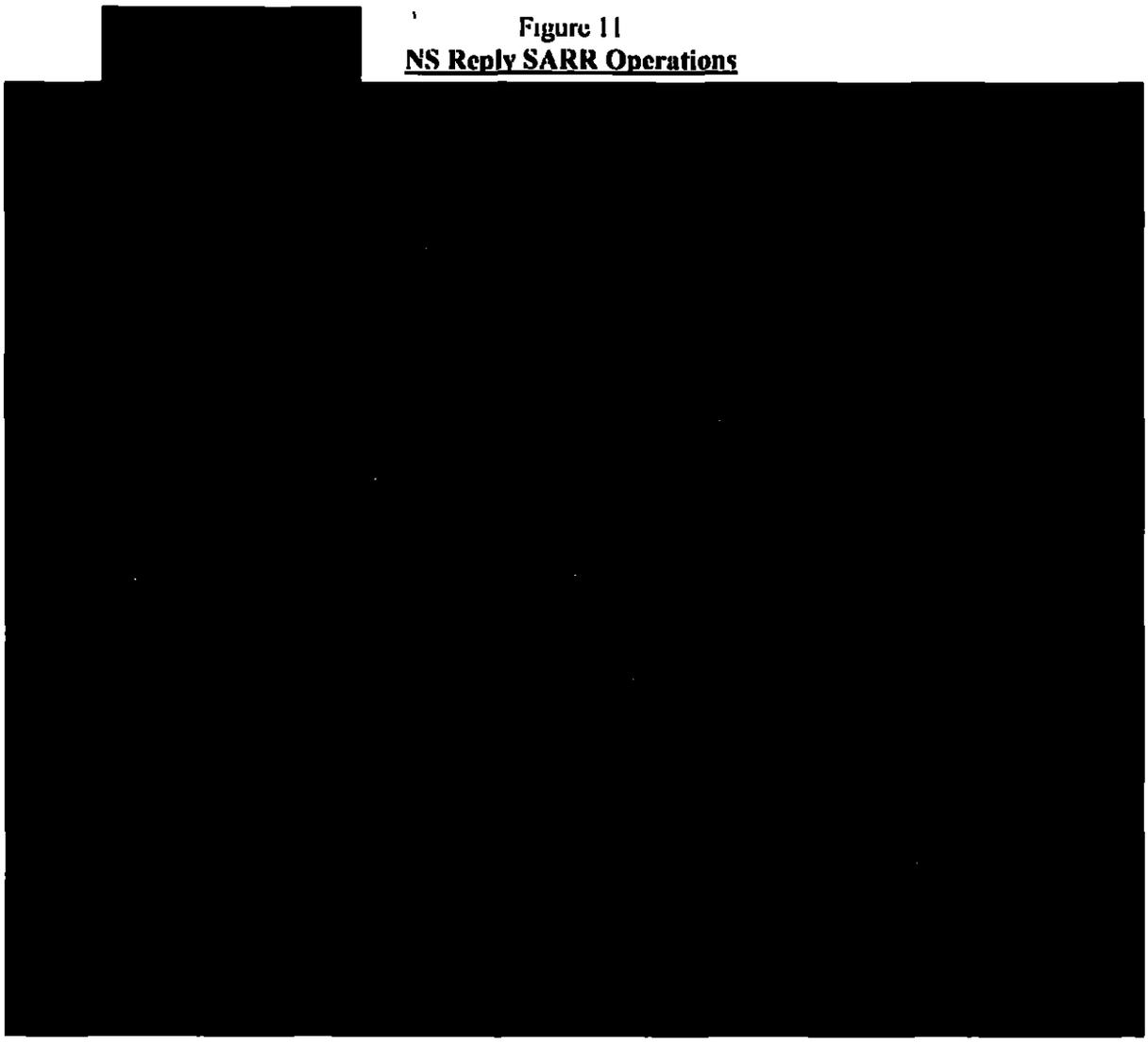
d. [redacted]}}

The route of movement under the NS DRR operating plan is shown in Figure 11 below.

[159] *See* e-workpaper {{[redacted]}}

[160] *See* NS Reply, workpaper "DRR_2010_TRAFFIC_ATC_OPENING_v1_041412 Reply xlsx" p. level "DATA_ATC_CALCULATIONS_2" cell AZ22751 (DRR revenue division in 72.3%).

Figure 11
NS Reply SARR Operations



In summary:

[redacted]

[redacted]

- [redacted]}}

c. NS Uses A Model That Is Superior To MultiRail In Developing its Real-World Operating Plan

MultiRail may have been used by the Class I railroads "in connection with their network planning and service design activities," [NS Reply III-C-158], but most of them, including NS, have moved away from using MultiRail to develop their operating plans.[161] In fact, NS has developed and is improving its own proprietary model, called the "Next Generation Car Routing System," for this purpose. In a 2009 presentation, NS claims its internal model is needed to:

- Improve train capacity utilization
- Reduce cost associated with extra trains, annulments and consolidations
- Improve asset utilization and reduce operational variability
- Provide consistent customer service
  - Improve customer commitment compliance
  - Increase on-time train performance[162]

The clear implications are that: 1) NS does not use MultiRail to block and route traffic through its system in the real-world; 2) if NS ever did use MultiRail for this purpose, NS found it necessary to replace MultiRail because MultiRail did not result in routing/blocking plans that were efficient by NS's standards; and, 3) If real-world railroads have developed their own

[161] NS may still use MultiRail to develop ad hoc reports and conduct internal analyses. However, NS uses an internal system to develop its real-world operating plan.

[162] *See* NS's 2009 presentation, included as work paper "NS Blocking Methodology Presentation.pdf," at slide 14. The presentation is also available online at: http://www.informs.org/content/download/239255/2274025/file/SC1.pdf

proprietary models that produce operating plans that are optimally efficient, it would be a step backwards to use MultiRail when the goal is to develop the operating plan for a "least cost, most efficient" SARR.

The operations implicit in the real-world NS traffic data, upon which DuPont based the DRR operating plan, reflect the result of NS's operating planning efforts. Replacing them with an operating plan developed from a less powerful modeling tool that was not specifically designed to accommodate NS's specific operating requirements is unnecessary and unlikely to result in more efficient operations, even if its use did not result in the creation of impermissible off-SARR (external) reroutes

d. NS's MultiRail-Based Modeling Exercise Fails To Consider Downstream Impacts On Both DRR Traffic And Other Non-Selected NS Traffic

Not only was NS's reshuffling exercise unnecessary, it was also done without regard for the potential downstream impacts on other NS traffic that was not included in the DRR traffic group. The exercise NS undertook was not limited to developing a plan for the movement of DRR traffic "across the DRR network,"[161] as NS claims it did. The NS modeling exercise considered only the truncated DRR traffic group, and disregarded the NS traffic not included in that group.

However, in an apparent effort to head off a criticism that the NS MultiRail modeling exercise does not take into account the downstream service requirements of shippers who use the DRR network, NS developed a plan for the routing and movement of DRR traffic over the entire NS network. In prior cases where train routing and scheduling programs have been used to develop SARR-specific operating plans, the parties using the programs have been criticized for having failed to accommodate the upstream and downstream off-SARR segments when

[161] *See* NS Reply, p. III-C-155.

developing parochial SARR operating plans This has happened because traffic has been blocked and moved from SARR on-junction to SARR off-junction to maximize SARR efficiency while failing to consider whether the SARR traffic, as received at the SARR on-junction, could accommodate the proposed on-SARR blocking plan, or whether the SARR traffic, as delivered to the off SARR junction, would accommodate the blocking required for final delivery to the shipper on the residual incumbent segment Most recently, this occurred in *Seminole*, where

> CSXT's operating plan [did] not maintain any continuity with the trains on which the cars were received at the on-SARR point Rather, CSXT identified all SFRR cars moving to the same on-SARR locations and then modeled a new way to move them, using the MultiRail program to create hypothetical new blocks of cars and hypothetical new trains in which to transport them [164]

NS appears to have recognized that it must account for the necessary blocking from real-world NS origin to real-world NS destination for all SARR traffic, and has therefore undertaken an effort to develop a blocking plan for the DRR segments as well as the upstream and downstream residual NS segments. Although NS likely believes it has avoided criticism as it related to providing seamless service at DRR-residual NS interchange locations, it has created a whole slew of other problems in doing so.

First, as discussed above, NS has created alternate routes for many DRR movements that use alternate interchange points between the DRR and residual NS, which results in externally rerouted traffic That is, NS has imposed upon the residual NS the requirement to move DRR traffic over internal cross-over segments that are not used in the real-world An example is the movement from {{[redacted]}} discussed above

Second, also as discussed above, NS has transformed DRR-residual NS cross-over movements to DRR local movements for purposes of developing the DRR operating plan and

[164] *See* Rebuttal Evidence of Complainant in *SEMINOLE*, p III-C-23

operating costs while continuing to allocate revenues to the residual NS for operations over segments the movement no longer traverses.

Third, the NS modeling exercise included only carload traffic Because NS excluded unit train traffic from its modeling exercise, NS did not account for the requirements of that traffic in developing its routing and operating plans for the carload traffic it ran through the MultiRail model As discussed in more detail below, MultiRail allows the user to set various time and mileage penalties (or rewards) for using or avoiding particular routes. This sort of user manipulation changes the results of the MultiRail block assignment process by influencing the algorithms that select the "best" block sequence for each shipment. For example, if one wanted to reduce the blocking activity that occurs on a corridor that is heavily used by coal and intermodal through trains, one could impose a time and/or mileage penalty on manifest traffic that is blocked along that corridor, in an attempt to improve overall network fluidity. Similarly, one could impose a time and/or mileage reward on certain traffic groups to draw them to a certain corridor This could be useful for such things as balancing traffic flows with crew change points, or ensuring the utility of certain trans-load facilities.

When only a portion of the traffic is flowed through the MultiRail blocking process, these user-developed push-pull levers become ever more important, as MultiRail's default assumption is that there is no interference from other (non-modeled) traffic. It is critically important for the MultiRail user to fully understand the operational requirements outside of the traffic group modeled in MultiRail. NS does not appear to have used many of the available levers, or even given much thought to how unit train traffic would influence or be influenced by the MultiRail generated blocking plans. NS provided no mention or documentation of any attempt whatsoever

to balance the requirements of shippers whose traffic was pushed through MultiRail with the requirements of other shippers

Fourth, the NS modeling exercise ignores the requirements of the real-world NS traffic that was not included in the DRR traffic group by improperly assuming away any interference the NS-developed DRR operating plan may impose on non-selected NS traffic. Even if NS's claims that its model optimizes the movement of DRR traffic over the system were true—which they are not—it completely failed to determine the extent to which its modeling would displace non-selected traffic. In contrast, the DRR model implicitly accounts for the requirements of non-selected traffic because it is built from the NS's real-world train operations that, by definition, accommodate all NS shippers' needs.

e. NS's MultiRail-Based Modeling Exercise Fails To Account For All Selected DRR Traffic

NS utilized MultiRail to develop its operating plans for both the base (2010) and peak years (2018), however NS submitted four (4) different MultiRail scenarios: 2010; 2010 DuPont Traffic Only, 2018; and, 2018 Network Update. The 2010 scenario includes the non-unit train base year traffic DuPont selected in Opening. After running the 2010 base year scenario and evaluating the results, NS determined that MultiRail failed to route some of the DuPont issue traffic over the DRR system In order to remedy this error, NS created an additional MultiRail scenario for 2010 that only contained DuPont issue traffic In the 2010 DuPont Traffic Only scenario, "adjustments were made to ensure that this traffic would be handled exclusively by the DRR, which is one of the requirements of a SARR "[165]

NS also created two 2018 scenarios The first 2018 scenario was utilized for RTC and yard-sizing analyses and is simply titled "2018 " NS then submitted a second 2018 scenario

[165] *See* NS Reply e- workpaper "NS MultiRail Scenarios.doc."

titled "2018_Network Update" where "adjustments were made to certain DRR network links, mainly regarding the ownership assignment near new interchanges between the DRR and residual NS. While the changes resulted in no material changes to the train plan, NS also submits a set of calculations based on the revised network "[166]

Because NS's downstream analyses – including its RTC modeling exercise and development of operating statistics – rely on these Scenarios, all traffic contained in these scenarios must be fully processed through MultiRail. NS states that:

> the DRR's carload traffic was "flowed" through the program, which assigned each individual car to one or more blocks as necessary to move it from origin (or on-SARR junction) to destination (or off-SARR junction)... This process generated, for each car, a "blocking sequence" that defined its movement across the DRR system. Cars that failed to flow completely were flagged in a "Traffic Routing- Flows with No Block Option Report" generated by MultiRail Witness Cheng reviewed that report and defined additional "blocks" as necessary to complete the movement of all cars In an iterative process, traffic was flowed through MultiRail again **until every car in the DRR's traffic group flowed successfully** through the MultiRail program and was assigned a complete "blocking sequence "[167]

However, NS's MultiRail evidence reveals that traffic flows were left unassigned to blocks, and blocks were left unassigned to trains (stranded in yards) in the NS's MultiRail scenarios. In three (3) of the four (4) scenarios that NS submitted, there is traffic that appears on the report "Traffic Routing - Flows with No Block Option "[168] Specifically, in the 2010, 2018 and 2018 Network Update scenarios there are flows flagged in the "Traffic Routing" report with the error message "Error: No blocks identified that can move this particular flow " In the 2010 scenario, 134 flows are flagged with this message These 134 flows account for 17,763

[166] *Id*

[167] *See* NS Reply, pp III-C-160-161 (emphasis added).

[168] Because DuPont has a read-only version of MultiRail, these reports were run directly from the scenarios NS filed in Reply and were not altered by DuPont

annualized[169] carloads carrying 1,637,287 annualized tons.[170] In the 2018 scenario and the 2018 Network Update scenario, 136 flows accounting for 18,710 annualized carloads carrying 1,819,414 annualized tons are flagged with this error message.[171] These stranded carloads belie NS's assertion that it successfully assigned all flows to a complete blocking sequence.

NS also failed to assign all of the blocks in its MultiRail program scenarios to trains, despite its claims. Specifically, NS states:

> MultiRail generated a "Block Train Validity Check Report" that identified any "stranded" blocks. Based on the block-to-train assignments, witness Smith also identified the yard locations at which individual blocks of cars would be picked up or set off by road trains and at which individual cars would be transferred between blocks. In an iterative process similar to that used in developing the DRR's blocking plan, trains were added or adjusted as necessary to provide complete, efficient on-SARR service for **all DRR traffic blocks.**[172]

NS clearly did not run this "iterative process" until every car flowed successfully. When DuPont ran this report for active blocks, at least one block appeared under the heading "Unassigned Blocks" or "Stranded or Partially Routed Blocks" in all four of NS's MultiRail scenarios.[173]

The 2010, 2018 and 2018 network update all contain traffic under the heading "Unassigned Blocks" that "have not been assigned to a train at their origin point."[174] In the 2010 scenario, 29 blocks appear under this heading; these 29 blocks carry 1,441 annualized carloads.[175] In the 2018 scenario, 81 blocks appear under this heading; these 81 blocks carry 43,094

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[169] Annualizing is necessary because MultiRail calculations are based on a fractional average day basis.
[170] *See* e-workpaper "mmtrfseq_2010 xlsx."
[171] *See* e-workpapers "mmtrfseq_2018.xlsx" and "mmtrfseq_2018_netupdate.xlsx "
[172] *See* NS Reply, p. III-C-162 (emphasis added).
[173] As DuPont has a read-only version of MultiRail, these reports were run directly from the scenarios NS filed in Reply and were not altered by DuPont.
[174] From the MultiRail 3 Help "Report Manager" - "Train Reports" - "Block-Train Validity Check reports" *See* e-workpaper "Printing_Block-Train Validity Check reports_.pdf."
[175] *See* e-workpaper "mmtrnblkval_2010 xlsx "

annualized carloads.[176] In the 2018 Network Update scenario, 83 blocks appear under this heading, these 83 blocks carry 49,934 annualized carloads.[177]

MultiRail's help manual explains that blocks under the heading "Stranded or Partially Routed Blocks," "have been set out by a train short of their destination and abandoned."[178] All four scenarios submitted by NS contain traffic under the "Stranded or Partially Routed Blocks" heading. Most importantly, in the DuPont only traffic scenario, this report shows that one (1) block accounting for 25 annualized carloads of DuPont's issue traffic did not reach its destination In fact, MultiRail's help manual indicates that, "traffic contained in unassigned or stranded blocks will lack a complete trip plan. This traffic will be ignored in the SuperSim seven-day simulation and will not appear in the associated statistics and reports."[179] In the 2010 scenario, 29 blocks appear under this heading; these 29 blocks carry 58,680 annualized carloads [180] In the 2018 scenario, 45 blocks appear under this heading, these 45 blocks carry 102,630 annualized carloads [181] In the 2018 Network Update scenario, 47 blocks appear under this heading, these 47 blocks carry 119,403 annualized carloads[182].

The combination of these reports shows that, in the 2010 scenario, over 77,000 carloads of the DRR traffic did not reach their final destination This is 1 7 percent of the total 4 5 million carloads NS modeled in MultiRail.[183] Clearly NS did not account for "every car" on the DRR as it stated in Reply. This serves to further underscore the fact that MultiRail is a very iterative

[176] *See* e-workpaper "mmtrnblkval_2018.xlsx "
[177] *See* e-workpaper "mmtrnblkval_2018_netupdate xlsx."
[178] From the MultiRail 3 Help "Report Manager" - "Train Reports" - "Block-Train Validity Check reports"- *See* e-workpaper "Printing_Block-Train Validity Check reports_.pdf"
[179] *Id*
[180] *See* e-workpaper "mmtrnblkval_2010.xlsx "
[181] *See* e-workpaper "mmtrnblkval_2018.xlsx "
[182] *See* e-workpaper "mmtrnblkval_2018_netupdate xlsx."
[183] *See* e-workpaper "traffic_routing_all flows xls."

process, and NS simply failed to work through the required volume of iterations to account for all traffic and trains NS simply did not "provide the most efficient service to customers."[184]

f. NS's MultiRail-Based Modeling Exercise Relies on Simple Mathematical Algorithms Rather than Real-World Operations

NS complains at length that portions of DuPont's operating plan were based on "mathematical calculations," which NS claims are unsupported and inconsistent with a credible operating plan. For example

> DuPont's mathematical approach to yard sizing and configuration led it to "oversize" the DRR's physical plant by building yards at locations where no yard is needed to support efficient DRR service.
>
> ***
>
> The number of yard crews and yard locomotives that DuPont assigned to each DRR yard are likewise based upon mathematical calculations that bear little (if any) relationship to the actual work that would have to be performed on daily basis [185]

Notwithstanding the fact that NS's statements are based on NS's assessment of the DRR facilities relative to the NS operating plan (which is a meaningless evaluation), *all* models are based on mathematical calculations. MultiRail is no different in this regard. Neither are models derived from MultiRail outputs

At the most basic level, MultiRail's modeling framework is set up to model operations on an average basis. More specifically, the MultiRail Traffic Manager restates the aggregated annual (or monthly or quarterly, etc) traffic statistics reflected in the traffic data on an average cars per day basis before assigning the traffic to blocks Therefore, the MultiRail model does not model actual railroad operations, which are lumpy, but rather models *average daily railroad operations* which are smoothed out and flat from day to day, and *includes fractional cars*. The

[184] *See* NS Reply, p. III-C-164.
[185] *See* NS Reply, pp III-C-42-44.

average daily railroad operations on a movement-specific basis, which include the movement of fractional cars, are then ratcheted up to develop average train statistics. This by definition is a "mathematical calculation." In contrast, the DuPont operating plan is based on actual railroad trains and operations that vary considerably from day to day.

This difference is ultimately manifested in the very different peak period train lists that are developed using DuPont's and NS's methodologies. DuPont developed its peak week train list by: 1) forecasting growth on a shipment-specific basis, 2) aggregating that growth on a traffic type basis, 3) calculating the amount of trains that must be added to/deleted from the base period train list to accommodate projected growth; 4) adding/deleting trains on a random basis, 5) determining the actual week with the greatest number of projected trains, 6) expanding that week to include shoulders for warm-up and cool-down operations; and 7) modeling those trains through the RTC model. Therefore, DuPont models a true peak period, reflective of operational anomalies, track maintenance activities, and seasonal peaks and commodity fluctuation.

In contrast, NS developed its peak week by simply expanding its average daily and weekly operations to an annual basis, ensuring that the exercise does not reflect the peak at all. As NS stated in its discussion of its hump yard configuration:

> Because NS's "SuperSim" [MultiRail] process was based upon an average week (rather than the peak week) during the peak year, the average peak daily inventory developed by witness Rieppi for each yard is conservative—it represents the number of cars that the DRR would need to accommodate during the busiest hour of a typical day during the peak year (rather than the maximum capacity required for the peak hour of the peak week).[186]

NS would have the Board believe that it made this calculation in this manner in order to be conservative. However, the truth is that NS made this calculation in this manner because NS's use of the MultiRail software to develop its operating plan required it. Because the

[186] *See* NS Reply, p. III-C-176.

MultiRail software is merely a series of algorithms that develops a very complicated mathematical calculation of the average daily activities on a system, it is impossible to use MultiRail to develop a true peak period analysis NS's claims of being conservative are merely a smokescreen designed to hide the mathematical nature of its model, and its inability to produce a reasonable estimate of the peak period operations. Surely if DuPont had proposed to substitute average statistics for peak statistics, NS would not have accepted the approach as "conservative."

In addition, MultiRail's Block Manager module allows for the user to enter many index values that impose penalties in the form of extra time and mileage associated with specific yards, yard activities, and routes. These penalties act as "levers" to affect the assignment of cars to blocks, as MultiRail will seek to find the shortest block route inclusive of penalties. The levers can either draw cars to, or push cars away from, specific blocks and routes based on user-entered indices At its core, MultiRail is simply a calculator with a goal-seek mission to find the best route for each fractional car based on the blocks and penalties imposed by the user It is a mathematical sequencing model based on known and adjustable algorithms.[187] Therefore, NS's block assignments are the product of a series of mathematical calculations that are influenced by several user-entered numbers, many of which are based on assumptions for which NS provided no documentation or supporting evidence

An example of the user-entered indices and adjustments to the standard algorithms is explained in the MultiRail user-manual. The Block Sequence generator description identifies "Data entry requirements" such as "Flow Constraints" where the user can "enter specific Customer and/or Commodities constraints, if any, for the route" Furthermore, there are "Control Parameters" where the user can select from different options that will "Apply

[187] For example the MultiRail user-manual describes the Block Sequence Generator as "a powerful feature in MultiRail that algorithmically determines the sequence of blocks that will be taken by a traffic flow . " *See* e-workpaper "Printing _Block Sequence Generator_.pdf"

Constraints on Matching Flows and Blocks " These constraints include, but are not limited to, "Customer Flow Constraints" and "Commodities Flow Constraints "[188] NS provided no documentation regarding which constraints it utilized in MultiRail, much less what factors it may have considered in determining which constraints should be used Because DuPont was only provided with the read-only version of MultiRail, it was unable to recreate or determine NS's processes. However, based on review of the provided data, it appears that NS has constrained commodity flows for TIH traffic In the MultiRail Traffic Manager, NS marked certain traffic flows with a "TIH" flag under the "Commodity Category Code." Because traffic with these flags appear on the same traffic blocks in the Block Manager, it appears that NS utilized some type of constraint in the Block Sequence Generator based on this flag

NS claims that its operating plan is superior to DuPont's because "NS's MultiRail analysis not only identified the trains that the DRR would need to operate, **but also developed a schedule upon which they would operate.**"[189] However, this is a misleading statement because NS manually overrode most of the train schedules that MultiRail "developed." MultiRail's user manual notes that, "If a user enters specific arrival and/or departure times and days or dwell times in the Route tab (for one or more locations), this data will override MultiRail's calculations."[190] Even with the read-only version of MultiRail, DuPont was able to observe where NS altered dwell times in the Route Tab of the Train Manager. Per the user manual, the column titled "User Dwell Time" is a "read-only indicator" that "allows you to quickly identify a user-defined dwell time "[191] One example in which NS has manually altered the dwell times is

[188] From the MultiRail 3 Help "Block Manager" - "*Using the Block Sequence Generator*" - "see Block Sequence Generator " *See* e-workpaper "Printing_Block Sequence Generator_.pdf."
[189] *See* NS Reply, p III-C-164 (emphasis added)
[190] From the MultiRail 3 Help "Report Manager" - "Train Reports" - "Train Schedule Reports" - *See* "Time Calculations in Train Schedules " See e-workpaper "Printing_Time Calculations in Train Schedules_.pdf."
[191] From the MultiRail 3 Help "Train Manager" - "Train Manager Field Definitions" - "Route Tab " *See* e-workpaper "Printing _Route Tab (Train Manager)_ pdf "

for train {{[redacted]}},[192] where four (4) of the six (6) dwell times were manually entered by NS. Of the 1,265 Active trains NS entered into MultiRail, NS entered user-defined dwell times for 645, or 51 percent of the trains NS altered 33 of the 34 (97 percent) Premium Intermodal Trains, 52 of the 55 (95 percent) Intermodal trains, and 183 of the 252 (73 percent) Merchandise Trains.[193] Because DuPont was only provided the read-only version of MultiRail, it cannot determine the impact that NS's manually adjusted dwell times had on the train schedules Nevertheless, it demonstrates that the NS witness, not MultiRail, determined the vast majority of the train schedules in the NS operating plan.

Overall, NS's MultiRail exercise is a house of cards built from average daily statistics in the form of fractional carloads that would have moved on generic blocks and generic trains every day of the year. In contrast, DuPont's model is built from actual carloads of traffic that moved through NS's system on actual train consists on specific dates Therefore, it was extremely difficult to compare the routes and movements NS generated through its MultiRail based model to the routes and movements DuPont included in its traffic data based model. The required comparison was between a daily fraction of a carload assigned to no specific car or train (NS model) and a specific carload moving on a specific railcar on a specific date (DuPont model).

g. NS's *MultiRail*-Based *Modeling* Exercise Is Riddled With Faulty And Unalterable Inputs And Assumptions That Render Its Outputs And All Downstream SAC Analyses Invalid

NS states that "MultiRail is a sophisticated modeling tool that integrates information regarding a railroad's traffic, network configuration, and customer service requirements to generate blocking plans and train schedules that are optimized to serve an identified traffic group " [NS Reply III-C-157-158] As stated in the section above, the use of MultiRail in

[192] *See* e-workpaper {{[redacted]}}
[193] *See* e-workpaper "mmirnsumbas xlsx" level "summary."

developing NS Reply evidence was unnecessary and, more importantly, distorting Furthermore, review of NS's Reply evidence reveals that NS's MultiRail-based model was not only unnecessarily complicated and burdensome, but also riddled with errors and inefficiencies In fact, it is NS—not DuPont—that created an Operating Plan so deficient it must be rejected.

As discussed above, MultiRail has four main inputs that are the building blocks for the model. 1) the network or rail lines, 2) the traffic (in this case DRR carload traffic); 3) the blocks to which the carload traffic is assigned; and, 4) the trains available to move the various blocks of traffic. In addition, there are numerous user-defined adjustments and assumptions within the model that determine how the data in these four main inputs is processed Notably, all four of these inputs were also utilized by DuPont in developing its Operating Plan in Opening, either explicitly or implicitly through DuPont's use of actual NS traffic data to develop its Operating Plan Therefore, the building blocks for NS's MultiRail-based model are not any different than the building blocks for DuPont's traditional traffic data-based model

NS claims that it utilized MultiRail to build an Operating Plan for the DRR's traffic "from the ground up."[194] However, as discussed above, NS has already performed this task in the normal course of business. Instead of utilizing the operating plan that is implicit in NS's actual traffic data DuPont used in opening, NS added a layer of complexity and inefficiency through its use of the MultiRail program to generate its Operating Plan, which utterly severs the NS's operating plan from NS's real-world operations The extent of complexity and inefficiency becomes clear only after laborious analysis of the vast amounts of data inputs, assumptions, and outputs that form the basis for developing NS's Operating Plan and operating statistics

The first layer of needless complexity that MultiRail introduces is manifested in the procedures required to transform the carload traffic from the NS waybill data file into the format

[194] *See* NS Reply, p. III-C-157

required for the Traffic Manager module in MultiRail to function properly As NS explains, "It is industry practice to use substitution logic to associate information received on the shipment waybills (waybills are received from the customers or partner RR's) with the proper rail yard or interchange location where the car begins or ends its travel."[195] To complete this substitution process, NS altered the 2010 NS waybill data for two-fifths of the merchandise carloads NS processed through MultiRail Specifically, NS altered the origin station for 18 percent of the DRR carload traffic, NS altered the destination station for another 15 percent of the DRR carload traffic, and NS altered both the origin and the destination for another 6 percent of the DRR carload traffic Therefore, NS altered a total of 39 percent of the merchandise carload traffic data by way of terminal substitutions to allow MultiRail to run, thus utterly divorcing the NS's made-for-litigation operating plan from the NS's actual operations.[196]

Obviously, this substitution process resulted in a mismatch of origin and destination information between the NS waybill and the MultiRail traffic data.[197] Not surprisingly, this data mismatch proved to be problematic when DuPont attempted to evaluate the outputs from the MultiRail tool relative to the actual NS traffic data for purposes of comparing routes and cycle times for the traffic NS made no attempt to show that the Operating Plan it developed using MultiRail provided routing and service to the non-issue traffic in the DRR traffic group sufficient to meet the standard reflected in NS's actual operations Review of the inputs to and outputs from MultiRail sheds some light as to why NS did not attempt to make such a showing. Namely,

[195] *See* NS Reply e-workpaper "Modeling Operating Plan in MultiRail for the DuPont Rate Case.docx," at 15
[196] *See* e-workpaper "Substitution Records_Rebuttal.xlsx" p. level "Substitution Counts"
[197] In NS's Reply evidence, NS only provided line by line lists of the substitutions made to the origin and destination names of Merchandise traffic as a link between the NS waybill data and MultiRail. For all other traffic, NS simply provided a general list of potential origin and destination names for substitutions it may have made to data before placing in MultiRail Essentially, there was no specific line-by-line list for all other traffic where substitutions were made to NS actual origin and destination names. Additionally, the substitutions that were made for specific origin and destinations names for other traffic were not consistent This further complicated the connection between actual NS traffic data and MultiRail.

linking the actual traffic data to the MultiRail output tables that were developed from significantly altered traffic input tables is a daunting task, and in some cases completely impossible

After the altered traffic data is entered into MultiRail, the program assigns the carload traffic to blocks The initial blocking plan NS used as an input to MultiRail came from actual NS blocking data. Specifically, NS states, "The starting blocking plan uploaded into MultiRail was from NS's Main Frame system as of April 17th 2012 Since then the blocking plan has been modified in MultiRail to satisfy the 2010 traffic blocking needs."[198] The modifications NS had to make to its real-world blocking plan for it to work in the MultiRail environment create another disconnect, and further separate NS's made-for-litigation modeling exercise from NS's actual day-to-day operations

After the modified NS carload traffic and the modified NS blocking plan have been entered into MultiRail, the MultiRail algorithms assign each carload of traffic to various blocks to provide end-to-end service over the entire NS system between the altered waybill origin and the altered waybill destination. NS describes this process as follows. "DRR's carload traffic was 'flowed' through the program" [199] The "flowing" process, or MultiRail sequencer, actually places traffic into blocks using user-defined block rules and penalties. This process is manipulated and defined by the user and the MultiRail algorithms are influenced by those manipulations. For example, changing the penalty index for moving traffic through a particular yard or facility type results in a time or mileage penalty (or reward) associated with using that facility, which makes the route through the facility appear either more or less efficient than it actually is. Therefore, these penalty levers change the results of the MultiRail routing

[198] *See* NS Reply e-workpaper "Modeling Operating Plan in MultiRail for the DuPont Rate Case.docx" at 14.
[199] *See* NS Reply, p. III-C-160.

algorithms As a result, the MultiRail program either forces more traffic through, or forces more traffic around, that facility than the program otherwise would. NS suggests that, through this "flowing" process, "MultiRail selected the least-cost, most efficient routing available."[200] This is simply not true and is demonstrated in the subsequent examples.

As discussed above, the traffic originating in {{[redacted]}} was not routed in the "least-cost, most efficient routing available" when flowed through MultiRail When comparing the way MultiRail routed this traffic to how the traffic actually was routed in the real-world, it is evident that MultiRail sent this traffic on an extremely circuitous route over a non-DRR segment. Not only was the route {{[redacted]}} but MultiRail created an external re-route with this traffic, forcing the residual NS to handle this traffic in a different manner and over a different part of its system from how it handles this movement in the real-world, contrary to SAC principles

In another example discussed at length above, MultiRail inefficiently routes traffic moving from {{[redacted]}} via a long and circuitous route relative to the real-world NS movement MultiRail forces the cross-over movement over the DRR from end-to-end, imposing all of the operating costs on the DRR. Yet, NS still takes a revenue division on the movement based on the actual shorter route over DRR and parts of the residual NS This arrangement is nonsensical and violates SAC principles Furthermore, NS states in Reply that reroutes are permissible only if "the alternate route can provide equal or better service."[201] NS clearly did not demonstrate that its plan provided equal or better service.

[200] *See* NS Reply, p III-C-161
[201] *See* NS Reply, p. III-C-112

Yet another example of inefficient and incorrect routing can be found on traffic originating in {{ }}. The route of movement under NS's operating plan for the DRR portion of the movement is shown in Figure 12 below.

Figure 12

NS Reply SARR Operations

In summary, by using MultiRail, NS routed this traffic from {{ }}

[202] The {{ }}

[redacted]}}[203] As a result, NS added nearly 800 miles to this movement by including a switchback loop for no apparent reason NS offered no explanation for this routing decision.

NS states that, after MultiRail assigned all of the cars to blocks, it applied "a number of quality control measures... to enhance the efficiency of the DRR's blocking plan."[204] Specifically, NS names the "Block Bypass Report" as a MultiRail-generated report that it utilized to enhance efficiency The Block Bypass Report identifies movements that could have been blocked in a more efficient manner. DuPont reviewed the Block Bypass Report included in NS's Reply evidence and found that either NS did not utilize this report to identify inefficiencies and alter its MultiRail processes, or, if NS did use this report to identify inefficiencies and make changes, NS did not run enough iterations of its model through this feedback and quality control loop to sufficiently "enhance the efficiency of the DRR's blocking plan." Specifically, "the block bypass reports examine the block sequences created by the MultiRail algorithm and suggest more direct routes that reduce car handling and expedite traffic by bypassing locations in the original sequences."[205] (E.g., assume a car is moving on a block from Atlanta, GA to Chattanooga, TN carrying 20 cars, but 10 of those 20 cars continue on from Chattanooga, TN to Knoxville, TN Had those 10 cars been blocked to Knoxville, TN at Atlanta, GA they would not need to be handled in Chattanooga, TN.)[206] For the 2010 scenario, NS's Reply MultiRail evidence shows 4,605 blocks carrying approximately 32,876 cars per day.[207] The Block Bypass

[203] *See* e-workpaper {{[redacted]}}
[204] *See* NS Reply, p III-C-160.
[205] From the MultiRail 3 Help "Report Manager" - "Traffic Volume Reports" - "Block Bypass reports" *See* e-workpaper "Printing_Block Bypass reports_ pdf"
[206] *See* e-workpaper "MultiRail Report_Block Bypass Greater Than 5.pdf."
[207] This equates to 11,966,864 cars per year. Annualizing is necessary because MultiRail calculations are based on a fractional average day basis

Report (as included in NS Reply evidence, not manipulated by DuPont[208]) suggests that 583 blocks, 13 percent of the total blocks in NS's MultiRail analysis, include traffic that could be more efficiently blocked into alternate existing blocks to bypass intermediate handling yards en route. According to the Block Bypass report, 10,156 cars per day, or over 30 percent of the carloads in MultiRail,[209] could be reassigned to alternate blocks to reduce the number of intermediate handling events required

NS specifically names the Block Bypass Report as one of the reports it reviewed in an effort to evaluate preliminary MultiRail results and make adjustments to "enhance the efficiency of the DRR's blocking plan." Upon every iterative MultiRail run, the Block Bypass Report is regenerated, at which point more (or different) inefficiencies may be identified, adjustments to blocking assignments may be made, and the next iteration can be run. NS did not specify how many iterations it ran after consulting the various quality control measures (reports) generated by MultiRail. However, the Block Bypass Report associated with the provided MultiRail evidence identifies inefficiencies that are still present in the end result of the NS exercise, after all adjustments have been made and all iterations have been completed. Clearly, if over 30 percent of the DRR traffic could be handled in a more efficient manner than that reflected in NS's final blocking assignments and its operating plan, then NS's implementation of its "quality control" process based on analyzing MultiRail's outputs was not very effective. The Block Bypass Report included in the NS Reply evidence demonstrates that NS failed to sufficiently use the feedback tools included in MultiRail to identify and remove all efficiencies

After MultiRail assigns cars to blocks and the manual review and adjustment of the traffic and blocking plan has been completed, the next step in MultiRail is to manually assign the

[208] DuPont does not have the capabilities to manipulate the reports with the read-only version of MultiRail NS provided to it

[209] *See* e-workpaper "MultiRail Report_Block Bypass Greater Than 5 xls."

blocks to trains NS used actual real-world train schedules as a starting point to assign blocks to trains. Then, as discussed above, NS's Witness Smith manually "assigned one or more blocks of cars to each train" based upon his judgment [210] This was a completely manual process. Stated differently, MultiRail does not have the capability to assign blocks to trains After the manual block-to-train assignment, NS stated that it applied "a number of 'quality control' measures" to the data However, as evident in the movement examples delineated above, the quality control measures did not eliminate a large number of the inefficiencies and errors generated from NS's MultiRail-based process.

MultiRail is simply a tool. It is not some magical program that generates a perfect operating plan. Like all tools, the person wielding the tool has more to do with the tool's efficacy than the tool itself. The user-controlled processes, from input selection, to data adjustments, to manual review of intermediate feedback and process adjustments are what ultimately leads to the end result To the extent that the user entered the wrong inputs, or made the wrong adjustments, or failed to put enough effort into identifying and correcting inefficiencies, errors and inefficiencies will exist In Reply, NS demonstrated that it is aware of the various "quality control" reports and measures it could have used (or used more) to ensure the most efficient handling is achieved in MultiRail. But the proof is in the pudding Clearly, NS did not spend enough time identifying and eliminating inefficiencies Either NS wanted to present an operating plan that contained significant inefficiencies, or it was too lazy to eliminate all of them Either way, NS attempted to ensure that the inefficiencies baked into its operating plan were unassailable by providing DuPont with only a limited-functionality version of MultiRail that does not allow DuPont to even ascertain the level of inefficiencies that exist, much less to eliminate them and properly restate the MultiRail-based analysis NS conducted Again,

[210] *See* NS Reply, p III-C-162.

by severing the SARR's operations from actual NS operations through the use of MultiRail, NS is leading the Board down a path whereby it will become impossible for the Board to *ever* determine the feasibility of a SARR operating plan by comparing that plan to reality.

DuPont's use of actual traffic data alleviates the need to correct these inefficiencies NS has spent years fine-tuning its actual operations using a proprietary tool that NS purports to be superior to anything else available, including MultiRail. STB precedent also dictates that actual traffic should be utilized wherever possible as that has been accepted by the STB and the parties in every other SAC case decided to date.

Ultimately, MultiRail is not necessary. MultiRail further complicates an already inherently complicated SAC process by creating made-for-litigation data where actual data already exists. Although MultiRail nominally starts with actual traffic data, it morphs that actual data into daily average statistics to be moved in generic blocks on trains with no actual dates or operations, instead of simply using the real movement and train data that already exists NS started with actual traffic data, and altered it to make it compatible with MultiRail. NS started with actual NS blocking plans, and manipulated them for use in MultiRail. NS started with actual NS train schedules and substituted the blocks that actually moved on them with other blocks based on NS Witness' judgment, which NS apparently believes is superior to its planning staff's collective judgment. The result of all that manipulation is an Operating Plan riddled with errors and inefficiencies

NS claims to use outputs generated from MultiRail as the basis for its downstream calculation of operating statistics and yard sizes However, NS did not provide adequate support for its manipulation and use of the MultiRail outputs for these purposes. One example of this ambiguity is shown in NS Reply file "MultiRail 2010 Train Statistics xlsx." DuPont originally

asked for a source for information contained in the first twelve (12) columns of the "ANN_DRR_TRN_ LVL_STATS" tab (which NS labeled as a MultiRail output) of this file on January 2, 2013, prior to obtaining access to MultiRail or receiving training on the program. On January 11, 2013 NS responded by saying, in pertinent part:

> NS notes that the information in the workpaper DuPont requests is included in the first 12 columns of the "ANN_DRR_TRN_LVL_ STATS" tab of NS Reply WP "MultiRail 2010 Train Statistics xlsx." Nevertheless, NS is enclosing the original "MultiRail Run 2010_ANN_DRR_ TRN_LVL_STATS 11_06" spreadsheet that was imported into "MultiRail 2010 Train Statistics.xlsx.

Enclosed with this January 11, 2013 response was a document titled "ANN_DRR_TRN_ LVL_STAT_11_06.xls," which contained the same twelve (12) columns NS alluded to in its response and the same twelve (12) columns DuPont asked for in its original January 2, 2013 request. The file provided by NS on January 11, 2013 contained no additional information regarding its origin in MultiRail. After obtaining access to MultiRail and receiving training, DuPont attempted to determine if this output file was created in MultiRail with the limited read-only access it was provided. After numerous unsuccessful attempts to recreate the twelve (12) columns of data, DuPont sought the guidance of the technical support contact it was provided by Oliver Wyman, who attended and participated in the two-day training session that DuPont's consultants commissioned upon receipt of the read-only MultiRail software package. On March 6, the technical support person designated by MultiRail's creators (Oliver Wyman) informed DuPont that "this is not a standard MultiRail report format and I would suggest you seek clarification directly from NS on exact sources of data for each column."[211] Obviously, DuPont already had sought clarification from NS regarding the source of this file. NS did not provide a

[211] *See* e-workpaper "FW Questions about MultiRail msg" with attachment "Train Report Example xlsx."

source for this file in MultiRail and an individual with years of technical hands-on experience with MultiRail could not determine the source of this data in MultiRail.

Another example of NS not providing adequate support for its manipulation and use of the MultiRail outputs is the source for files listed in its Reply work paper, "Modeling Operating Plan in MultiRail for the DuPont Rate Case" under the section "Files Provided to the RTC Team." NS provides a description for each of the nine (9) files containing MultiRail outputs used in the RTC modeling process Of the nine (9) files, NS notes that three (3) are "generated directly from MultiRail," and the other six (6) are "obtained after additional processing."[212] However, this is not the case Specifically, the MultiRail user-manual provides a list of all the standard reports that MultiRail can generate and the associated report file name.[213] The only file from NS's list of nine (9) files containing MultiRail outputs that appears in the MultiRail manual is "*mmNdeSum*" *or* "*Nodes/Station Summary.*"

The "MultiRail 3 Reports" section of the user-manual does note that "with a copy of Seagate Crystal Reports Professional, you may modify the standard MultiRail reports to suit your specific needs." NS's evidence includes eight (8) reports with names not found in the list included in the MultiRail user-manual Therefore, it is clear that NS built custom reports from MultiRail outputs to develop the data needed to feed its downstream analyses. NS failed to provide DuPont or the Board with any explanation as to how these custom reports were created and what types of manipulations were made in the "additional processing" that was necessary for these reports. Because DuPont was provided read-only access to MultiRail, it cannot generate or recreate any custom report that NS utilized in its Reply evidence

[212] *See NS* Reply e-workpaper, "Modeling Operating Plan in MultiRail for the DuPont Rate Case" at 12

[213] From the MultiRail 3 Help "Report Manager" - "MultiRail 3 Reports " *See* e-workpaper "Printing_MultiRail 3 Reports_.pdf."

These are just two examples of many where DuPont was unable to determine the source of a report NS stated was a MultiRail output In addition, NS failed to provide any of the trip plans or "SuperSim" outputs from the NS read-write version of MultiRail in its Reply evidence

4. ***NS's RTC Model Of The DRR Is Filled With Errors***

NS rejects DuPont's opening RTC simulation in favor of its own RTC simulation based on output from the MultiRail model Mysteriously, NS decided to "conservatively model an average week"[214] in place of the SARR required peak period. This decision alone invalidates NS's RTC model The primary function of the RTC model in a stand-alone rate case is to "test the adequacy of the configuration (to make sure the [SARR] would have sufficient capacity to handle the peak forecast demand)"[215] By failing to model the peak period, NS has failed to demonstrate the feasibility of its proposed system.

In addition to this fatal error, NS's RTC model is filled with other errors that make its output useless for the purpose of testing the configuration of the DRR.

a. NS Incorrectly Modeled Foreign Railroad Trains

NS's RTC model included an astounding 9,556 foreign and commuter trains crossing its system. Notably, this is 2,438 more trains crossing its system than NS actually models on its SARR.[216] This tremendous volume of foreign traffic was loosely approximated by NS using faulty data and flawed methodology in an effort to encumber the DRR network in its Reply RTC Simulation NS's incorrect coding of its foreign train priorities (as explained above) is exacerbated by the inaccurate volume of foreign traffic. NS should have used its own real world

[214] *See* NS Reply III-C-229.
[215] *See* NS Reply, III-C-117 also *WFA/Basin*
[216] *See* DuPont Rebuttal e-workpaper "NS Reply RTC Train Inputs.xlsx."

data which it had, in fact, already included in its RTC model in the form of outages but decided to disable them so as to avoid a "double count" of foreign traffic.[217]

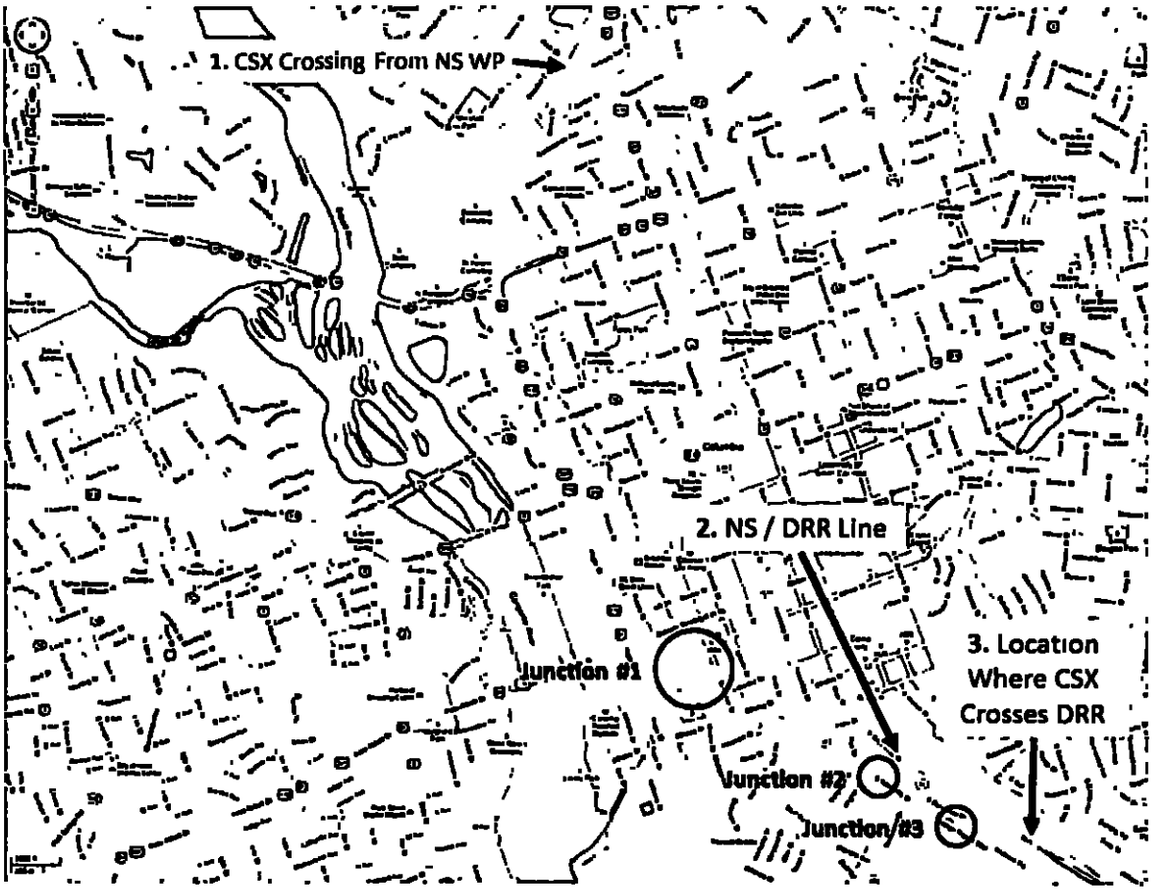
NS states that "As DuPont's experts know, information regarding the number of foreign trains that cross NS's lines is publicly available from the FRA.[218]" NS then refers to a publicly available database on the FRA's website, which NS has used in its Reply workpapers to support the creation of its foreign trains in its RTC model. DuPont experts are indeed aware of this data; however, DuPont's experts are also aware that, according to the US DOT,[219] this data "*shall not be subject to discovery or admitted into evidence in a Federal or State court proceeding or considered for other purposes in any action....*[220]"

Moreover, the data included in the FRA's database is extremely dated, and not reflective of actual current or future operations As shown in the database, the vast majority of the data reflects operations from the 1970's, 1980's and 1990's, with virtually no data from the 21st Century [221]

In addition to using dated information, the methodology NS used in its analysis is questionable at best NS relies on train crossing information for highways, not railroads, to support its foreign traffic NS assumes that, if a train of a foreign railroad crosses a nearby highway 3 times per day, it will also cross NS lines 3 times per day. An example of the fatal flaw in this approach is demonstrated in Figure 13 below.

Figure 13

[217] *See* NS Reply e-workpaper "NS_REPLY_DRR_RTC_NETWORK.PERMIT "
[218] *See* NS Reply, III-C-142
[219] U S DOT NATIONAL HIGHWAY-RAIL CROSSING INVENTORY Policy, Procedures and Instructions For States and Railroads, Page 11.
[220] 23 USC § 409 – Discovery and admission as evidence of certain reports and surveys
[221] The FRA database can be accessed here: http://safetydata.fra dot.gov/OfficeofSafety.



In Figure 13 above, arrow #1 illustrates the highway crossing location where NS gathered the CSX train count information to develop foreign trains for its model.[222] However, there are no less than three junctions between this location and the location where CSX actually crosses NS's line at arrow #3 The junctions are circled in Figure 13 above It is evident that any train that crosses the highway at arrow #1 could be originating from or destined to points down the lines highlighted at junctions 1, 2, and 3 above Therefore, this methodology does not present an accurate representation of the number of trains crossing the DRR mainline at arrow #3 and clearly cannot be relied upon as evidence.

[222] *See* NS Reply e-workpaper "At-Grade Foreign Crossing Train Data xlsx" Level "Diamonds" Excel Row 6

Even if the source data NS used in developing its foreign trains had not been improperly used, NS incorrectly uses the wrong dates and wrong locations for many of the crossings in its analysis. DuPont experts discovered NS's supporting documentation was incorrect for a variety of reasons including, but not limited to

1 Records input from the wrong time period

2 Highway crossing too far from actual Railroad crossing to be reliable

3. Railroad Junctions located between highway crossing and railroad crossing

4. Railroad Yard located between highway crossing and railroad crossing

5. Incorrect Road Crossing used

In fact, 75 percent of NS's data used to generate its foreign trains suffered from at least 1 of the above mentioned errors.[223]

b. NS Improperly Modeled Random Outages

NS identified 1,231 delays from its train delay database that it believed should be applied to the Peak Period RTC simulation. However, NS's Reply RTC model contains 1,774 outages, 1,112 of which are disabled The end result is that NS's Reply RTC simulation effectively has only 662 outages. NS explains this discrepancy by stating that NS "randomly chose 50% of the remaining delay events for inclusion in its RTC simulation."[224] NS makes no attempt to support the removal of this 50 percent of the delay events DuPont also identified an additional 51 outages that were included in the 1,231 outages identified by NS that were not included in the model DuPont has included all of these outages in its Rebuttal RTC simulation and has only removed outages were it was able to discern that the train identified in the delay file was not detained.

[223] *See* DuPont Rebuttal e-workpaper "Corrected At-Grade Foreign Crossing Train Data xlsx "
[224] *See* NS Reply, p. III-C-241.

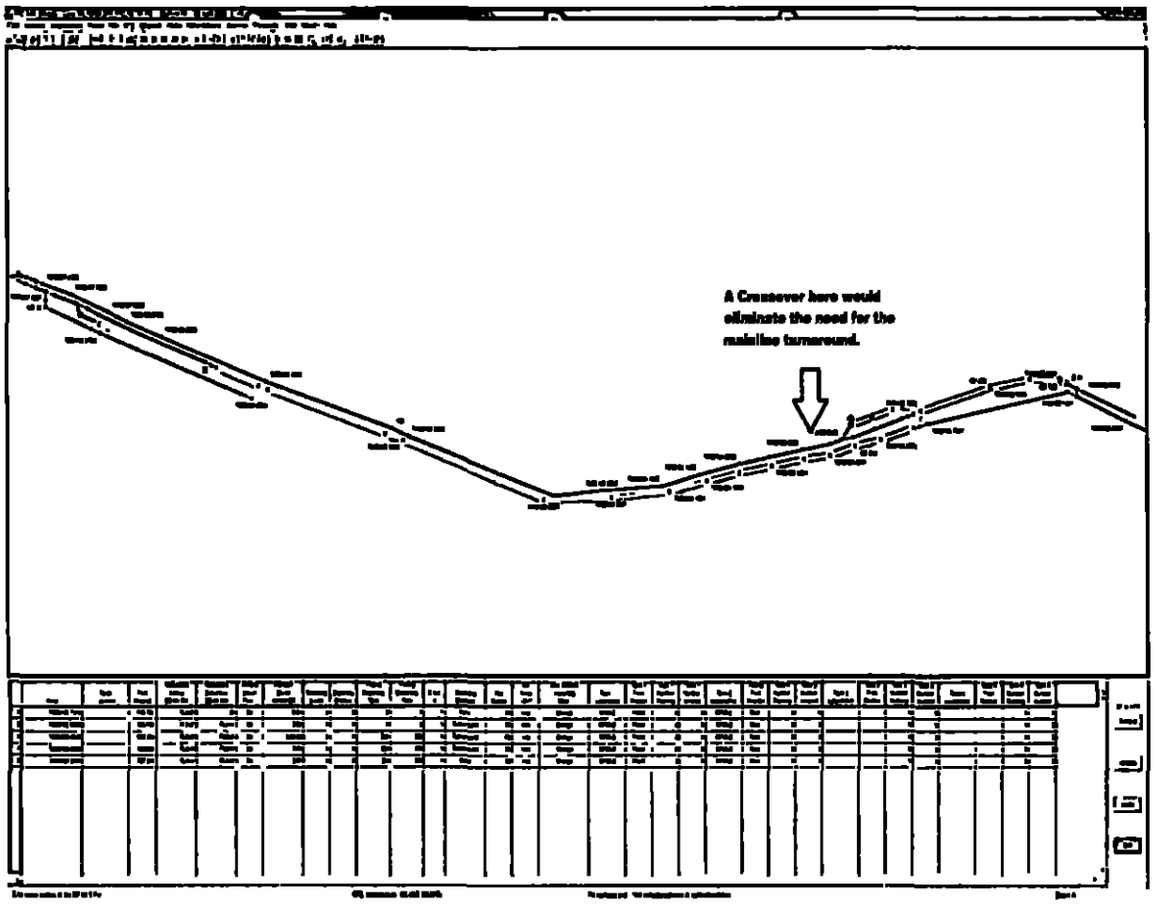
c. NS Improperly Input RTC Trains

As discussed above, the use of MultiRail to generate trains has resulted in gross inefficiencies in the routing of trains Upon review of NS's Reply RTC model, it is evident that this issue has been compounded by other limitations of MultiRail. Because MultiRail does not "understand" when a train would be required to make a turn move, it cannot properly account for the inefficiencies of turning a train

As any railroad expert knows, a turn move is inefficient, particularly when it must take place on the mainline, and will severely hamper the flow of a network In order to turn a train, it is required to come to a complete stop and sit while the turn is completed, completely blocking the passage of any other trains for the duration of the time it needs to slow down, reposition locomotives, reposition the crew and reverse direction. In many cases, making a turn on the single track mainline would make it impossible to reposition locomotives to the front of a train unless it was preconfigured to run distributed power

As a result of its inability to account for turn moves, MultiRail has tasked the DRR with making 2,731 turn moves during the peak period, 0.38 turns per train on the whole This is a 91 percent increase to the 0 20 turn moves per train made by the trains modeled in DuPont's Rebuttal RTC simulation, which is based on NS's real world operations DuPont believes that some of this poor planning is due to the inability of the MultiRail model to determine where turn moves are required, and to NS's failure to make simple network adjustments to prevent an unneeded turn move in its RTC model One example is shown in Figure 14 below.

Figure 14



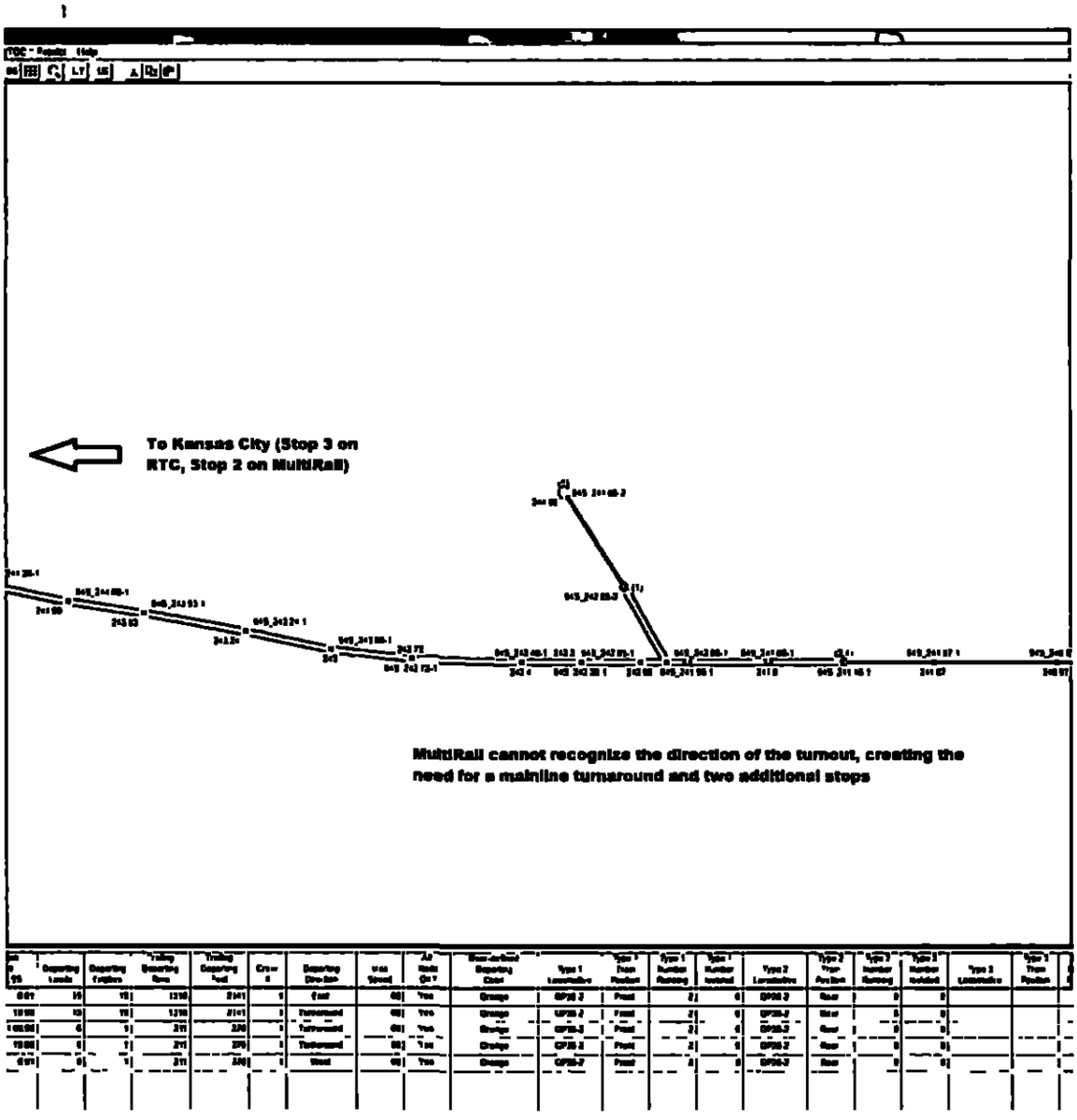
In Figure 14 above, train BF14-1 departs its origin headed east At the right edge of the illustration it is forced to make a turn move on the mainline (which it miraculously performs in three (3) minutes) in order to reach its destination on the siding. After dwelling on the siding for three (3) hours, it is forced to depart in an eastward direction and make an additional turn (again in three (3) minutes) because there is no crossover between its origin and destination The addition of crossovers is a routine adjustment during modeling that is quick, easy, and can improve the efficiency of many train movements greatly NS failed to make these adjustments where necessary in order to drive up train time and costs. NS's MultiRail output only shows a single stop for this train, a fact that demonstrates MultiRail's inability to account for switch

direction on the network.[225] However, NS chose to take the circuitous path in this case, and in many other cases as well, and as a result has substantially increased the cycle times, train miles and operating costs resulting from its RTC simulation.

A similar example of the inefficiencies included in NS's RTC model is shown in Figure 15 below

[225] See DuPont Rebuttal e-workpaper "BF14-1.JPG."

Figure 15



In Figure 15 above, train BN06-1 is forced to make an unnecessary double turn Once again, MultiRail schedules this train to make only a single stop based on its "optimized operating plan "[226] However, the turnout to reach the destination only allows travel in one direction. As a result, the train performs a mainline turn movement (in 10 minutes this time versus the 45 NS

[226] *See* NS Reply e-workpaper "BN06-1.JPG."

indicated it takes to turn a train) in order to reach its destination Since this train returns to its origin, it must perform a turn at the end of industry.[227] Surprisingly, this happens a great number of times in NS's Reply model Once train BN06 departs the branch line, it is forced to make another turn move on the mainline (again in 10 minutes time) to return to its origin. This example, along with the knowledge that DuPont's Operating Plan is able to deliver all of the traffic with half of the turn moves, clearly demonstrates the glaring inefficiency of NS's Reply RTC simulation

While NS claims that its Reply Operating Plan and RTC simulation are the least cost, most efficient means of handling its traffic, it is abundantly clear that is not the case. Each unnecessary additional turn move increases cycle times, locomotive hours, locomotive miles, car miles, car hours, crew hours, fuel consumption, and it places unnecessary burdens on network congestion and potentially slows down other trains that might encounter the turning train This system-wide error universally increases the costs associated with operating NS's DRR, creating a gross overstatement of the DRR's operating costs

Even more egregious is the fact that NS modeled 904 turns dwelling for less than the required 45 minutes for trains with no DP In effect, this results in 904 instances where NS's trains are driving "backwards" with all the locomotives on the rear of the train, achieving speeds of up to 60 MPH with no way to see what is in front of the train. This is an extremely dangerous and blatant violation of Federal laws and regulations![228]

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[227] This particular action was something NS criticized DuPont for in Opening, claiming that DuPont cannot make turn moves on branch lines because there is no way to move the locomotives to the head of the train. DuPont agrees and has corrected this issue in its Rebuttal Surprisingly, this happens a great number of times in NS's Reply model.

[228] *See* NS Reply e-workpaper "NS Reply RTC Train Inputs."

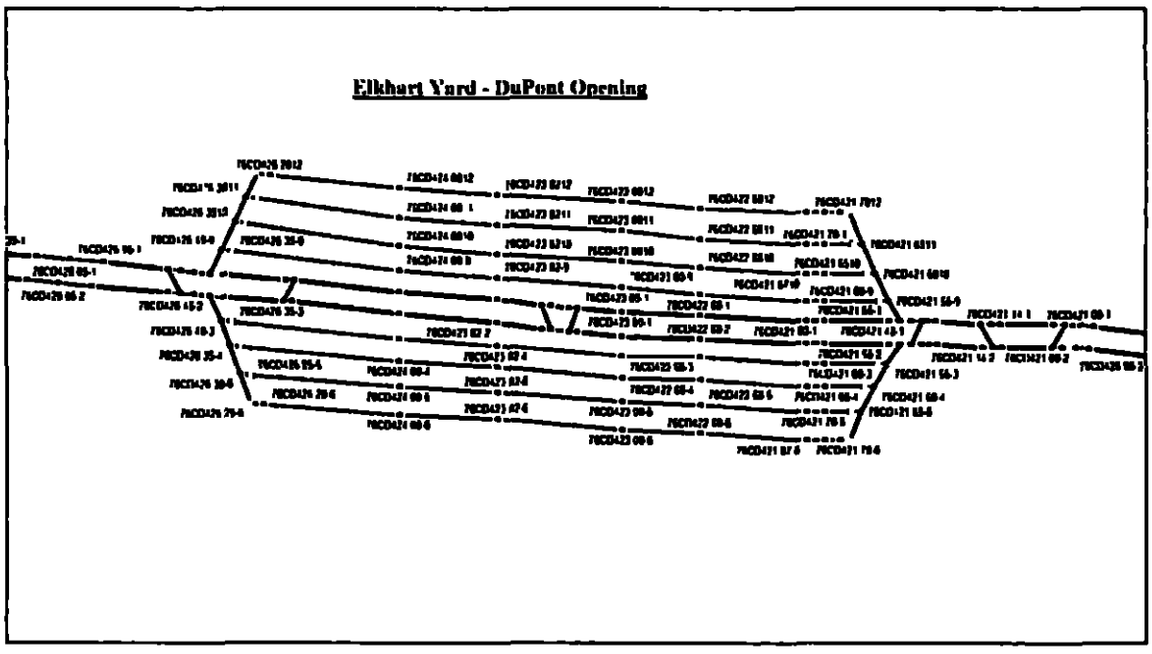
d. NS RTC Network Does Not Reflect Its Investment

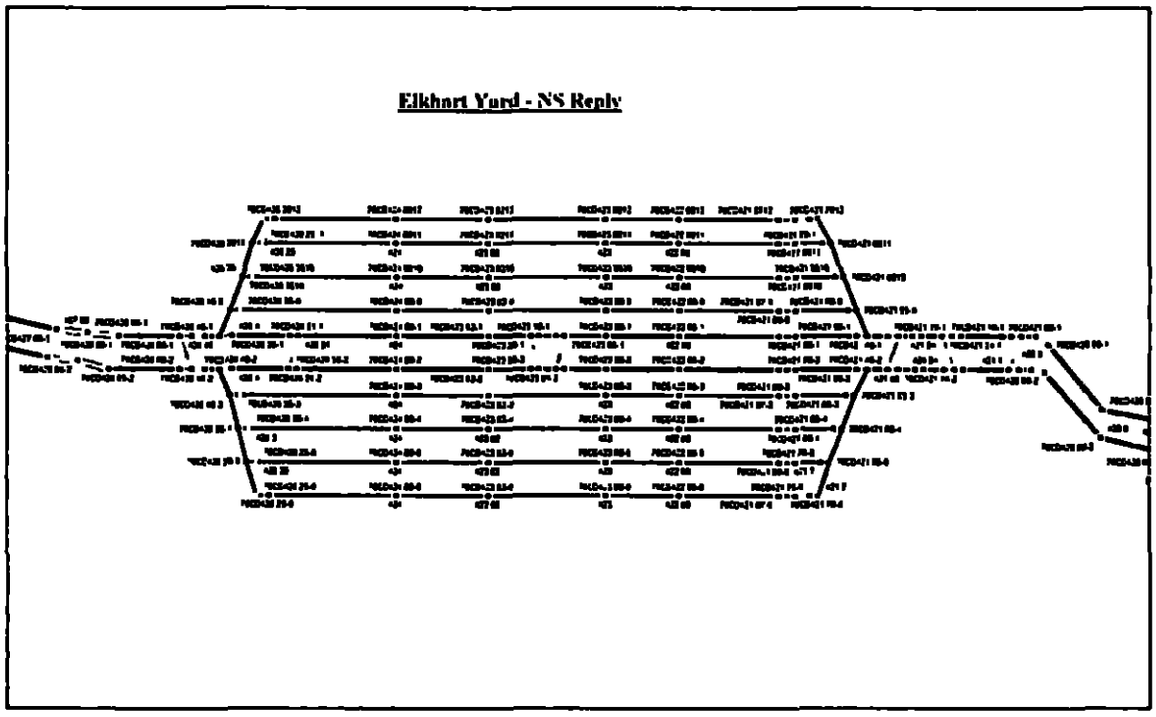
NS criticizes DuPont for its yard and network configuration stating that DuPont's yards were "woefully undersized to support the DRR's train operations," and also that NS was able to eliminate "smaller yards posited by DuPont where the functions contemplated at those locations can be accommodated by constructing one or more 'industrial support' tracks rather than an entire yard facility."[229]

NS's RTC model fails to support this criticism. NS's Reply RTC Network is largely identical to DuPont's Opening RTC Network Where NS claims DuPont's yards are insufficient to handle the operations of the DRR, NS's own RTC simulation demonstrates that those yards are indeed sufficient to handle the operations of the DRR For example, in its Reply, NS claims that Elkhart Yard will require 42.1 "train track" miles to handle the traffic instead of the 20 4 track miles DuPont included in Opening, an increase of 106% However, as illustrated below, NS's Reply RTC model version of Elkhart Yard is identical to DuPont's. This is the true in most cases.[230]

[229] *See* NS Reply, p. III-B-13

[230] *See* DuPont Rebuttal e-workpaper "NS Changes to the RTC v3.xlsx" and "RTC Yard Comparison xlsx."





NS also claims that it was able to eliminate multiple small yards proposed by DuPont because those yards are not required. However, NS's own RTC simulation fully utilizes those yards and demonstrates clearly that those yards are indeed required and cannot be replaced by a

simple "industrial support" track. DuPont encountered at least 15 yards that NS removed from its Reply investment but its RTC model continued to require[231]. For example see Whitaker Yard in Austell, GA in Figure 16 below.

Figure 16

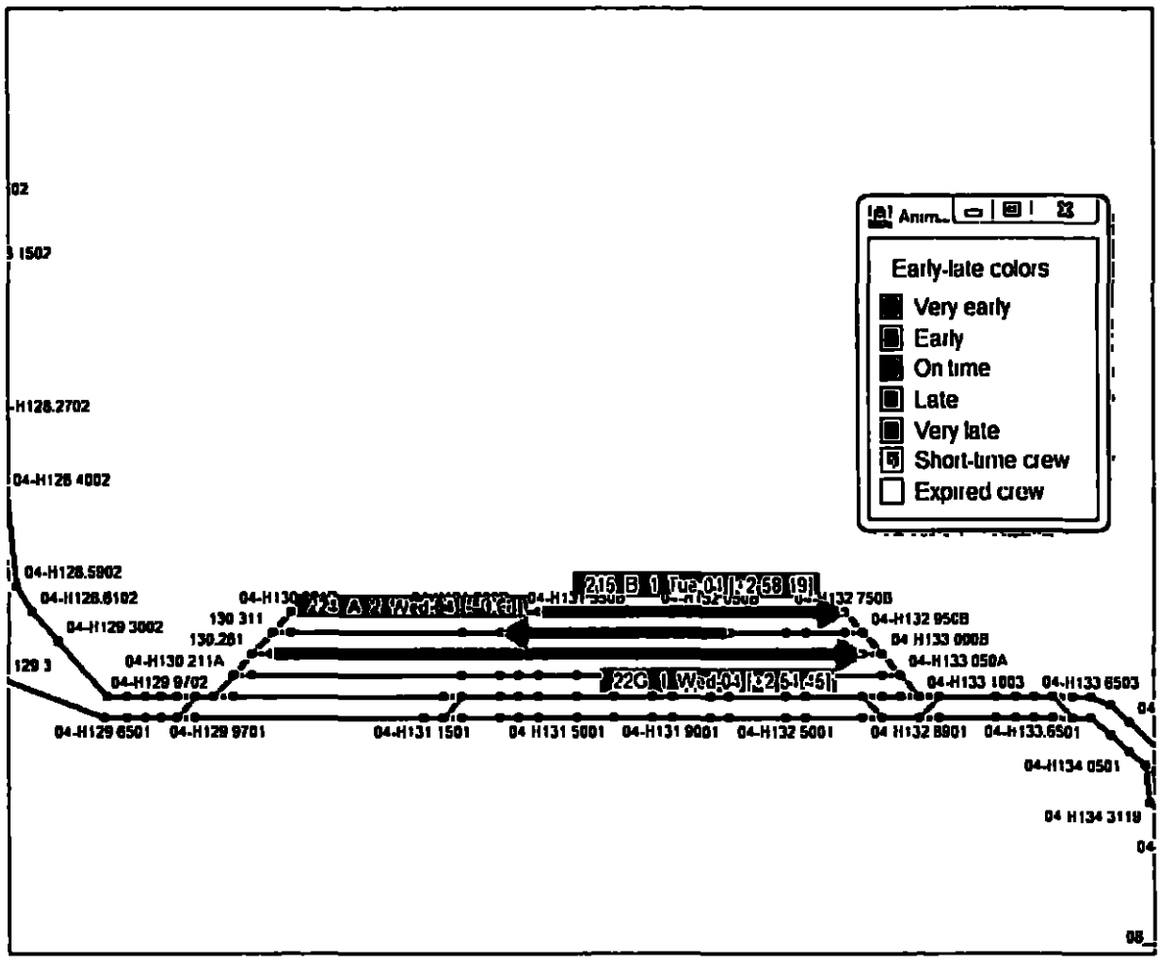


Figure 16 above shows a screen capture of Whitaker Yard in Austell, GA as utilized during NS's average week RTC simulation Shown above are trains {{[redacted]}} all requiring the use of the yard simultaneously. This example is but one single instance of many where multiple yard tracks are necessary to handle NS's Reply traffic and

[231] *See* DuPont e-workpaper "DRR Yard matrix Screenshots zip"

operating plan. DuPont's Opening and Rebuttal RTC simulations and investment calculations correctly accounted for these yards

5 DuPont Response to NS's Criticisms of DuPont's Operating Plan

Throughout NS's Reply, and especially in Part III-C, NS makes ongoing vituperative attacks on the veracity of DuPont's operating plan. DuPont responds to these attacks as they relate to yards, switching and yard activities, equipment requirements and crew requirements in this section

a. Yard and Facilities

i. Yards

As fully discussed in Part III-B, in Opening, DuPont provided yards for the DRR from two different perspectives.[232] First, DuPont provided "operating" yards where activities such as train staging, car inspection, yard switching (for originating and terminating traffic plus intermediate blocking of cars), crew changes, local train operations and locomotive repairs, servicing and fueling would take place. At many locations, traffic would also be interchanged with NS and other railroads

Second, additional "yards" were identified from the RTC Model These consist of tracks shown as yard track, and not siding track, in the RTC Model These tracks are present wherever trains are stopped for extended periods of time and would include interchange locations and some crew change locations outside the yards identified by the operating plan. These locations are not yards as defined by the operating plan but are locations that are classified as yard track in the RTC Model and, therefore, classified as yard track for construction purposes

[232] *See* DuPont Rebuttal Part III-B-3

Additional interchange locations were identified from a review of DRR carload data, and interchange track was added at those locations where the DRR did not already have a yard [233] Finally, automotive yards were added manually to the DRR yard list.

Following the procedures described above, DuPont included a total of one hundred twenty-three (123) yards, including six (6) major yards, thirty-five (35) yards where yard crews are employed, eight (8) automotive yards and seventy-four (74) other yards where other activities occur including interchanging traffic, crew changes and picking up/dropping off traffic [234] On numerous occasions, NS makes intentionally misleading statements implying that DuPont failed to provide yard crews or yard locomotives at all but 40 of its 123 proposed yards. Clearly 74 of the 123 yards included in DuPont's Opening evidence were not "operating" yards and there is no reason for yard crews or yard locomotives to be assigned at these tracks which are used primarily for interchange with another carrier, setting out or picking up cars or effecting crew changes.

(1) Yard Switching and Classification Tracks

NS comments extensively that DuPont failed to provide for yard switching and classification requirements for carload traffic moving on the DRR. NS is correct that DuPont did not provide fully for required yard switching activity In Opening, DuPont provided yard switching only for cars originating and terminating in yards and switching for local trains originating and terminating in yards DuPont unintentionally omitted classification switching services for other carload traffic moving through the operating yards which are being switched between trains or for block switching. This omission of classification switching services resulted in an understatement of classification tracks, yard crews and yard locomotives in DuPont's Opening evidence.

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[233] An example of this would be the interchange track added p Huntingburg, IN. *See* DuPont Opening e-workpaper "DRR Yard Matrix xlsx," tab "DRR YARDS," Line 35

[234] *See* DuPont Opening e-workpaper "DRR Yard Matrix errata xlsx,' tab "DRR YARDS."

To correct for this omission, DuPont examined NS's determination of yard classification tracks and yard track miles in Reply to determine if they are supported, reasonable and reliable DuPont finds NS's determination of classification tracks in yards to be none of the above for numerous reasons

(a) NS Yard Classification Car Counts are Unsupported

DuPont examined the classification car counts provided by NS in Reply and found them to be unsupported and unrealistic. The source for the classification counts by yard provided by NS allegedly is NS's MultiRail analysis.[235] However, in its Reply filing, NS's car counts are found in NS's workpaper and are unsupported as they are no more than hard coded numbers without a link to any analysis.[236] When requested to provide the source for these hard coded car counts, NS provided yet another spreadsheet[237] with more hard coded numbers that do not match the numbers provided in its Reply filing. Further, when NS did finally provide access to MultiRail on a limited basis, DuPont's analysts were able to review the classification car counts included in MultiRail and found that they did not match the car counts from either of the two previous sources provided by NS. [238] NS's multiple-choice classification car counts are clearly unsupported and unreliable.

For example, the workpaper provided by NS with its Reply evidence shows the hardcoded car count for {{[redacted]}} to equal {{[redacted]}} cars per day in 2010 [239] The NS workpaper provided on January 17, 2013 in response DuPont's request for support for the hard

[235] *See* NS Reply, p. III-C-176.
[236] *See* NS Reply e-workpaper "Reply Yards – Operations xlsx."
[237] *See* NS Reply e-workpaper "Yard_Volumes_DRR xlsx "
[238] *See* DuPont Rebuttal e-workpaper "Yard Volume 2010 pdf." This document was created by running the MultiRail Report function under Report Manager, Traffic Volume, "Yard Volume Summary" and printing to a pdf file
[239] *See* NS Reply e-workpaper "Reply Yards – Operations.xlsx", cell H15.

coded car counts shows the 2010 car count per day for {{[redacted]}} to equal {{[redacted]}} cars [240] When DuPont's experts executed the limited access version of the MulitRail program provided by NS on November 1, 2013, the resulting car count per day in 2010 for {{[redacted]}} equals {{[redacted]}}.[241] In summary, DuPont cannot verify NS's ever elusive car counts in yards or even know which car counts NS relied upon for its yard analysis, much less recreate those car counts.

Moreover, if NS's classification car counts are an output of its MultiRail analysis, they are not reliable as they do not correspond to the actual NS trains and are the result of NS's "made for litigation" train blocks and train assignments. As fully discussed in section C of Part III-C, NS' MultiRail operating plan and its outputs are fatally flawed and cannot be used

(b) NS Yard Classification Car Counts are Unrealistic

Even assuming NS's classification car counts were supported, which they are not, they are unrealistic because they are artificially inflated. In essence, NS inflates its car counts in order to "build a church for Easter Sunday." To accomplish this, NS determines its classification car counts for each hour of every day in the peak week for each yard using the MultiRail and SuperSim programs.[242] Then NS calculated the car count for each yard as equal to the average of the car counts that appear in the peak hour of all the days in the peak week. Stated differently, NS is taking the peak period requirements to a new high by considering not the average classification car counts in the peak period or the peak week, but in the peak *hour* of each day in

[240] *See* NS Reply e-workpaper "Yard_Volumes_DRR.xlsx", tab "Summary " cell M11. This NS workpaper was provided to DuPont's counsel on January 17, 2013 It should be noted that this spreadsheet contains a pivot table, which when refreshed the {{[redacted]}} car count per day changes to {{[redacted]}} as shown in tab "4," cell Q14.

[241] *See* DuPont Rebuttal e-workpaper "Yard Volume 2010 pdf," p.11 This document was created by running the MultiRail Report function under Report Manager, Traffic Volume, "Yard Volume Summary" and printing to a pdf file.

[242] NS provided DuPont limited access the MultiRail program in February more than two months after filing its Reply evidence and even then did not provide its SuperSim program, which is an integral component of the development of its classification car counts.

the peak week. NS labels this approach as a "static" capacity factor, in the hope that giving its procedure a name will justify its unreasonableness. Not satisfied that its classification car counts are sufficiently high, NS then increases these car counts by an effective 167 percent fluidity factor to yield the car counts it actually uses in determining the number of classification tracks required for each DRR yard.

An example of the impact of this procedure is the medium-size flat yard in {{[redacted]}}, where NS shows the 2010 classification car count to equal {{[redacted]}} cars per day and the 2018 classification car count to equal {{[redacted]}} cars per day The average car count for the peak *hour* in the peak week equals {{[redacted]}} cars per hour, a {{[redacted]}} percent increase over the peak year car count per day NS then increases this classification car count by dividing the "static" car count by its {{[redacted]}} percent fluidity factor to yield a classification car count of {{[redacted]}} cars per day, which it uses to determine the number of classification tracks in the {{[redacted]}} yard. The Board has rejected "Building a church for Easter Sunday" in the past as being unreasonable and should do so again in this proceeding.

In Reply, NS discusses yard sizing and categorizes yards into flat yards and hump yards, indicating that, when the cars requiring switching exceed 900 cars per day, it is more efficient to construct and operate a "hump" yard rather than a flat yard [243] Based on its unsupported car counts discussed above, NS determined in Reply that eight (8) hump yards should be included on the DRR system. As discussed in a later section, DuPont, based on the car counts per day developed from NS's car event data provided in discovery for the Base Year, determines that no hump yards are required on the DRR system.

[243] *See* NS Reply, p III-C-174

(c) NS Hump Yard Classification Track Miles are Significantly Overstated

NS provided a "Conceptual Layout for Hump Yard" in its workpapers,[244] which represents a reasonable layout for a hump yard. This configuration shows a typical hump yard "bowl" configuration for the classification tracks, which has the effect of minimizing the length of the classification tracks. However, in calculating the number of track feet for its eight hump yards, NS abandoned this design and instead calculated track feet using a formula that is suitable for a "trapezoid" flat yard layout.[245] In doing so, NS significantly overstates the classification track miles required in each of NS's hump yards.

NS's egregious error is best shown by example. In {{[redacted]}}, NS determined that 37 classification tracks are required to handle the {{[redacted]}} cars to be classified on a daily basis in 2010.[246] NS shows that these 37 tracks have a minimum length of 2,500 feet per track and a maximum length per track of 3,000 feet per track.[247] NS's use of a trapezoid configuration results in the longest of these 37 classification tracks equal to 8,000 feet, whereas using the "bowl" design results in the longest classification track equal to 3,100 feet. Using a trapezoid design requires 192,400 track feet (excluding connecting tracks) or 36.4 miles for 37 classification tracks. By comparison, the bowl design requires only 102,250 track feet (excluding connecting tracks) or 19.4 miles for 37 classification tracks.[248] NS's approach results in an additional 17.0 classification track miles, an 88 percent increase in the required track miles.

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[244] *See* NS Reply e-workpaper "Yard_Template_4_Hump.pdf."

[245] *See* NS Reply e-workpaper "DRR Yard List Reply.xlsx" tab "Conway."

[246] *See* the previous two sections for an explanation as to why NS's classification car counts are unsupported and unrealistic.

[247] *See* NS Reply e-workpaper "DRR Yard List Reply.xls," tab "Conway."

[248] *See* DuPont Rebuttal workpaper "formula-yard.xlsx", tab "design" for details of these calculations. Tab "trace" of this same spreadsheet shows NS's formula for calculating classification track feet for {{[redacted]}} yard and a trace of that formula to make it more understandable. NS's calculations of {{[redacted]}} yard track feet (including connecting tracks) is found in NS Reply e-workpaper "DRR Yard List Reply.xlsx" tab "{{[redacted]}}", cell C60.

Not only are NS's results unrealistic, they are misleading as NS has put into the record a realistic and reasonable conceptual layout for hump yards, but then abandons this layout in favor of an unrealistic and unreasonable trapezoid layout to calculate track miles. No efficient railroad would ever use a trapezoid design for a hump yard.

(2) Determination of DRR Yard Classification Tracks in Rebuttal

As shown above, NS's classification car counts are unsupported and unrealistic and therefore unusable for determining the proper number of classification tracks in each of DRR's yards. NS, however, did explain that it developed classification car counts based on cars originating, terminating and moving through yards that need to be classified, excluding "block swaps" or cars that move through yards without being classified.[249] In Rebuttal, DuPont has developed classification car counts from the car event data provided by NS in discovery in the same manner as NS described above, i.e., moving through yards requiring classification, excluding block swaps.[250] DuPont then added cars that originate and terminate at each yard based on data shown in the ATC carload data base The resulting car counts were then increased to reflect peak year traffic volumes using DuPont's traffic forecast These car counts are the basis for determining the number of classification tracks required in each of the DRR yards in rebuttal.[251] The loaded and empty cars included in DuPont's classification car counts correspond to NS's *actual* trains that move on the lines that comprise the DRR rather than the "made for litigation" trains in NS's MultiRail analysis.

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[249] *See* NS Reply e-workpaper "Terminal Capacity Requirement Tracking Process for Hump Classification Yards doc" pp 10-11 This document can be found in NS's III-C workpapers.

[250] To accomplish this, car event records associated with locations on the DRR were examined and all cars moving through yards that changed train symbols were included in the car counts, unless the block name remained the same. Specifically, if an entire block of cars changed train symbols, but did not change block name it was considered a "block swap." *See* DuPont Rebuttal workpaper "Plan Block Analysis v11.xlsx."

[251] *See* DuPont Rebuttal e-workpaper "DRR Yard Matrix v8 xlsx" for classification car counts and the number of classification tracks required in each yard

DuPont also used the count of cars to be classified developed from NS's car event data to determine the proper configuration of the DRR yards. As stated previously, NS assumes that it is most appropriate to construct and operate a hump yard when the cars per day to be classified exceed 900 cars.[252] The car counts developed by DuPont from NS's car event data, plus the cars originating and terminating in yards show that in the Base Year only one yard {{[redacted]}} has classification car counts that exceed 900 cars per day In the Base Year the classification car count per day equals {{[redacted]}} cars.[253]

NS's 900 car per day threshold is not a requirement but an approximate classification car count where efficiencies begin that permit a significant reduction in yard crew assignments when the capital funds are expended to construct a hump yard. Alternatively, a railroad can elect to add yard crew assignments when classification car count exceeds this threshold rather than to expend the capital resources to construct a hump yard

Yard crew assignments are developed using Base Year traffic volumes and classification car counts. The resulting yard crew expense is increased throughout the life of the DCF model to account for the growth in traffic volumes over the DCF period In effect the yard crew personnel are grown throughout the life of the model to reflect increases in traffic volume. If the DRR were to construct a hump yard when justified by increased volume in later years, the associated crew expense would not reflect the savings resulting in the greater efficiency afforded by use of hump yard operations and thus operating expenses would be overstated.

In summary, the classification car counts based on NS's car event data associated with the actual trains moving on the DRR system do not warrant the construction of hump yards on the DRR in the Base Year. While these car count grow to levels that may make it more efficient

[252] *See* NS Reply, p. III-C-174.
[253] *See* DuPont Rebuttal e-workpaper "DRR Yard Matrix Rebuttal v8 xlsx," col. 21 + col. 22.

to utilize hump yards in later years at some locations, adding the associated dollars to the DRR capital investment, without reducing the yard crew assignments at these yards to reflect operational savings, would result in a double count of expenditures In Rebuttal, DuPont provides adequate yard crews to handle classification of cars in all yards on the DRR without the use of hump yards and effectively grows these crews to provide classification service in yards over the life of the DCF model

ii. Intermodal Facilities

As discussed in Part III-B, NS included thirty-one (31) intermodal facilities.[254] DuPont agrees that the DRR needs intermodal facilities but has included only twenty-nine (29) of the facilities identified by NS DuPont has excluded the facility in Elizabeth, NJ because NS stated that this facility is private and the DRR did not need to construct it.[255] DuPont has excluded the facility in Morrisville, PA because this facility is located on a Conrail Shared Asset line that the DRR is not constructing. DuPont has accepted NS's track miles for the intermodal facilities it has included.

iii. Automotive Facilites

As explained in Part III-B, in Opening, DuPont identified and included eight (8) automotive yards.[256] In Reply, NS also included eight (8) automotive yards, seven (7) of which are the same as those included by DuPont in Opening. The eighth automotive yard included by NS is in Chicago rather the Avon Lake, Ohio auto yard included by DuPont In Rebuttal, DuPont accepts NS's Chicago auto yard and eliminates the Avon Lake yard DuPont has also accepted NS's track miles at each of these facilities.

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[254] *See* NS Reply, pp. III-C-195- 197 and e-workpaper "DRR Yard List Reply xlsx," tab "IM Yards "
[255] *Id.* p. III-C-196, note 307
[256] *See* DuPont Opening e-workpaper "DRR Yard Matrix errata xlsx," tab "DRR YARDS."

iv. Transload Facilities

In Reply, NS included fourteen (14) transload (bulk transfer) facilities.[257] DuPont agrees that the DRR needs to include transload facilities but has included only eleven (11) of the facilities identified by NS on Rebuttal As discussed in Part III-B, based on a review of the addresses for these facilities provided by NS in discovery, DuPont determined that three (3) of the facilities identified by NS are not located on rail lines that the DRR is constructing and are therefore excluded from the DRR in Rebuttal DuPont has accepted NS's track miles for the eleven (11) transload facilities that it has included.

b. Yard Activity

i. Locomotive Inspections and Fueling

NS argues that the four (4) locomotive shops provided by DuPont in Opening are insufficient to perform the necessary inspections and repairs required by DRR locomotives and therefore increases the number of locomotive shops on the DRR from four (4) to ten (10) shops.[258] This is largely based on NS's flawed operating plan developed from MultiRail and its gross overstatement of trains. In Opening, DuPont acquired 664 locomotives and provides four (4) shops for inspecting and repairing these locomotives, or one shop for every 166 locomotives. In Rebuttal, DuPont has increased the number of locomotives from 664 to 913 and the number of locomotive shops from four (4) to six (6) or one shop for every 152 locomotives The two (2) addition shops are located at Atlanta, GA and Bellevue, OH.

In Opening, DuPont provided fixed fueling platforms in each of the six (6) major yards, and provided direct-to-locomotive ("DTL") fueling service at each of the 36 locations where locomotive service tracks are located In Reply NS insists the DRR should have fixed fueling

[257] *See* NS Reply, pp III-C-200-202 and e-workpaper "DRR Yard List Reply.xlsx," tab "TBT Yards."

[258] It should be noted that there are only a total of eight (8) locomotive shops on NS's entire system *See* www progressiverailroading com/norfolk_southern NS's proposal for the DRR to have ten (10) locomotive shops is clearly unnecessary and unrealistic.

platforms at each location that NS has a fixed fueling location DuPont rejects the notion that it is required to have fixed fueling platforms at the same locations as NS actually has fueling platforms and continues to have a fixed fueling platform at each of the six (6) major yards and DTL fueling at the additional 36 locations

ii. Railcar inspections

The location and need for car inspectors is based on the number of trains to be inspected at any given location In Opening, DuPont provided for railcar inspections at 15 of its yards, compared with the 29 locations provided for by NS In Rebuttal, DuPont accepts NS's assumption that all originating trains with greater than 25 cars must be inspected DuPont adds to those trains, local trains and road trains moving more than 750 miles Based on these criteria, and the revised number of trains moving on the DRR in Rebuttal, DuPont provides inspectors at all locations where more than two (2) trains originate daily, yielding 37 locations. In those locations where only one or two trains originate daily, DuPont continues to rely on train crews to provide the inspection service.

As fully discussed in Part III-D-3, *infra*, DuPont includes 377 car foremen and inspectors in Rebuttal. One car foreman is included in each car inspection team This is an increase from the 269 car inspectors provided in Opening. The car foremen perform the same supervisory duties as the 26 car managers provided by NS in Reply. However, unlike NS's car managers who perform *only* supervisory duties, the car foremen actually work along-side the car inspectors and perform car inspection duties

c. Train Sizes and Equipment

i. Train Size

In Opening, DuPont based the maximum length of DRR trains on the longest train (by train symbol) shown in the historical train data provided by NS in discovery. NS accepted this

approach in Reply [259] In Rebuttal, DuPont continues to determine maximum train length based on the historical data provided in discovery

ii. Locomotives

In Opening, DuPont determined that the DRR requires a total of 662 locomotives in the Base Year In Reply, NS claims the DRR requires 1,441 locomotives in the Base Year. The difference in the number of units required is based on numerous issues, including, the number of trains moving on the DRR system, inputs to the RTC model that effect transit time, calculation of the peaking factor and spare margin, dwell time in yards and repositioning locomotives and the number of yard switch assignments As discussed previously, on Rebuttal DuPont has accepted those criticisms NS made of DuPont's operating plan that have merit and have added 9,971 trains in the Base Year These changes result in an in increase in the number of locomotives required in the Base Year. The difference in the number of locomotive units is shown in Table III-C-3 below.

[259] *See* NS Reply, p III-C-209

Table III-C-3
Base Year Locomotive Unit Requirements

Unit Type	DuPont Opening	NS Reply	DuPont Rebuttal
(1)	(2)	(3)	(4)
ES44AC	481	977	639
GP38	101	291	180
SW1500	80	--	94
SD40-2	--	173	--
Total Units	662	1,441	913

Source "DRR Operating Statistics_Errata.xls," "DRR Operating Statistics Reply xlsx," and "DRR Operating Statistics_Rebuttal xlsx"

(1) Road Locomotives

NS asserts that the DRR should purchase and service a fleet similar in size to the one NS operates today.[260] This assertion is incorrect because it is wholly unsupported by NS's evidence and it ignores the fundamental rules of stand-alone rate cases. In fact, NS acknowledges that DuPont will "employ higher-horsepower AC units than NS typically runs,"[261] and it is illustrated clearly in NS's own records that the ES44AC locomotives are more reliable and more efficient than the locomotives predominantly owned by NS today.[262] Furthermore, the DRR is the least cost, most efficient railroad designed from the ground up to function properly with the fewest number of locomotives that is reasonable. Therefore, it is clear that the DRR should not, under any circumstances, expect to have a fleet comparable in size to what NS uses today

The difference in count of road locomotives among the parties is due to 1) the number of trains on the system; 2) cycle times produced by the RTC model; 3) NS's inclusion of yard dwell

[260] *See* NS Reply, p III-D-5.
[261] *Id.*
[262] *See* DuPont Rebuttal e-workpaper "Loco Utilization_Rebuttal.xlsx," tab "Bad Order by Type," which contains NS locomotive utilization data provided in discovery and a tab summarizing the data by loco type

time and rebalance locomotives; 4) calculation of the peaking factor; and 5) calculation of the locomotive spare margin.

The differences related to the number of trains moving on the DRR system and the parties' RTC model have been previously addressed in other sections of Part III-C and will not be repeated here, except to note that NS's road and local train locomotive counts of 1,268 locomotives[263] in 2009 must be rejected because NS has significantly overstated the number of trains on the DRR system and because its MultiRail based operating plan has been shown to be unsupported and unrealistic. Each of the remaining differences in the determination of road locomotives is discussed below.

(a) Locomotive Dwell in Yards

NS asserts that the DRR would require 766 locomotives to handle its Base Year general freight and intermodal traffic volume.[264] This number is the end result of an analysis of locomotive cycle time from its RTC analysis and a study of locomotive dwell time in yards and associated rebalancing time that is fundamentally flawed, fraught with mathematical errors, and completely unsupported by NS's Reply evidence.

First, NS's dwell time analysis is flawed as NS explains that it has "capped" the dwell time in the analysis at 24 hours because "a locomotive unutilized for more than 24 hours is one too many."[265] Examination of NS's study demonstrates that 17 percent of the locomotive dwell observations had to be artificially capped as being excessive under NS's questionable definition of excessive. DuPont is under no obligation to adhere to NS's opinion of inefficiency, and

[263] 977 ES44AC locomotives plus 291 GP38 locomotives.
[264] *See* NS Reply e-workpaper "Locomotive Fleet Sizing for NonUnit NonLocal Trains.xlsx," worksheet "Summary."
[265] *See* NS Reply e-workpaper "Locomotive Fleet Sizing for NonUnit NonLocal Trains.xlsx," worksheet "Documentation."

believes that the validity of any "made for litigation study" that produces locomotive yard dwell times in excess of 24 hours (or even far fewer hours) must be questioned

Second, NS developed these locomotive yard dwell times using a combination of MultiRail departure times and frequency, and RTC cycle times Given the innumerable fundamental differences between DuPont's Opening SARR and NS's Reply SARR, this means that any number derived from NS's analysis has absolutely no correlation to DuPont's Opening SARR, and therefore no bearing on DuPont's Rebuttal SARR. At best, even if the analysis was done correctly and supported properly, the end result would only represent the locomotive requirements of NS's Reply SARR. As stated above, NS's Reply SARR utilizes a different operating plan, different trains, and different blocks than what DuPont used for its Opening and Rebuttal SARRs. Regardless of that fact, because NS's MultiRail and RTC simulations are both fatally flawed,[266] NS's locomotive fleet calculations, which are based on the output of those models, are meaningless

Third, NS's most glaring mathematical error can be found on the Summary page of the analysis, where NS uses a hard-coded divisor of 24 "analysis days" in the summary This particular hard coded number is used to calculate all of NS's purported locomotive requirements Upon review, DuPont discovered that the "analysis days" included in NS's calculations on the "TerminalPerspective" tab begin on October 6, 2012, and end on November 3, 2012. a study period of 29 days.[267] When this single error in the dwell study is corrected, the total number of general freight and intermodal road locomotives drops from 766 locomotives to 632, a decrease of 18%!

[266] *See* discussion of MultiRail *supra*

[267] Based on earliest Arrival Time of incoming train and latest Departure time of outgoing train for all records with "Flag Analysis Period" = 1.

Fourth, NS makes the assumption that any locomotives that are being repositioned will travel at a static speed of 20 MPH. This includes, for example, a pair of locomotives repositioning from {{ }} In reality the majority of track between these two points has a speed limit of over 50 MPH. Handicapping light locomotives at 20 MPH over a segment nearly {{ }} miles long will drastically overstate repositioning time. DuPont's Rebuttal RTC model shows all trains system wide achieving an average speed of 24.8 MPH, including dwell time! It is unreasonable to assume that light locomotives with no operational stops would average a lower speed than an average peak period train including its stops for inspection, fueling, pickup, set out, etc.

Finally, and of great significance, NS fails to support its evidence with anything more than a brief description of its methodology. DuPont was not able to link the hard coded numbers used within this study to any of NS's supporting evidence DuPont does not have the ability to reproduce the same reports that NS supplied as outputs from MultiRail [268] While DuPont can verify the results of NS's Reply RTC model, it cannot make the link between the RTC output and the data contained in the Locomotive Fleet Sizing spreadsheet DuPont is aware that NS modeled a 10 day period in its RTC simulation, yet there are 30 days of train cycle time data in the Locomotive Fleet Sizing spreadsheet that were allegedly generated by the RTC model [269] This discrepancy is just one glaring example of the disconnect DuPont has encountered in the NS Reply evidence DuPont experts made multiple attempts to reproduce the data presented in NS's report, but were unable to do so. NS's failure to provide complete and clear support for its evidence effectively invalidates this analysis. For this reason alone, NS's Locomotive fleet sizing model must be found to be unsupported and cannot be used in this proceeding

[268] *See* discussion of MultiRail *supra*

[269] See NS Reply WP "Locomotive Fleet Sizing for NonUnit Trains xlsx," tab "Terminal Perspective," shows arrival dates beginning October 5 and departure dates ending Nov 3

In Rebuttal, DuPont recognizes the appropriateness of including yard dwell time when calculating locomotive requirements Based the extensive railroad operating experience of DuPont expert McDonald, DuPont adds three hours of locomotive dwell time in yards to all general freight and non-premium intermodal trains in the Base Year when calculating locomotive requirements This results in an increase of 235 road locomotives being acquired by the DRR in the Base Year.

(b) Peaking Factor

In Opening, DuPont develops a locomotive peaking factor consistent with the methodology affirmed in *AEPCO*, i.e the peaking factor is determined by "dividing the number of train starts in the peak week of the peak traffic year by the number of train starts in the peak traffic year.[270]

In Reply NS argues that DuPont should have used Base Year statistics to calculate the peaking factor rather than peak year statistics as called for in *AEPCO*.[271] NS argues that DuPont's peaking factor based on the peak year statistics somehow "smooths out" the seasonality of train flows that exist in the Base Year and thereby understates the peaking factor required in the Base Year to cover the number of the locomotives required to handle in the peak period of the Base Year

NS's argument is flawed for several reasons First, consistent with real-world operations, DuPont's growth factors are applied such that trains are increased in size until the maximum train size is reached, in order to use excess capacity on the railroad. If additional growth is still forecast, then additional trains are added to the system on a random basis This process does not

[270] *See AEPCO*, slip op. p. 32.
[271] *See* NS Reply, pp III-D-14-15

affect the seasonality of the DRR's traffic, but does use excess capacity available in the system, which is what any efficient railroad would strive to accomplish.

Second, NS's proposed method, i e , to use an inflated peaking factor, would cause the DRR to have too many locomotives on hand in the peak year of the model, thus causing unused capacity and excessive costs. This is not what an efficient carrier would do.

Third, the locomotive and railcar requirements are determined using transit times from the RTC simulation based on traffic moving in the peak week of the peak year, i.e., arguably when the DRR system is most congested, throughout the life of the entire 10 year DCF model In doing so, the resulting locomotive and railcar requirements are already sized to accommodate the worst conditions on the railroad Adding a peaking factor, especially an artificially inflated peaking factor as suggested by NS, unnecessarily increases the locomotive and railcar requirements of the DRR system.

Finally, as stated by the Class I Railroads in their comments to the Board in Ex Parte No. 665, *Rail Transportation of Grain*, related to investment in railcars for moving grain to meet peak demand periods:

> Simply buying more grain cars is not the answer to the occasional car supply shortage problem The cost of owning a grain car - the purchase price alone of a new jumbo grain hopper is many tens of thousands of dollars – is a significant sunk cost that must be recovered over the productive life of the cars, including peak and non-peak periods For the same reason that you "don't build a church for Easter Sunday," it is not economical to incur the costs of providing high levels of stand-by equipment to meet unpredictable and temporary surges in traffic, only to have that same equipment sit idle for much of the time.[272]

In Rebuttal, DuPont continues to apply a peaking factor developed in accordance with the Board's decision in *AEPCO*

[272] *See* Comments of the Association of American Railroads, Ex Parte No. 665, *Rail Transportation of Grain*, dated October 30, 2006, p11, a copy of which is included as DuPont Rebuttal e-workpaper "AAR EP 665 comments.pdf."

(c) Spare Margin

In Opening, DuPont used a locomotive spare margin of {[redacted]} percent and {[redacted]} for ES44 and GP38 locomotives, respectively, developed from information provided by NS in discovery In Reply NS accepts these percentages as the out of service time, but adjusts them upward slightly to reflect the ratio that must be applied to time a locomotive is available for service to reflect total time in the year. The result is spare margins of {[redacted]} percent and {[redacted]} percent for ES44 and GP38 locomotives, respectively In Rebuttal DuPont accepts this adjustment to the locomotive spare margin and applies it when determining the DRR locomotive requirements.

(2) Local Trains

In Opening, DuPont powered local trains primarily using GP38 locomotives in DP service when more than one locomotive was required. In Reply NS accepted use of GP38 locomotive for local trains, but rejected used of the DP power configuration. In Rebuttal, DuPont agrees that DP power should not be used on local trains.

NS also points out that, while DuPont stated in Opening that many local trains required more than one locomotive unit, when calculating the required number of units, DuPont included only one unit on all local trains. This inadvertent error has been corrected in DuPont's rebuttal calculations.

(3) Helper Locomotives

In Opening, DuPont provided helper service to assist trains at five locations on the DRR. In Reply, NS argues that DuPont failed to include helper service at five additional locations identified by NS in discovery as requiring helper service NS argues further that, as DuPont relies on actual NS trains and actual NS train sizes in its operating plan, it must also include helper service in these five additional locations. Finally, NS claims that the general merchandise

trains and unit coal trains which DuPont reroutes from the Heartland corridor route to the DRR line between Chillicothe, OH and PD Junction, via Dickinson, WV, would require helper service between Dickinson and Elmore, WV. NS includes these five additional helper districts and the associated locomotives and crews

NS's arguments regarding the additional helper districts are meritless. DuPont is fully aware of the need for increased power for trains moving in each of these districts. In Opening, DuPont determined that, at the five locations NS identified as requiring additional helper service, it was operationally preferable to increase the locomotive power on trains moving through these areas for entire crew districts, rather than to add helper service for a portion of the crew district.[273] Therefore helper service is not required As demonstrated by the fact that no trains stall in the RTC simulation in any of these locations, all DRR trains have sufficient power to navigate these locations.

In Rebuttal, DuPont continues to provide helper service in the five locations where helper service is provided in its Opening evidence

(4) Switch Locomotives

In Opening, DuPont provided 80 switch locomotives on the DRR As discussed earlier in Part III-C, DuPont has adjusted classification switching services provided on the DRR in Rebuttal This adjustment results in an increase in yard crew assignments in many yards and thereby an increase in the number of yard locomotives In Rebuttal, the DRR has a total of 94 yard locomotives.[274]

[273] *See* DuPont Rebuttal e-workpaper "DRR7 TRAIN " This workpaper shows the locomotive configuration on DRR trains and the RTC simulation demonstrates that no trains stalled en route due to a lack of power

[274] NS also disputes DuPont's use of SW1500 switch locomotives for DRR yard switching service and instead uses SD40-2 road locomotives for yard switching service. This issue is fully addressed in Part III-D

d. Crew Districts and Requirements

i. Road Crews

In Opening, DuPont provided for 28 road crew districts. In Reply, NS accepts DuPont's road crew districts The difference in the number of road crews in the parties' evidence is due to the number of trains in the parties' evidence and NS's artificially inflated road crew requirements by unnecessarily rebalancing DRR road crews The number of road crews required by the DRR are fully addressed in Part III-D-3.

ii. Yard Crews

In Opening, DuPont provided 496 yard crew personnel on the DRR. As discussed earlier in Part III-C, DuPont has adjusted classification switching services provided on the DRR in Rebuttal This adjustment results in an increase in yard crew assignments in many yards and thereby an increase in the number of yard crew personnel In Rebuttal, the DRR has a total of 645 yard personnel. The development of yard crew personnel is fully addressed in Part III-D-3.

iii. Helper Crews

In Opening, DuPont provided for a total of 62 helper crew personnel to assist trains moving in five (5) helper districts. As discussed above with regard to helper locomotives, NS incorrectly argues that DuPont failed to provide helper service in five (5) additional helper districts In Rebuttal, DuPont retains the same helper districts as used in Opening and the same number of helper crews.

PART III-D

PUBLIC VERSION

Table of Contents

III. STAND-ALONE COST III-D-1

D OPERATING EXPENSES III-D-1

1 Locomotives..... III-D-3

a Acquisition III-D-3

i. Locomotive Types III-D-3

ii Locomotive Lease Costs III-D-5

iii. Number of Locomotives..... III-D-9

b Locomotive Maintenance Expense..... III-D-10

c. Locomotive Servicing (Fuel, Sand and Lubrication)..... III-D-11

i. Fuel Cost III-D-11

ii. Fuel Consumption III-D-12

iii. Sand and Lubrication III-D-13

2. Railcars III-D-14

a. Leasing..... III-D-14

i. RTC Transit Times III-D-15

ii Dwell Time in Yards III-D-15

iii Intermodal Car Costs..... III-D-16

b Railcar Maintenance III-D-18

c Private Car Allowances..... III-D-19

3. Operating Personnel..... III-D-19

a Number of T&E Personnel III-D-19

i. In Rebuttal DuPont Includes All Required Trains on the DRR System III-D-20

ii. Directional Imbalances On the DRR..... III-D-20

iii. DRR Re-Crew Rate..... III-D-23

iv DuPont Includes All Necessary Helper Service..... III-D-24

v. Yard Crews..... III-D-24

b. T&E Personnel Compensation..... III-D-26

i. T&E Wages III-D-26

ii Fringe Benefits..... III-D-27

iii. Hotel and Taxi Expense III-D-29

c Non-Train Operating Personnel..... III-D-30

i. Transportation Department III-D-31

(1) Operations Planning and Joint Facilities III-D-31

PUBLIC VERSION

(2) Operations Control III-D-32
(3) Dispatch III-D-33
(4) Crew Management and Crew Calling III-D-34
(5) Terminal Operations III-D-35
(6) Locomotive Operations III-D-36
(7) Intermodal and Automotive Terminals III-D-37
ii. Mechanical Department III-D-38
(1) EOTD Manager III-D-38
(2) Managers – Maintenance Planning III-D-39
(3) Car Inspection III-D-39
iii. Operations Support Department III-D-42
(1) Operations Service and Support (OSS) III-D-42
(2) Service Design and Measurement III-D-43
(3) Equipment Planning and Distribution III-D-44
(4) Damage Prevention and Freight Claims III-D-44
d. Non-Train Operating Personnel Compensation III-D-45
i. Vice Presidents III-D-45
ii. Fringe Benefits III-D-45
e. Materials, Supplies and Equipment III-D-46
4. General and Administrative III-D-46
a Staffing Requirements III-D-47
i. Executive Department III-D-48
ii Board of Directors III-D-49
iii Marketing & Customer Service Department III-D-49
iv Finance & Accounting Department III-D-49
v. Law and Administration Department III-D-50
vi. Information Technology III-D-50
b. Compensation III-D-51
c. Material, Supplies, and Equipment III-D-51
d Other III-D-51
i IT Systems III-D-51
e. Other Out-Sourced Functions III-D-52
f. Start-up and Training Costs III-D-53
g Bad Debt III-D-53

PUBLIC VERSION

5. Maintenance-of-Way III-D-53
6 Leased Facilities III-D-56
a. Misapplied Fees III-D-57
i. Car Counts III-D-57
ii. Terminal Railroad of St. Louis III-D-58
iii. Conrail Shared Asset Areas III-D-59
iv. Belt Railway Company of Chicago III-D-60
b. Improperly Routed Traffic III-D-61
c. Construction of Chicago Area Track III-D-62
d. AMTRAK Segments III-D-62
e. Mathematical Error III-D-63
7 Loss and Damage III-D-63
8 Insurance III-D-63
9. Ad Valorem Tax III-D-65
10. Other III-D-68
a Intermodal Lift and Ramp Cost III-D-68
i. Clerical Staff and Utilities III-D-69
ii. Elizabeth, New Jersey III-D-69
iii. Chicago Cross-town Drays III-D-70
iv. Additional Personnel III-D-70
b Automotive Handling Cost III-D-70
c. Costs Incurred by Residual NS for New DRR-NS Interchanges III-D-71
d Calculation of Annual Operating Expense III-D-72

III. STAND-ALONE COST

D. OPERATING EXPENSES

NS begins its discussion of the DRR's annual operating expenses by repeating its attacks on the DRR's operating plan. In Part III-C of its Rebuttal, DuPont has responded to NS's unwarranted criticisms of its operating plan and made corrections where necessary to address a few valid criticisms In Part III-C, DuPont also demonstrated that NS's operating plan for the DRR, which is based on MultiRail and made for litigation assumptions, bears no relationship to reality NS's operating plan assumes that the cars on the DRR's merchandise trains are completely divorced from the NS trains that actually carried the DRR's traffic over the replicated lines during the base year, and move in hypothetical blocks in new, hypothetical trains, which are demonstrated to be less efficient and more costly than NS's actual operations.

A comparison of the parties' calculations of the DRR's annual operating expenses for its first year of operations is shown in Rebuttal Table III-D-1 below.

Rebuttal Table III-D-1
DuPont Opening, NS Reply and
DuPont Rebuttal DRR 2009 Operating Expenses
($ Millions)

	Item	DuPont Opening	NS Reply	DuPont Rebuttal
	(1)	(2)	(3)	(4)
1	Locomotive Lease	$58.3	$145.3	80 6
2	Locomotive Maintenance	124.0	151 1	156 4
3.	Locomotive Operations	394 1	458.2	435.8
4	Railcar Lease	307.5	420.1	356 2
5	Materials & Supply Operating	3 8	11.1	4 5
6	Train and Engine Personnel	314 0	586 0	338 8
7	Operating Managers	53.7	128 5	63 6
8.	General & Administrative	57 6	172 1	77.4
9	Loss & Damage	14 1	12 8	12 8
10	Ad Valorem Tax	56 7	84.2	56 9
11.	Maintenance-of-Way	156 6	377.1	156.9
12	Trackage Rights	42 3	74 0	58 9
13.	Intermodal Lift and Ramp	90.8	110 4	108 0
14.	Insurance	35 1	64 6	39 9
15.	Startup and Training	112 4	207 9	121.6
16.	Motor Vehicles	6 9	6 9	6.9
17.	Total	$1,828 0	$3,015 6	2,075.1

Source. "DRR Operating Expense_Errata.xls," DRR Operating Expense Reply.xlsx" and DRR Operating Expense_Rebuttal xlsx "

Of the $940.5 million total remaining differences in the parties' calculations of annual operating expense the bulk ($755 6 million) is accounted for by five categories: Locomotive Lease, Railcar Lease Train & Engine ('T&E') Personnel, Operating Managers, General & Administrative, Maintenance of Way. Most of the difference in these items results from NS's more complex operating plan for the DRR, which involves more locomotives, more crews, more yards, and more switching activity than were provided in DuPont's operating plan. As discussed in Part III-C-1 above, NS's operating plan must be rejected by the Board because it does not meet customer service requirements and because it does not provide an appropriate basis for determining the DRR's annual operating expenses. Accordingly, NS's proposed new yards and

yard switching operations (which drive most of NS's proposed increase in operating and other personnel) must also be rejected.

In the sections below DRR responds to NS's Reply Evidence as to each category of expense shown in Rebuttal Table III-D-1.

1. Locomotives

a. Acquisition

In Opening, DuPont proposes to lease locomotives for the DRR and includes 2009 locomotive lease expense of $58.3 million. In Reply, NS accepts the acquisition of locomotives via leases for the DRR, and calculates locomotive lease expense of $145.3 million. The difference in the locomotive lease expense results from differences in the types of locomotive used by the DRR, the annual locomotive lease expense per locomotive unit and the quantity of units to be acquired. Each of these areas of differences is discussed below.

i. Locomotive Types

In Opening, DuPont proposes use of GE ES44AC locomotives for road service and helper service, GP38 locomotives for local train service and EMD SW1500 locomotives for switching service. NS accepts use of the ES44AC locomotives for road and helper service and use of GP38 locomotives for local train service. NS objects to DuPont's selection of SW1500 locomotives for yard switching service, proposing instead to use of SD40-2 locomotives for switching service. NS objects to the use of SW1500 switch locomotives claiming that these locomotives have not been manufactured since 1974 and that a sufficient number of these locomotives are no longer available in the market place.[1] NS also claims that the SW1500 is not powerful enough to perform the switching services required by the DRR

[1] *See* NS Reply, pp III-C-216-219.

NS's claims are misleading and ill-founded NS is correct that manufacturing of the SW1500 locomotive ended in 1974, however, as stated in its own evidence, 64 percent of the SW1500 locomotives that were manufactured are in active service today.[2] Further, according to its 2009 locomotive roster, NS had {{[redacted]}} SW1500 units in active service. Moreover, the June 2008 issue of *Railway Age*, SW1500 locomotives provides lease current lease rates for SW1500 units, indicating that they are available. Moreover, NS's assumption that sufficient quantities SW1500 switch locomotives are not available is a barrier to entry.[3]

NS's claim that the SW1500 locomotive is somehow not powerful enough to perform switching service is ludicrous The SW1500 locomotive is designed specifically for switch service. The "U.S. EPA defines a switch locomotive as having between 1,006 and 2,300 horsepower "[4] Further, a switch locomotive is, by design, "a small railroad locomotive intended not for moving trains over long distances, but rather for assembling trains ready for a road locomotive to take over .and generally moving cars around – a process known as switching .they do this in classification yards....the typical switcher is optimized for the job, being relatively low powered but with high tractive effort for getting heavy cars rolling quickly... Switchers are geared to produce high torque, but are restricted to low top speeds and have small diameter driving wheels "[5] "Switchers primarily have four axles to allow for a tight-turning radius within railyards "[6]

The SW1500, a small four axle locomotive with 1500 horsepower was specifically designed and manufactured for providing switching services in classification yards. In contrast the SD40-2 locomotive NS proposed to use for switching service is a six axle, 3,000 horsepower

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[2] *See* NS Reply, p. III-C-216 (519 active units/808 manufactured units equals 64 2 percent).
[3] *See Coal Trading*, p. 413.
[4] *See* http //www.arb.ca gov/railyrd/ted/tedr_loco_options pdf
[5] *See* http://en wikipedia org/wiki/Switcher
[6] *See* http.//www arb ca gov/railyrd/ted/tedr_loco _options pdf

locomotive manufactured by Electro Motive Diesel ("EMD") between 1972 and 1986 While the SD40-2 can be used as a switch locomotive, its primary design and use is as a road locomotive, not a switch locomotive. Until larger, higher horsepower road units were manufactured, the SD40-2 was among the most commonly used road locomotives.

Finally, as fully discussed in the section below, NS has significantly overstated the lease rates for SD40-2 locomotives, so much so, than when its proposed lease rates on SD40-2 locomotives are corrected, they are nearly the same as those for SW1500 locomotives, and therefore DuPont is indifferent as to which unit is used for the DRR.

ii. Locomotive Lease Costs

On Opening, DuPont proposed lease rates for the ES44AC, GP38 and SW1500 locomotives based on publically available information These lease rates and those proposed by NS in Reply are shown in the table below.

Rebuttal Table III-D-2
Annual Locomotive Lease Rates per Unit

Unit Type	DuPont Opening	NS Reply	Difference
(1)	(2)	(3)	(4)
ES44AC	$97,419	${{ [redacted] }}	${{ [redacted] }}
GP38	$82,700	${{ [redacted] }}	${{ [redacted] }}
SW1500/SD40-2	$36,755	${{ [redacted] }}	${{ [redacted] }}

Source: e-workpapers "DRR Operating Expense_Errata.xls" and "DRR Operating Expense Reply xlsx."

As stated in Opening, DuPont developed its 2009 annual lease rates for ES44AC locomotives from information contained in the STB's decision in *AEPCO* and the public version of defendants' reply statement in that proceeding.[7] DuPont further supported this lease rate for ES44AC locomotives based on the STB's decision in *IPA* and the public version of UP's

[7] *See* DuPont Opening, p III-D-3.

evidence in that proceeding, which demonstrates that UP's 2011 annual lease rate for ES44AC locomotives equaled $95,851 [8]

On Reply, NS objects to DuPont's use of ES44AC locomotive lease rates from STB decisions in two western coal case, claiming a lack of relevance to this proceeding and that NS should not be bound by the litigation decisions made by other parties in other cases. NS further argues that it does not have access to the UP lease to evaluate its terms, nor can the parties to this proceeding test or validate the calculations put forth in the *AEPCO* or *IPA* proceedings [9]

NS's objections to the ES44AC lease rates relied on by DuPont are irrational. The fact of the matter is DuPont presented evidence as to the 2009 current market lease rates for ES44AC locomotives paid by another Class I carrier. The lease rates were adopted by both the UP and the STB in other STB maximum rate proceedings. Contrary to NS's contention, the fact that this cost was uncontested enhances its legitimacy Clearly this evidence represents the then current market rates for ES44AC locomotives. Further, NS provided no information regarding current market lease rates for ES44AC locomotives in discovery. thus the evidence relied on by DuPont in Opening is clearly relevant.

Confirming the irrational nature of NS's objection to use of evidence from the STB's decisions in *AEPCO* and *IPA*, NS adopts this very same evidence of ES44AC lease rates with an upward adjustment to reflect the higher acquisition prices paid for these locomotives by NS than UP during the 2008 through 2011 time period. Based on information reported to the STB in NS's and UP's R-1 Annual reports, NS demonstrates that it paid 10 to 16 percent more for ES44AC locomotives in this time period than did UP and therefore marked-up the lease payments used by DuPont to reflect this difference in NS acquisition price. NS's adjustment is

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[8] *Id.*
[9] *See* NS Reply, pp III-D-20-21.

inappropriate for two reasons. First, the DRR is not required to pay the highest market price for acquisition of assets, just because NS paid more for locomotives than did UP. Instead, a least cost most efficient railroad would pay the lower market price, not the higher market price as proposed by NS

Second, review of the information submitted by NS in Reply shows that UP acquired 260 ES44AC locomotives in 2008 through 2011 compared with just 91 ES44AC units acquired by NS in this same period It is very likely that the reason UP received a substantially lower price for its ES44AC units is because it purchased nearly three times more units that did NS As the DRR would purchase 636 ES44AC units, far more than those purchased by UP, the DRR would pay an acquisition price far closer to UP's price than to NS's acquisition price. In Rebuttal, DuPont continues to rely on the $97,419 annual lease rate for ES44AC locomotives that it developed from the record in the *AEPCO* proceeding.

For GP38 locomotives, DuPont relied on an annual lease rate of $82,699 per unit based on the average of lease rates published in the June 2008 issue of *Railway Age* of $225 per day indexed to 2Q2009. NS objects to this lease rate, based on not knowing the terms of the lease and instead uses an average annual lease rate for GP38 locomotives of $[redacted] developed from four NS leases provided in discovery. The leases used by NS are not reliable for determining lease rates for the DRR for two reasons First, because the four leases relied on by NS go into effect in [redacted], and therefore predate the 2009 start-up of the DRR, they do not reflect the market rates for leases for GP38 locomotives in 2009. The 2008 lease rates from *Railway Age* more closely match the market for GP38 units than do the NS leases from the earlier time period.

Second, one of the leases NS relies on has a fixed lease rate of ${{[redacted]}} per day for the life of the {{[redacted]}} term lease and for a {{[redacted]}} renewal term beginning in {{[redacted]}}. However, to artificially increase the lease rates, NS indexes the lease rate from this lease to 2Q2009 levels, when the lease itself specifically calls for a fixed rate throughout the life of the lease. In doing so, NS overstates the calculation of the average annual lease rates for GP38 locomotives. Removing the unsupported inflation of this lease rate, restoring it to the proper fixed level, and calculating a simple average lease rate results in an overall lease rate of ${{[redacted]}} per day or an annual lease rate of ${{[redacted]}}[10] This is virtually the same lease rate as used by DuPont in Opening of $82,699 DuPont continues to rely on an annual lease rate of $82,699 for GP38 locomotives in Rebuttal.

As stated previously, NS significantly overstated the 2009 market rates for the SD40-2 locomotives it proposes to use in switching service. NS calculates an average annual lease rate for SD40-2 locomotives of ${{[redacted]}} based on lease rates from ten leases These leases have effective dates from {{[redacted]}} through {{[redacted]}} Six of the ten leases were effective between {{[redacted]}} and have an average lease rate, in 2009 dollars, of ${{[redacted]}}. The remaining four leases, which have effective dates between {{[redacted]}}, have an average annual lease rate in 2009 dollars of ${{[redacted]}}.[11] The market for SD40 locomotives changed dramatically from the early to mid-2000's to the late 2000s for two reasons. First, the great recession that hit in 2008 and 2009 caused a reduction in traffic levels across the railroad industry, which resulted in a surplus of rolling stock, both locomotives and rail cars. Simultaneously, the Class I carriers began taking possession of the newest generation of locomotives, e.g. the ES44AC locomotives, thus creating an even greater surplus of older

[10] *See* DuPont Rebuttal e-workpaper "Locomotive Lease – Revised xlsx "
[11] *Id.*

SD40 locomotives. These two market events created a surplus of SD40 locomotives, which is reflected in the dramatic decrease in the lease rates for these units Only by including the out-of-date leases, which represent different a market for SD40 units, can NS create the significantly overstated lease rate it relies on for SD40-2 locomotives. When NS's lease rate for SD40-2 units is properly adjusted to reflect 2009 market rates, the resulting annual lease rate of $\{\{$ [redacted] $\}\}$ for these units is nearly the same as the $36,755 annual lease rate relied on by DuPont for switch locomotives.

iii. Number of Locomotives

On Opening, DuPont determined that the DRR requires a total of 662 locomotives in the Base Year. In Reply, NS claims the DRR requires 1,441 locomotives in the Base Year. As fully addressed in Part III-C, the difference in the number of units required is based on numerous issues, including trains moving on the DRR system, inputs to the RTC model that effect transit time, calculation of the peaking factor and spare margin, dwell time in yards, repositioning locomotives, and the number of yard switch assignments. As discussed in Part III-C, DuPont has made some revisions to the DRR operating plan which has resulted an in increase in the number of locomotives required in the Base Year The difference in the number of locomotive units is shown in Table III-D-3 below.

Rebuttal Table III-D-3
Base Year Locomotive Unit Requirements

Unit Type	DuPont Opening	NS Reply	Difference
(1)	(2)	(3)	(4)
ES44AC	481	977	496
GP38	101	291	190
SW1500	80	--	(80)
SD40-2	--	173	173
Total	662	1,441	779

Source. e-workpapers "DRR Operating Statistics_Errata xls," and "DRR Operating Statistics and Reply.xlsx "

As discussed in Part III-C, NS's road locomotive count of 1,268 locomotives[12] in 2009 must be rejected because: 1) its MultiRail based operating plan on which its RTC simulation is founded must be rejected; and 2) its methodology is inconsistent with the Board-approved methodology for ascertaining a SARR's road locomotive requirements.

b. Locomotive Maintenance Expense

As explained in Opening, NS system average locomotive maintenance costs were used because NS failed to provide any information requested in discovery that is specific to the various types of locomotives it utilizes, including ES44AC, GP38 and SW1500 (or SD40-2) locomotives. As a result, DuPont developed the system average cost per locomotive unit mile of $1.1795 from NS's 2009 R-1 Annual Report and applied this unit cost to all DRR locomotive unit miles, thereby producing a locomotive maintenance expense of $124.0 million. In Reply, NS calculated locomotive maintenance cost to equal $151 1 million. NS accepted DuPont's use of system average locomotive maintenance expense. However, NS revised DuPont's calculation to include employee fringe benefits In Rebuttal, DuPont accepts the inclusion of employee fringe benefits in locomotive maintenance cost, which increases the unit cost to $1.3461 per

[12] 977 ES44AC locomotives plus 291 GP38 locomotives

locomotive unit-mile. This amount applied to the locomotive unit-miles from trains moving over the DRR in Rebuttal yields annual locomotive maintenance cost of $156.4 million.[13] The remaining difference in the parties' locomotive maintenance cost results from the difference in locomotive unit miles.

In Reply, NS notes that the DRR has only four locomotive shops on its 7,300 mile rail network and speculates that the DRR is required to have a total of 10 shops, seven Division shops and three System shops.[14] The basis for NS's comment is not identified and therefore not supported However, NS's website shows that NS has a total of eight (8) locomotive shops on its 20,063 mile rail network, or two (2) fewer locomotive shops that NS claims are required by the DRR.[15] NS's requirement that the DRR have 10 locomotive shops is not only unsupported, it is unreasonable based on a comparison of NS own experience

c. Locomotive Servicing (Fuel, Sand and Lubrication)

Locomotive servicing cost is based on the price of fuel, fuel consumption and sand and lubrication costs The DRR's fuel cost is based on the average consumption per locomotive unit mile calculated from NS's 2009 R-1 Annual Report for road and yard locomotives and the actual price for fuel paid by NS in 2Q2009 The components of locomotive servicing costs are discussed below.

i. Fuel Cost

On Opening, DuPont used NS's actual price of fuel paid by NS for 2Q2009 of $1.545 per gallon as reported by NS in its Quarterly Review. NS accepted DuPont's fuel price in Reply[16] and DuPont continues to rely on this price per gallon Rebuttal.

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[13] *See* DuPont Rebuttal e-workpaper "DRR Operating Expense_Rebuttal xlsx "
[14] *See* NS Reply, p III-D-24.
[15] *See* DuPont Rebuttal e-workpaper "progressive railroading com – Norfolk_Southern.pdf "
[16] *See* NS Reply, p. III-D-25.

ii. Fuel Consumption

On Opening DuPont used NS's average fuel consumption rate as developed from NS's 2009 R-1 Annual Report. This fuel consumption rate equals 2.28 and 2.67 gallons per locomotive unit mile for road and yard locomotives respectively

In Reply, NS accepted these fuel consumption rates for GP38 locomotives and for switch locomotives, but arbitrarily increased the road locomotive fuel consumption rate by ten (10) percent as applied to locomotive unit miles generated by the high horsepower ES44AC locomotives.[17] Review of the calculations on this workpaper reveals that it has no relationship to fuel consumption by type of locomotives. Instead, NS simply calculates the percentage horsepower of ES44AC locomotives above that of the average horsepower for NS owned units with horsepower greater than 3800 horsepower.

Specifically, NS calculates the average horsepower for units in its locomotive fleet with more than 3,800 horsepower to equal {{[redacted]}} horsepower per unit NS then divides this result into 4,400 horsepower (the horsepower rating for ES44AC units) to yield an adjustment factor of {{[redacted]}} percent This factor is then applied to NS's average fuel consumption for road locomotives of 2.28 gallons per locomotive unit mile to yield an arbitrary fuel consumption rate for ES44AC locomotives of {{[redacted]}} gallons per locomotive unit mile. NS's adjustment is completely arbitrary and totally unsupported. The fact of the matter is that General Electric's Evolution Series locomotives, e.g ES44AC locomotives, are noted for producing substantially better fuel consumption than older locomotives.

As reported in the August 2009 issue of *Progressive Railroading*, "GE's Evolution Series Locomotive is 5 percent more fuel efficient than previous locomotives, saving about 300,000

[17] NS's calculation of the ten (10) percent increase factor is shown in NS workpaper "ES44AC Locomotive Fuel Consumption.xlsx "

gallons of fuel over its lifetime....The Evolution also is more than 6 percent more fuel efficient than GE's closest competitor in North America as validated by a nationally recognized, independent research institute . . GE's Evolution Series Model ES44C4, an AC alternative for traditional DC locomotive applications, uses up to 17 percent less fuel compared with older DC locomotives. Six hundred ES44C4s can displace up to 800 older DC locomotives to save more than 70 million gallons of fuel annually."[18]

Clearly, NS's arbitrary and unsupported adjustment to system average fuel consumption rates is unreasonable. It should also be noted that DuPont requested information in discovery related to fuel consumption by type of locomotive, which would demonstrate the exact fuel consumption rates of ES44AC locomotive units NS failed to provide the requested information

Finally, NS purports to demonstrate, through a hypothetical example, that a locomotive consist of two 4400 horsepower locomotives burns the same amount of fuel that a locomotive consist comprised of three 3000 horsepower locomotives. Contrary to NS's hypothetical example, using actual reported fuel consumption rates for 4400 horsepower GE Dash 9 – 44CW locomotives compared with 3000 horsepower SD40 locomotives shows that a consist of two 44CW locomotives in the throttle 7 position consume only 69.4 percent of the fuel consumed by a consist of three SD40 locomotives [19] Thus, NS's unsupported hypothetical example is not correct.

iii. Sand and Lubrication

On Opening, DuPont included the cost of locomotive sand and lubrication based on a cost of $0.2198 per locomotive unit mile for road locomotives and a cost of $0.0602 for switch

[18] *See* http//www.progressiverailroading com/mechanical/article/Locomotive-Manufacturers-offer-information-on-their-fuel-savings-models -- 21139, this article is attached as Rebuttal e-workpaper "Fuel Consumption.pdf"

[19] *See* DuPont Rebuttal e-workpaper "Fuel Consumption"

locomotives. These amounts were calculated from NS's 2009 R-1 Annual Report. NS accepts DuPont's use of these unit costs for locomotive servicing [20]

NS asserts, however, that DuPont has failed to provide sufficient capital investment for locomotive servicing and that an additional investment in locomotive servicing tracks and servicing trucks is required. *See* NS Reply at III-D-28. NS's assertion regarding investments in additional tracks is discussed in Part III-F. NS's assertion that DuPont failed to include the cost of the trucks is incorrect. Locomotive servicing (and fueling) is performed by contractors, who provide their own trucks. The contractors will decide what kind of trucks to use, and there is no need to add a separate cost for trucks, as the contractor's price would cover the contractor's costs including equipment costs

2. Railcars

a. Leasing

NS accepts DuPont's general methodology for determining car acquisition expenses for the DRR's coal and general freight.[21] In addition, NS's supporting workpapers show that NS also accepted DuPont's full service lease dollar values and its proposed rail car spare margin of 4 5 percent.

There are three areas where NS objects to DuPont's calculation of rail car costs First, NS does not accept DuPont's transit times as determined by DuPont's RTC model Second, NS contends that DuPont failed to include any dwell time that DRR equipment spends in yards between train assignments; and third, NS alleges that DuPont's calculations of car costs as they relate to intermodal flat cars and container/trailer equipment are erroneous Each of these are discussed below.

[20] *See* NS Reply, p III-D-27.
[21] *See* NS Reply, p III-D-28.

i. RTC Transit Times

As fully addressed in Part III-C, most of NS's objections to DuPont's RTC model are inaccurate and those items that have merit have been corrected in Rebuttal In Rebuttal, DuPont continues to rely on the transit times from its RTC model, as modified

ii. Dwell Time in Yards

NS states that DuPont has failed to include freight car cost associated with the time railcars used to move merchandise traffic spend in yards between train assignments. NS is correct that this time is omitted from DuPont's analysis. To remedy this omission, NS adds 38 hours for each of the 485,367 general freight carload moving on the system in DRR provided railcars. The 38 hours is based on assumptions that each car would dwell 10 hours in a hump yard, eight (8) hours in a flat yard and 20 hours in between arrival and departure on local trains. The railcar lease operating expense associated with the 18 4 million hours of yard dwell equals $9.7 million in the Base Year

DuPont agrees with the concept that yard dwell time for carloads moving in DRR provided freight cars is required However, NS's arbitrary assignment of 38 hours for each general freight carload moving in DRR provided cars substantially overstates the dwell time that should be assigned as it does not take into account the differences in handling required for the individual cars For example, NS's approach assumes that all general freight carloads moving in DRR provided cars receive the same dwell time regardless of the movement types. Specifically, a carload moving in overhead service receives the same yard dwell time as a car moving in local service even though the car moving in overhead service would never move in NS's category of "between arrival and departure on local trains"

To remedy the arbitrary nature of NS's yard dwell assignment. DuPont examined all general freight carloads moving in private cars by movement type, i.e , local, bridge, interchange

forwarded and interchange received Local carloads are assigned 40 hours of yard dwell, based on a movement between a road train and a local train on both the origin and destination ends of the movement, or 20 hours at each end of the move Bridge traffic carloads are assigned 16 hours of dwell time as they are assumed to move through a flat yard when they are interchange received and when interchange forwarded.[22] As bridge traffic is not handled by local trains, it is not assigned any time for moving "between arrival and departure on local trains." Finally, interchange received and interchanged forwarded carloads are assumed to move between a local train and a road train at the origin end of the move or termination end of the move and in interchange at the other end of the move, thus receiving 20 hours plus 8 hours for a total of 28 hours.

Application of the yard dwell hours more properly reflect the time DRR provided cars dwell in yards and results in a reduction in dwell time from the 18.4 million hours assigned by NS to 12.4 million hours in the Base Year.

iii. Intermodal Car Costs

To determine freight car costs for intermodal traffic in Opening, DuPont assumed all intermodal shipments moved using DRR provided flat cars. This assumption was made for two reasons. First, ownership of the railcar used in intermodal shipments is not evident from the NS's traffic data. Ownership of the container or trailer is available from plan codes included in the traffic data, however, this data does not indicate ownership of the railcar. NS's car event data does include a field for ownership information for railcars, however, in many instances this field is not populated for intermodal traffic. Therefore, DuPont employed the method used by the parties in previous stand-alone cost proceedings and accepted by the STB, which is to assume all

[22] As discussed in Part III-C, DuPont does not include hump yards on the DRR system, therefore the use of NS's 10 hours of dwell in hump yards does not apply

railcars in intermodal service are provided by the stand-alone railroad

In Reply, NS objects to the assumption that intermodal railcars are provided by the stand-alone railroad and instead points to Schedule 755 of its R-1 Annual Report showing that approximately two-thirds of intermodal car miles on the NS move in privately owned flat cars. In addition, NS provides a supporting workpaper titled "FlatCar_Init_Num xlsx" which shows for each unique railcar initial the number of railcars and shipments moving on the DRR and indicates ownership of the car as either private or railroad Based on the number of railcars, NS determines that 66 percent of railcars used in intermodal service are privately owned cars [23] In Rebuttal, DuPont accepts this adjustment with one modification In Opening, DuPont included *Triple Crown shipments with intermodal car miles and car hours. Because all Triple Crown* shipments move in railroad provided equipment, it is unreasonable and incorrect to assume that 66 percent of these shipments move in private cars. Therefore, in Rebuttal, DuPont correctly treats Triple Crown shipments separately from intermodal traffic.

In contrast, NS incorrectly included Triple Crown car hours and car miles with General Freight traffic and thereby misallocate, these statistics and the associated car cost to General Freight cars, such as hoppers, gondolas, box cars, etc., rather than identifying them as railroad provided cars This results in an overstatement of NS's calculated general freight car cost of $22.9 million.[24] The Triple Crown car miles and car hours should be handled as a separate line item with intermodal car costs.

NS also claims that DuPont's intermodal car costs are understated as a result of understated transit times from the RTC model. As fully addressed in Part III-C, nearly all of NS's allegations regarding DuPont's RTC model are unfounded and any valid understatement

[23] This is somewhat of a misnomer as these cars are owned by TTX, which is wholly owned by the railroad industry.

[24] *See* DuPont Rebuttal e-workpaper "DRR Car Costs_Reply_Revised xlsx "

has been corrected in Rebuttal

Finally, NS states that DuPont's intermodal car costs are understated to the extent that an overmile lease cost has been omitted from the railroad provided intermodal cars. DuPont has corrected this omission in Rebuttal.

b. Railcar Maintenance

NS accepts DuPont's use of full service car leases for the railcars provided by the DRR, and thus the underlying concept that the lease payments include maintenance costs. However, NS states that DuPont failed to provide facilities required to perform the necessary railcar maintenance functions, such as running repairs to foreign and private equipment To remedy this alleged error, NS adds the cost of two car shops (one at Chattanooga, TN and one at Elkhart, IN) and repair ("rip") tracks at 15 locations. NS also includes costs for 26 wheel change trucks.[25] While NS claims that the exclusion of these facilities is a "glaring omission" on DuPont's part, it is not. What is a glaring omission is NS's failure to recognize that running repairs to foreign and private equipment are reimbursed to the carrier performing the repair service under the AAR Interchange rules [26] Moreover, the reimbursement amounts are more than sufficient to offset the cost of performing the repairs and the facilities required to make the repairs. NS not only did not identify this offsetting compensation, it did not include the compensation in DRR's revenues.

In Rebuttal, DuPont does not add the cost of the railcar repair facilities or rip tracks and also does not include the offsetting revenues from performing the repairs.

[25] *See* NS Reply, pp III-D-33-34 It should be noted that NS includes the cost of the two repair shops and the rip tracks are included in the DRR investment base, not in the DRR operating expense.

[26] *See* DuPont Rebuttal e-workpaper "AAR Interchange Rule 1 2 a.(6).pdf"

c. Private Car Allowances

Other than for intermodal cars, which are fully discussed above, NS accepts DuPont's approach to private car allowances.[27]

3. Operating Personnel

There are two principal problems with NS's approach to determining the DRR's personnel requirements First, the NS witnesses' approach is consistent with the managerial mindset of a large, unionized Class I rail carrier Not only are Class I carriers such as NS heavily unionized, their management structure – particularly on the operating side – reflects a hierarchical, militaristic approach with tight command-and-control that leads to excessive layers of management, rather than empowering employees to take on additional responsibilities and think for themselves. As a non-union startup, the DRR is not burdened with rigid craft boundaries or by the kind of managerial mindset typical of a Class I railroad such as NS.

a. Number of T&E Personnel

On Opening, DuPont determined that the DRR requires a total of 3,166 T&E employees to operate its road trains, helper assignments, and yard switching assignments. NS proposes to increase the DRR's T&E employees to a total of 4,422 T&E employees.

NS argues that DuPont has understated DRR's T&E employees in all three categories of T&E employees (road, helper and yard) NS states that the sources of the T&E employee understatement are related to. 1) DuPont's omission of thousands of trains from the DRR system; 2) DuPont's failure to account for directional imbalances in train flows on the DRR, 3) DuPont failed to incorporate an appropriate level of re-crews on the DRR; 4) DuPont failed to include helper service at all the locations where it is required, and 5) DuPont failed to provide adequate

[27] *See* NS Reply, p III-D-34

yard personnel for classification switching at individual yards. Each of these items are addressed below:

i. In Rebuttal DuPont Includes All Required Trains on the DRR System

In Part III-C of its Reply, NS falsely claims DuPont omitted tens of thousands of trains from the DRR system. In Rebuttal, DuPont thoroughly reviewed NS's claims and found that it inadvertently omitted 9,971 trains from the DRR in its Opening evidence, rather than the 61,610 trains NS incorrectly identifies This issue is fully addressed in Part III-C of DuPont's Rebuttal evidence

ii. Directional Imbalances On the DRR

NS argues that DuPont has erred by not considering the imbalances created by imbalances in train flows by direction in between points. NS performs an analysis of this alleged imbalance based on its 2010 MultiRail derived train list and determines that 415 additional T&E personnel are required to offset the imbalance [28] NS's analysis is fatally flawed for two reasons. First, as fully discussed in Part III-C, NS use of MultiRail produces statistics that are unsupported. Second, NS's approach to determining the imbalance isolates each crew on-duty and off-duty pair without regard to either locations in close proximity or to broader crew assignments in which crews operate

For example, in determining the imbalance between Atlanta, GA and Macon, GA, NS treats three points within the Atlanta area (Atlanta, the Austell Intermodal facility and East Point) as separate locations and both Macon and Macon Junction as separate isolated locations. In doing so, NS determines imbalances of 1,040 crew starts between point pairs When the Atlanta

[28] *See* NS Reply, pp. III-D-35-36 and NS Reply e-workpaper "MultiRail 2010 Deadhead Crew xls "

terminal and Macon terminal are examined together, no imbalance exists NS's approach is summarized in Table III-D-4 below.

Rebuttal Table III-D-4
NS's Improper Calculation of Crew Imbalance
Atlanta Terminal to Macon Terminal

Atlanta Terminal	Macon Terminal	Inbound	Outbound	Imbalance
Atlanta	Macon	4,056	4264	208
Atlanta	Macon Jct	156	468	312
Austell Intermodal	Macon Jct	364	0	364
Eastpoint	Macon	156	0	156
NS's Total				**1040**
DuPont Total		**4,732**	**4,732**	

Source. DuPont Rebuttal e-workpaper "MultiRail 2010 Deadhead Crew_Revised xlsx "

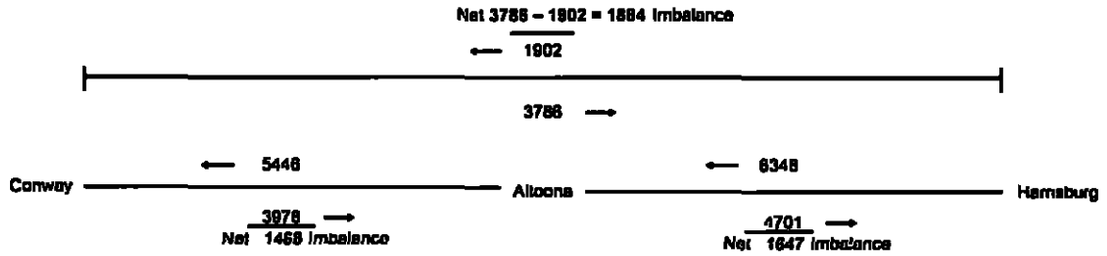
Based on the data in the table above, NS concludes there is an imbalance of 1040 crew starts, with two crews per start and 270 shifts per year worked; NS concludes this unrealistic imbalance requires eight (8) additional T&E employees[29] However, when the Atlanta and Macon terminals are considered as part of this analysis, there is a perfect balance of 4,732 crews outbound from the Atlanta Terminal to the Macon Terminal and 4,732 inbound crews from Macon Terminal to Atlanta Terminal, thus a zero imbalance and no additional T&E personnel are required

More importantly, NS's fails to consider broader geographic areas in its analysis than two specific points For example, NS looks at crews operating trains moving between the point pairs of Harrisburg, PA and Altoona, PA, Altoona, PA and Conway, PA; and Conway, PA and Harrisburg, PA in isolation, when in reality they should be looked at regionally. Altoona and Conway are west of Harrisburg, so crews that move from Harrisburg to Altoona and from Altoona to Conway offset imbalances from crews moving from Conway to Harrisburg The

[29] (1,040 x2)/270=7.7 rounded to 8 employees

following diagram shows that NS's calculation of crew imbalances between these points in isolation results in an imbalance of 4,999 crew starts in the Base Year requiring an additional 38 T&E personnel.[30]

NS Crew Rebalancing
Harrisburg to Conway
DRR Rebuttal Base Year Road Trains



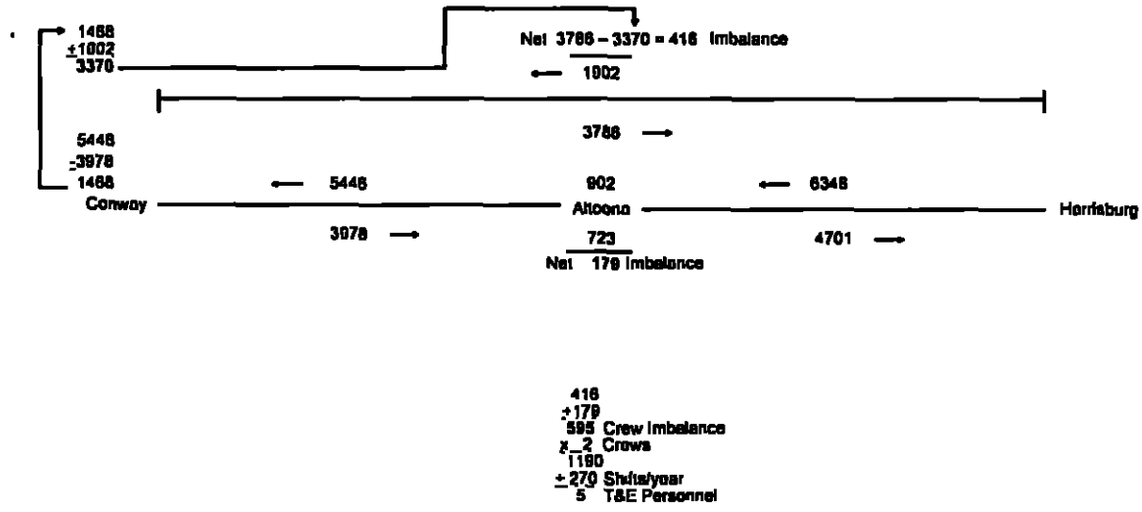
1647
1468
+1884
4999 Crew Imbalance
x 2 Crews
9998
÷ 270 Shifts/year
38 T&E Personnel

However, if these three crew point pairs are appropriately viewed together as shown below, it is obvious that the excess crews that move westbound from Harrisburg to Altoona and Altoona to Conway can be used to offset the eastbound crew imbalance from Conway to Harrisburg. In doing so, the crew-start imbalance drops from 4,999 starts to only 595 starts and the additional T&E employees required to cover this annual imbalance is just five (5) employees. Clearly, NS's isolated approach produces an unrealistic result and cannot be relied upon

[30] The source for the crew starts shown in Diagrams 1 and 2 are DuPont Rebuttal e-workpaper "Crew Segments.xlsx."

PUBLIC VERSION

DuPont Crew Rebalancing
Harrisburg to Conway
DRR Rebuttal Base Year Road Trains



In response to NS's Reply evidence, DuPont, in Rebuttal examined the crew imbalances throughout the DRR system using the broader approach described above and finds that a total of 49 T&E personnel must be added to the DRR system in the Base Year to offset any crew imbalances which result from train flows. [31] This is far less than the unrealistic 415 additional T&E personnel incorrectly added to the DRR by NS.

iii. DRR Re-Crew Rate

A re-crew rate is the frequency that train crews exceed their hours of service and must be replaced by a relief crew. In Opening DuPont determined a re-crew rate of 0.4 percent based on the number of trains that exceed the hours of service limitations in the RTC simulation. In Reply, NS rejects DuPont's re-crew rate based on strictly anecdotal evidence and replaces it with a 2.0 percent re-crew rate allegedly based on recent NS experience; however, NS provides no support whatsoever for its 2.0 percent re-crew rate. In Rebuttal, DuPont continues to develop its

[31] *See* DuPont Rebuttal e-workpaper "Crew Rebalancing.xlsx."

re-crew rate from the number of crews that expire from its RTC simulation. Based on DuPont's Rebuttal RTC simulation, the re-crew rate equals 0.5 percent.[32]

iv. DuPont Includes All Necessary Helper Service

In Opening DuPont provided 62 T&E personnel to provide helper service and in Reply NS included 90 T&E personnel providing helper service As fully discussed on Part III-C related to helper locomotives, in Opening, DuPont provide helper service in all locations necessary. As stated in Part III-C, DuPont provides helper service at five (5) locations on the DRR. NS adds helper service at five (5) additional locations. As shown in DuPont's RTC simulation, DuPont provides sufficient locomotive power on all trains at each of the five (5) locations where NS adds helper service, the difference is that DuPont's operating plan adds and removes the power at the beginning or end of crew districts, thereby eliminating the need for helper crews at these locations. In Rebuttal, DuPont continues to include 62 T&E employees to provide helper service.

v. Yard Crews

In Opening, DuPont included 496 yard crew personnel located at 40 yards on the DRR In Reply, NS claims that DuPont significantly understated the yard crew requirements because it failed to provide necessary classification switching services. NS included 1,071 yard crew personnel and switching services at 54 yards on the DRR In Part III-C *supra*, DuPont addressed the omission of classification of cars in yards in its Opening evidence, which resulted in an understatement of yard crews

Also fully discussed in Part III-C, the yard classification car counts provided by NS in Reply were developed through its flawed MultiRail process and are unsupported. Moreover, the workpapers containing the car counts included with NS's Reply evidence are only hardcoded

[32] *See* DuPont Rebuttal e-workpaper "Base Year Train List_Statistics_Rebuttal.xlsx "

numbers which cannot be verified. When asked for supporting workpapers NS provided an additional spreadsheet with more unverifiable hardcoded numbers and the classification car counts in this spreadsheet differed from those included with NS's Reply workpapers. When NS finally provided DuPont's experts limited access to its MultiRail programs and procedures, the read only MultiRail documents provide yet a third set of unverifiable classification car counts.

Rather than relying on any of NS's unsupported car counts and NS's flawed MultiRail procedures in Rebuttal, DuPont developed classification car counts in each yard from the car event data provided by NS in discovery This actual car event data corresponds to NS's actual train data, which DuPont relies on for its operating plan and not NS's made for litigation MultiRail data. In developing the classification car counts from the car event data, DuPont included all cars moving between trains in each individual yard and excluded cars moving in blocks between trains (i.e, "block swaps"). Cars originating or terminating in the individual yards were then added to the cars being classified. This is the procedure NS identifies as being appropriate for identifying cars for classification purposes in yards.[33]

The number of yard crew assignments and yard crew starts per shift were determined for each yard based on a combination of the cars requiring classification plus cars originating and terminating in each yard. Based on the procedures described above, DuPont includes 645 yard crew personnel providing switching services in 49 yards in Rebuttal.[34]

In Rebuttal DuPont includes a total of 3,428 T&E employees to provide road, helper and yard switching services.

[33] *See* NS Reply e-workpaper "Terminal Capacity Requirement Tracking Process for Hump Classification Yards.doc," pp 10-11.

[34] *See* DuPont Rebuttal e-workpaper "DRR Yard Crew Personnel_Rebuttal.xlsx "

b. T&E Personnel Compensation

In Opening, DuPont based the wages for T&E personnel on those included in NS's 2009 Wage Forms A and B[35] and fringe benefits based on information reported by the Association of American Railroads.[36] In Reply, NS argues that both DuPont's T&E wages and fringe benefits are understated. Each of these topics are discussed below.

i. T&E Wages

In Opening, DuPont uses the average wage paid to T&E employees by NS as shown in its 2009 Wage Form A and B of ${{[redacted]}}.[37] In Reply NS argues that DuPont has significantly understated the wage the DRR would have to pay T&E employees who work 270 shifts per year and instead included wages of ${{[redacted]}}[38] based on the average wage paid to NS T&E personnel who worked between 256 and 285 shifts per year The {{[redacted]}} T&E employees included in the NS analysis have a range of salary from ${{[redacted]}} and ${{[redacted]}}.[39]

Of these {{[redacted]}} employees, there are {{[redacted]}} employees with an average salary of less than $80,000 who have worked an average of {{[redacted]}} years on NS. These {{[redacted]}} employees work an average of {{[redacted]}} shifts and have an average salary of ${{[redacted]}} Of the {{[redacted]}} employees whose salary is greater than $80,000, the average length of employment on NS is {{[redacted]}} years These employees work an average of {{[redacted]}} shifts and have an average salary of ${{[redacted]}}[40]

Thus, contrary to NS's argument, tenure, *not* number of shifts worked, drives the average wage. The DRR is hiring new employees and is incurring the expense of training new

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[35] *See* DuPont Opening, p III-D-11
[36] *Id*
[37] *See* DuPont Opening e-workpaper "DRR Operating Expense_Errata xls."
[38] *See* NS Reply e-workpaper "T&E Crew Salary.xlsx."
[39] *See* DuPont Rebuttal e-workpaper "T&E Crew Salary_Revised xlsx "
[40] *Id*

employees[41]; therefore it will continue to pay an average salary of ${{[redacted]}}, which is very close to the average wage of those {{[redacted]}} employees with an average length of employment of {{[redacted]}} years

ii. Fringe Benefits

In Opening, DuPont uses a fringe benefit ratio of 37.5 percent as published by the AAR for all Class I railroads in 2009.[42] In Reply, NS alleges that DuPont's experts should have somehow disavowed this number and not used it because an average fringe benefit ratio of 43 percent can also be calculated from another AAR document, which NS includes in its workpapers.[43] NS then proffers a fringe benefit ratio of 49.2 percent based on a three year average of fringe benefit ratios (2009 through 2011) for NS and CSXT combined.

NS apparently will go to no end to increase the DRR's expense where ever possible. Not satisfied using its own 2009 fringe benefit ratio of 43 7 percent, it proposed using a three year average ratio including 2009, 2010 and 2011 in order to have an ever increasing fringe benefit ratio.[44] Still not satisfied with the result, NS then adds CSXT's fringe benefit ratio to the average, as CSXT has an even higher ratio than does NS.[45] Only by using a three year average fringe benefit ratio of the combined NS and CSXT can NS produce the 49.2 percent fringe benefit ratio it proposes for the DRR.

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[41] DuPont's T&E personnel training cost is derived from data provided by NS in discovery and accepted by NS in Reply.

[42] *See* DuPont Opening workpaper "Salaries.pdf" which includes a document from the AAR website titled "Description of Data and Sources" which is an excerpt from AAR's document titled "US Freight Railroad Industry Snapshot " This document states that 37 5 percent is AAR's "estimate of the value of average railroad fringe benefits in 2009

[43] *See* NS Reply WP "AAR Class I Railroad Statistics."

[44] *See* NS Reply, p. III-D-43. NS's fringe benefit ratios for 2010 and 2011 equal 45 3 percent and 48 0 percent, respectively.

[45] *Id* NS shows CSXT's fringe benefit ratio to equal 49.8 percent, 53.8 percent and 54.3 percent in 2009, 2010 and 2011, respectively This produces of an average of 52.6 percent

DuPont rejects this fringe benefit ratio for two reasons. First, as with many other expense categories, NS uses a multiple year average rather than 2009 expense to increase the base year expense level. DuPont believes this is inappropriate as the starting date of the DRR is in 2009 and the 2009 First Year operating expenses are indexed to subsequent years based on a hybrid of indexes derived from AAR expense data which reflects the increase in operating expense in subsequent years. NS's method of using an average of three years of data including those subsequent years, then applying an index based on increased expense results in a double count of expenses.

Second, NS's inclusion of CSXT's fringe benefit is a blatant attempt to drive up the DRR's fringe benefit ratio. Were NS really attempting to reflect the regional operating cost borne by Class I carriers as it claims to be doing,[46] it would have included CSXT's costs in all of its calculations, including those where CSXT has lower unit costs than does NS Moreover, as a least cost, optimally efficient railroad, the DRR is entitled to the lowest cost, not an average of the NS and CSXT cost

In Rebuttal, DuPont continues to rely on the 37 5 percent fringe benefit ratio used in Opening. As a least cost, most efficient carrier, the DRR would strive to minimize expenses where ever possible. The 37 5 percent fringe benefit ratio is realistic and supported by the fringe benefit ratios paid by KCS and BNSF in both 2009 and 2010 as shown in NS's Reply evidence.[47] The average 2009 fringe benefit ratio for KCS and BNSF combined equals 37 1 percent. which is less than the 37 5 percent fringe benefit ratio, relied on by DuPont

[46] *See* NS Reply, p III-D-45

[47] *Id*, p III-D-43 As shown in NS's Reply, KCS's 2009 and 2010 fringe benefit ratios are 35 4 percent and 36 4 percent, respectively and BNSF's fringe benefit ratios for 2009 and 2010 are 38 8 percent and 36.3 percent respectively

iii. Hotel and Taxi Expense

In Opening, DuPont includes the cost of T&E crew hotel and taxi expense based on actual retail hotel rates for hotels throughout the 20 state area served by the DRR as developed from an internet search of hotels where DRR crews would overnight. In addition, DuPont included taxi rates based on the actual distance from DRR yard locations to these hotels based on taxi rates by state. DuPont's total hotel expense in Opening equals $12 4 million and taxi expense equals $3.8 million In Reply, NS accepted DuPont's unit costs and methodology for calculating hotel and taxi expense and increased it to reflect the higher number of trains included in its analysis In Reply NS includes $14.1 million for hotels and $4.4 million for taxi expense

NS then included a meals additive to these costs equal to {{[redacted]}} percent of the aggregate hotel costs, based on NS's experience in 2009.[48] NS's hotel expense, including the meals additive for the DRR in Reply, equals ${{[redacted]}} million. Examination of NS's workpaper shows that NS's combined T&E hotel and meals expense in 2009 was a total of ${{[redacted]}} million for its entire system, or $1.7 million less than what it proposes for the DRR

As stated above, DuPont's estimates of hotel and taxi expenses are based on *retail* rates not the contract rates that NS or a Class I carrier would be able to negotiate with a hotel chain or taxi company. NS's use of retail rates, plus a meals additive produces an unrealistic result as is evidenced by the fact that its result for the 8,000 mile DRR network is higher than NS's own expense for its 20,063 mile network.

In Rebuttal, DuPont continues to calculate hotel and taxi rates in the same manner as it did in Opening, increased to reflect the addition of trains to the network discussed in Part III-C and resulting in a hotel expense of $12.5 million and a taxi expense of $3.8 million.

[48] *See* NS Reply e-workpaper "Meals Additive xlsx "

c. Non-Train Operating Personnel

In Opening, DuPont provided a total of 591 non-train operating personnel, NS proposes to increase this number to 1,296, an increase of 705 employees or 119 percent.[49]

NS claims that "[t]he complexity and geographic scope of the DRR's operations-which involve more than 7,300 system route miles and another 818 miles of trackage rights-require the DRR to maintain an extensive field operations team to support its train service plan."[50] Contrary to NS's assertion, DuPont's staffing levels for the DRR's non-train operating personnel are very adequate and similar to those of smaller Class I railroads of similar size to the DRR. For example, C&NW ,which had a similar operation to that of the DRR, had transportation staffing (excluding Train & Enginemen and mechanical personnel) of 280 employees in 1994.[51] As shown in Table III-D-5 below, this compares favorably with DuPont's proposed non-train transportation personnel staffing (also excluding T&E and mechanical employees) for the DRR in Opening of 310 employees In contrast NS's proposed staffing level for non-train operating personnel in Reply is 745 employees (also excluding T&E and mechanical personnel).[52]

[49] The difference between the parties' positions on the staffing requirements for the DRR's non-train operating personnel (other than maintenance-of-way personnel, which is discussed separately in Part III-D-5 below) are summarized in Table III-6 on page 24 of NS's Reply Exhibit III-D-1

[50] *See* NS Reply Exhibit III-D-1, p. 2

[51] C&NW 1994 Wage Form A&B, provided in DuPont Rebuttal e-workpaper " C&NW 1994 Wage Form A and B pdf "

[52] *See* NS Reply e-workpaper "DRR Operating Expense Reply.xlsx "

Rebuttal Table III-D-5
Comparison of Non-Train
Operating Personnel Employees

Basis	No. of Employees
(1)	(2)
DuPont Opening	310
NS Reply	745
DuPont Rebuttal	328
C&NW 1994	280

Source Non-Train Operating Employees.xlsx

The table shows that DuPont's staffing of the DRR is similar to the C&NW and would be more than sufficient to run a railroad efficiently and effectively. Moreover, NS's proposed staffing is more than twice that of C&NW and does not reflect efficient railroad operations for a railroad the size of the DRR The following discussion addresses specific differences between the parties with respect to each category of operating employees below.

i. Transportation Department

(1) Operations Planning and Joint Facilities

On Opening, DuPont proposed that the DRR's operations planning and joint facilities functions be staffed with four (4) analysts, i e., two (2) planning analysts and two (2) joint facilities analysts. NS determined that five analyst positions would be required to cover the necessary functions.[53] DuPont stands by its Opening proposal of four (4) analysts The primary responsibility of Operations Planning is to maintain, and adjust as necessary, classification tables and train schedules for the DRR system on an on-going basis Based on Mr McDonalds's experience, C&NW combined the operations planning and joint facilities functions and was able

[53] *See* NS Reply Exhibit III-D-1, p. 3

to complete the work with only three (3) people The four (4) analysts suggested by DuPont in Opening are sufficient for DRR

NS also claims that "DuPont did not provide any staffing for systems support at all levels of field and headquarters operations, or to maintain classification tables and train schedules for the system."[54] Contrary to NS's claim, DuPont includes staffing for systems support in IT (IT personnel are discussed in Rebuttal Exhibit III-1) The Operating Department does not need duplicative IT people within its own department. Systems on the DRR overlap between departments, so a cohesive group of analysts working together works better than that suggested by NS. When the need arises anywhere in the Operating Department, systems support is contacted for assistance or trouble-shooting.

(2) Operations Control

In Opening, DuPont includes a Director – Operations Control and two (2) Managers – Operations Control working 24/7 for a total of 10 employees. NS accepts the same personnel requirements as DuPont for Operations Control, with the addition of three Assistant Directors – Operation Control to supplant the role of the Director during secondary shifts. The two Managers – Operations Control on each shift are responsible for coordinating and maintaining records of locomotives, be they run-through or not, reporting incidents to all concerned requiring notification to government agencies, and for coordinating locomotive movements with the Mechanical Department to and from the shops DRR does not need the extra layer of supervision (i.e, the Assistant Directors) to watch over the work of its Managers, whom are qualified to do their work effectively. The Director is responsible for the performance of all his managers.

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[54] *Id.*

(3) Dispatch

Based on Mr. McDonald's experience, DuPont's operating plan calls for 25 dispatching desks located at the DRR's Roanoke headquarters, 11 of which are responsible for dispatching trains, track inspection vehicles, and work equipment on the North Region, and 14 of which are responsible for dispatching trains and equipment on the South Region. Each desk is manned by one dispatcher, three shifts per day, seven days per week. A total of 110 dispatchers are required to man the 25 dispatcher positions on a 24/7 basis and are supervised by two Chief Dispatchers (north region and south region).[55] In contrast, NS proposes the DRR would need a *minimum* of 39 dispatching desks, along with 170 Dispatchers and 22 Chief Dispatchers.[56]

NS proposes a chief dispatcher for every five dispatcher desks, around the clock, seven days a week. This is entirely unnecessary, as a chief dispatcher should not have to assume the role of constantly supervising the dispatchers. Dispatchers are responsible themselves for coordinating work with the crew callers, coordinating taxi service, notifying authorities of incidents, and handling locomotive and equipment failures that may occur. All such incidents take place in front of dispatchers, and it is the responsibility of the dispatcher to handle what may be required. Passing these responsibilities on to someone else in the dispatch arena is superfluous and inefficient. The North and South DRR chief dispatchers are responsible for all of the region's personnel and the performance.

NS claims that "[c]oncentration of the DRR's dispatching work into {{[redacted]}} the number of desks that NS maintains today is both inappropriate and potentially unsafe, given the fact that the DRR's operations involve traffic levels and train activity that are similar to NS's real

[55] *See* DuPont Opening Exhibit-III-D-1, p. 6
[56] *See* NS Reply Exhibit-III-D-1, pp. 5-8.

world operations."[57] This claim is unreasonable given the fact that DRR is operating 8,000 miles of railroad, whereas NS operates more than 20,000 miles. The traffic levels of NS should not be used as a benchmark for the DRR staffing.

DuPont agrees that supervision may be needed to assure things run smoothly. DuPont has added an Assistant Chief Dispatcher, on duty 24/7, to both the North and South Regions to assist in coordination of traffic between dispatcher desks and to handle any problems or unusual matters that may occur This level of staffing requires nine employees. So while NS suggests more desks and a chief dispatcher for every five desks, DuPont believes an Assistant Chief Dispatcher covering 11 desks in the North and an Assistant Chief Dispatcher covering 14 desks in the South will suffice. To a degree, this relieves each region's Chief Dispatchers of day-to-day responsibilities, and allows them to concentrate more on planning efforts and working with superiors, outside parties, and other departments While the Chief Dispatcher will be able to focus on more concerning matters, they will continue to be responsible for all dispatching personnel and their performance.

(4) Crew Management and Crew Calling

In Opening, DuPont proposed DRR be staffed with two Crew Management Directors and 18 Crew Callers [58] NS claims DRR must be staffed with two Directors, seven Managers, and 35 Crew Callers.[59]

DuPont provided for two Crew Management Directors because the DRR has an automated crew-management system, which is designed to handle virtually all basic crew

[57] *See* NS Reply Exhibit III-D-1, p 6.

[58] *See* DuPont Opening Exhibit III-D-1, pp. 6-7

[59] *See* NS Reply Exhibit III-D-1, pp 8-9. NS claims the industry average ratio of Train and Engine employees to Crew Callers in 2010 was 90 T&E members for each Crew Caller and applies this ratio to the proposed DRR T&E employees to arrive at 35 Crew Callers While NS refers to the practice of the industry, they provide no workpaper supporting this number. Therefore it is not supported by any workpaper and cannot be deemed reliable

interactions via automated calling and response systems (including identifying the proper crews for the proper jobs and automatically routing calls from crews to the appropriate dispatcher). The Crew Directors manage the crew-calling system and supervise the Crew Caller positions.

NS does not describe the real world functions of Crew Management properly. Assignments are made automatically by the computer, and crew callers only intercede when exceptions are indicated and adjustments are necessary It is beyond reason that NS only completes 40 percent of its assignments without caller intervention, with 60 percent of its assignments requiring intervention On C&NW, a railroad similar in size and traffic levels as DRR, caller intervention was considerably less, averaging 15 percent of its assignments. NS's excessive need for caller intervention may be due to the union agreements NS is saddled with. Mr McDonald can attest that, when C&NW started its automatic crew calling system, the UTU only agreed to the system when they were given favorable treatment on many different issues. At the time, Mr. McDonald was C&NW Operating-Administration Vice-President and was in charge of implementation of the automatic crew calling system, which involved considerable negotiations with the Union. Such negotiations can easily stir up controversy; however, seeing as how DRR is non-union, it will not have to worry about these difficulties. Given the similarities in DRR and C&NW size and traffic, and the differences regarding union troubles, DuPont believes an adequate number of crew callers for Crew Management were assigned on Opening However, DuPont has determined to increase the Crew Management Office to 27 (each region will have three crew caller desks staffed 24/7, and with a Director – Crew Management on each region-five days per week on first shift.)

(5) Terminal Operations

In addition, to the Field Operations personnel proposed by DuPont, NS proposes a separate Terminal Operations department that is separate and independent from Road

Operations. DuPont disagrees with the addition of this department as unnecessary as these operations are intertwined with the other field operations employees and must be organized accordingly. Both NS and DuPont agree that the field operations staff should include a North and South Region General Manager, along with five Directors-Field Operations for each region. DuPont maintains its position that 56 Managers-Field Operations, six Managers-Yard Operations, and 48 Assistant Managers-Yard Operations will be able to maintain a more fluid operation than the excessive number of assistant managers posited by NS who work only in the yard they are assigned.

Additionally, NS states "[t]he DRR's terminal operations must maintain consistent and efficient train movements, service to local customers, interchange with other railroads, and coordination with other Class I carriers to ensure that fluidity and service levels are maintained."[60] NS currently has {{[redacted]}} people on its railroad of 20,000 miles to handle these different functions and proposes one Director and four analysts doing this same work for DRR. DuPont disagrees with the addition of these positions. The functions listed by NS are all handled by the same people who handle "road" work. Terminal operations are intertwined with road operations, and DRR's supervision is situated so that those assigned at a terminal have responsibilities both within the terminal and for nearby road operations and trains arriving/departing the terminal. This provides cohesive interaction for the overall operation. NS's approach only adds confusion and unnecessary supervision by splitting duties that are better handled as a unit.

(6) Locomotive Operations

DuPont proposed 11 Managers of Locomotive Operations ("MLO") who would be responsible for the safe and efficient handling of locomotives and trains by the DRR's engineers.

[60] *See* NS Reply Exhibit-III-D-1, p. 4

NS claims that MLO's "are responsible for much more than the generic summary of duties that DuPont presents" and has increased the number of MLO's to 24.[61] The duties of MLO's listed by NS are unreasonable

While MLO's would be responsible for investigating accidents and qualifying Engineer's who may be unfamiliar with a given territory, the same is usually accomplished when riding with an engineer who is already qualified on the particular territory. All other duties noted by NS are those that were included in DuPont's Opening.

NS makes the unsupported claim that "[t]he rail industry standard for engineer-to-manager ratio is approximately 70-80/1" and DuPont's "MLO's would be responsible for 145 engineers."[62] This standard has no basis for a Class I railroad the size of DRR and NS's claim that DRR would not be able to handle such monitoring is unreasonable. Based on Mr McDonald's experience the proposed level of MLO's on the DRR is adequate.

Also, contrary to NS's assertion, three MLO's each handling the duties of two crew districts from the centrally located headquarters between Chicago and Three Bridges, NJ is more than possible. This is another example of employing excess management and "watchdogs", which creates an atmosphere of distrust among employees. DRR maintains it has accounted for the correct number of MLO's

(7) Intermodal and Automotive Terminals

NS assumes that the Intermodal and Automotive Terminals have separate supervisory personnel independent from DRR's other operations, and staffs such terminals with 16 Intermodal Terminal Mangers, eight (8) Intermodal Terminal Assistant Managers, and three (3)

[61] *See* NS Reply Exhibit III-D-1, pp. 10-11.
[62] *See* NS Reply Exhibit III-D-1, p. 11

Automotive Terminal Managers.[63] This staffing is completely unnecessary. These terminals are interconnected with other yard and road operations and do not require additional and independent supervisory personnel. Accordingly, DRR's terminal and road supervision assigned to the respective territory where these operations exists are responsible for coordination of all transportation related activities with the terminal contractors, the same as they are with other independent customers.

ii. Mechanical Department

In Opening, DuPont included a Vice President – Mechanical, an administrative assistant, a Manager – Budgets. two (2) Directors – Locomotive Services, a Manager – Testing and Environmental, two (2) Directors – Car Services and 269 car inspectors. NS has accepted the staffing of each of these positions except for car inspectors, where it added 195 inspectors. NS also added, a Manager – EOTD, nine (9) Managers – Maintenance Planning and 46 Mangers of Car Services and 22 line of road Carmen.

(1) EOTD Manager

NS claims that "the DRR would need a dedicated Manager with specific responsibility for the DRR's 1,441 End of Train Devices (EOTDs)."[64] NS's proposal of a Manager to supervise this operation is unrealistic and unnecessary. This function is better handled by the crews involved, the dispatcher records, and the transportation and mechanical officers at points where EOTD's are added or removed. This is yet another example of NS assuming each and every function requires a separate managerial individual.

[63] *See* NS Reply Exhibit III-D-1, pp. 11-12.
[64] *See* NS Reply Exhibit III-D-1, p 13.

(2) Managers – Maintenance Planning

NS adds nine (9) employees to manage car maintenance. NS assumes DuPont has provided no staffing for its car maintenance planning and coordination with maintenance contractors, when this is the primary function of its Director-Car Services. In discussing the addition of Managers – Maintenance Planning, NS states it has {[redacted]} positions providing these services on its system and, through scaling, adds employees to the DRR. NS does not explain how its system wide {[redacted]} positions yields nine (9) managers of car maintenance.

NS has incorrectly assumed that the function of car maintenance cannot be outsourced While NS is constricted by union contracts, DRR is not, and is free to outsource these functions as desired. DRR does not need supervisors to watch over staff forces, when the staff is quite capable and can do the work themselves. DuPont has included the costs involved, but not the company employees.

(3) Car Inspection

In Opening DuPont provided for 269 car inspectors working at 15 locations throughout the DRR system. In Reply, NS included 464 car inspectors at 29 locations. NS also included 22 line of road car inspectors to inspect and repair equipment that fails en route. Finally, NS includes 46 managers of car inspection to supervise the car inspectors.

The 46 Managers of car inspection proposed by NS are an unnecessary layer of management whose duties of assignment, and coordination with contractors and others are capably handled by DuPont's car foreman on duty with the car inspectors for each shift. Each of DuPont's car inspection teams is comprised of one car foreman, with all additional team members being car inspectors. DuPont's "hands on" car foremen perform the same duties as NS's 46 car managers and, at the same time, provide car inspections rather than merely adding

an unnecessary layer of management as does NS's approach The car foremen and car inspector positions are staffed 24 hours per day, 7 days per week by DRR.

NS assumes the DRR cannot successfully determine disposition and subsequent repair of failed on-line equipment without the 22 additional line of road carmen along with their own wheel change trucks, or block trucks Given that the DRR is not encumbered by union rules, as is NS, these claims are unreasonable The initial inspection and determination process requires timely action by an on-line manager, usually a Manager-Field Operations, in coordination with his respective Director-Car Services. Further, DRR has contracted the work involved in line-of-road repair activities with its car maintenance contractor and has included the costs accordingly.

NS also claims DuPont's two Directors of Car Services, plus 269 Car Inspectors will not suffice. NS attempts to support this claim with different reasoning DuPont will discuss NS's various claims below:

First, NS claims "nothing was provided to cover locomotive line of road defects and repairs "[65] Contrary to NS's allegation, in the event a locomotive requires immediate repair and/or has to be set out, contract mechanical forces are dispatched by a DRR manager to make repairs

Second, NS claims "[t]he DRR did not provide for time and delays to trains related to FRA inspections, which are regular occurrences in daily operations "[66] While FRA inspectors try to avoid making inspections which delay trains, it is a real-world reality. As fully discussed in Part III-C, DuPont has accounted for such delays to DRR operations in its RTC simulation along with other identifiable and reasonable delays and track outages

[65] *See* NS Reply e-workpaper "DRR Car Inspection docx "
[66] *Id*

Third, NS claims "[t]he DRR assumes that at locations with 1 to 3 trains requiring inspection, the train crew will perform this service; for 4 - 6 trains, 2 car inspectors are required; the maximum is for 18 trains, 8 car inspectors are required. NS also claims that DRR provided no consideration for train size (i e. railcar counts) in the inspection assumptions "[67] Contrary to NS assertion, DuPont's inspector assignments assume that the DRR has one inspector on duty where 3 trains are to be inspected, and where 1 or 2 trains require inspection, the respective train crew will perform the required inspection Usually these trains are small to mid-size, meaning 30 to 60 cars in total. Where 4-5 trains require inspection, two (2) car inspectors are required. Where 6 trains are inspected, three car inspectors are required. Where 18 trains require inspection, DRR has nine (9) inspectors (one serves as lead foreman/manager at that location).

Fourth, NS claims "Car Inspectors are required to undergo quarterly training, with one annual training session being full day," and that "[s]ome of this is not accounted for in the DRR proposal "[68] DRR is in agreement with NS's comments regarding timely training of Car Inspectors as mandated by the FRA's "Federal Power-Brake Law," as defined in CFR Title 49, Part 232, Subpart C. Contrary to NS's statement, DuPont has provided for both initial and ongoing training of inspectors in its Opening evidence and also in its Rebuttal evidence.[69]

Fifth, NS claims "[t]he DRR only has car inspectors at 15 locations." and there are "18 terminals where DRR is going to permit train crews to do the train inspections/brake tests."[70] NS also says "the DRR is providing car inspector services at less than 50% of the terminals that they are operating."[71] DuPont agrees with NS that certain terminals should be staffed with qualified

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[67] *Id.*
[68] *Id.*
[69] *See* DuPont Opening workpaper "DRR Operating Expense Errata.xls" and DuPont Rebuttal workpaper "DRR Operating Expense_Rebuttal.xlsx"
[70] *Id*
[71] *Id.*

car inspectors to ensure that cars being inspected by train crews receive more than a typical brake test and FRA Appendix D inspection. In Rebuttal, DuPont accepts NS's approach of having inspectors available to inspect all originating trains with more than 25 cars, all originating local trains and all through trains requiring additional inspections. In Rebuttal, DuPont has assigned 377 car inspectors (71 of these inspectors are car foremen discussed above) at 47 locations on the DRR to inspect trains using these criteria. In contrast, NS has assigned inspectors at only 29 locations, with 15 other locations covered by "Line of Road Carmen for a total of 44 locations."

In Rebuttal, DuPont has increased the Equipment Inspection staff to a total of 377 foremen and inspectors,[72] which is completely adequate to meet the DRR's needs. NS's staffing is overstated.

iii. Operations Support Department

NS claims that "[t]here are a variety of other positions required to support the operating functions of a Class I railroad, which DuPont has failed to make adequate provision for. These functions include Budgeting, Joint Services, Service Measurement, Service Design; Safety and Training; Terminal Management; Damage Prevention and Claims; and Car and Train Reporting."[73] This is yet another example of duplicative and unneeded forces. Based on Mr. McDonald's experience, the functions mentioned here are all adequately accounted for in DuPont's evidence and is discussed below.

(1) Operations Service and Support (OSS)

NS identifies an OSS department which is responsible for car and train reporting and all activities related to the first and last mile of the car movement. These DRR functions are

[72] *See* DuPont Rebuttal e-workpaper "DRR Yard Matrix_Inspectors and Yard Crew Assignments.xlsx " All inspection teams have one Inspection foreman assigned to the team. The Inspection foremen perform the same function as NS's Car Managers, without adding an unnecessary layer of supervisory staff

[73] *See* NS Reply Exhibit III-D-1, p. 16.

covered by dispatchers, the customer service department, and the IT Department; there is no need for the additional staffing According to NS, "OSS staff communicates with DRR train crews, terminal personnel and customers. The customer communication function performed by OSS is not the same as what takes place in DRR's customer service department."[74] The claim that OSS functions are different from those in customer service is completely unreasonable. DRR's customer service department is staffed 24/7 and is responsible for all of the functions NS claims OSS is needed for

NS also claims "DRR [OSS] staffing should be comparable, on a scaled basis, to that of other Class I railroads" and attempts to base staffing on Class I railroads staff per million cars [75] This approach is completely unreasonable, as can be seen by the large disparity in staffing per million cars (numbers range from 10.4 to 95.7). This just shows that all railroads do this work differently and NS's approach is unreasonable.

(2) Service Design and Measurement

NS proposes one Director, four Managers, and ten Analysts for the Service Design and Measurement functions who would be responsible for "Train Plan Design, Long-Term Planning, Seasonal Planning, Contingency Planning and Disaster Recovery Planning".[76] There is no need for the 15 employees proposed by NS The functions NS claims the Service Design and Measurement staff would be responsible for are all covered by the Operations Planning staff proposed by DuPont The Service Design and Measurement staff proposed by NS merely leads to overlapping responsibilities and is not how an efficient railroad operates

[74] *See* NS Reply Exhibit III-D-1, p. 17.
[75] *See* NS Reply Exhibit III-D-1, p. 17
[76] *See* NS Reply Exhibit III-D-1, p 19-20

(3) Equipment Planning and Distribution

In Reply, NS adds a Director and five (5) Managers of Equipment Planning and Distribution to the DRR non-train operating personnel staff NS states these employees make sure that the DRR has the right equipment available to meet customer demand for equipment. By evaluating long-term leases and short term leases and scheduling equipment maintenance. NS's basis for the addition of these six employees is that NS has {{[redacted]}} employees providing these services on its system.[77]

The addition of the Equipment Planning and Distribution personnel by NS duplicates, in part, duties performed by the Manager – Car distribution and seven (7) Car Distributors included in the DRR staff by DuPont in Opening. The equipment management personnel provided by DuPont provide maintenance planning and planning for equipment needs and distribution of available cars to customers in a timely fashion.

(4) Damage Prevention and Freight Claims

NS claims that the DRR will need a staff of two Managers and nine field representatives for "(1) investigation and negotiation of freight claims filed by customers, (2) response to derailments and other incidents to protect the DRR and its customers' interest including transload and salvage, (3) working with customers on proper loading practices; and (4) responding to customer questions."[78] This staffing is completely unnecessary. DuPont has staffed the DRR Law Department with a Director of Claims and two Managers of Claims, as well as outsourced claims investigations There is no need for extra staff who will be responsible for investigating claims filed by customers. There is also no need for staff who will be responsible for customer

[77] *Id*, p. 20.
[78] *See* NS Reply Exhibit III-D-1, p. 21

questions. The DRR's Customer Service Department will be more than capable of handling any customer inquiries.

d. Non-Train Operating Personnel Compensation

Most of the difference between DuPont and NS in the compensation of non-train operating personnel is accounted for by the difference in the number of employees proposed by the parties for various classes of Operating personnel [79]

As NS notes, DuPont relied largely on data from NS's Wage Forms A and B in developing employee compensation levels.[80] NS states that it accepts DuPont's proposed compensation levels (per employee) in large measure, except for two groups of employees. T&E employees and Executives. However, NS also proposes much higher compensation levels for the Vice President–Transportation, Vice President–Mechanical and Vice President– Engineering. Each of these categories is discussed below.

i. Vice Presidents

With respect to the three Vice Presidents included in the DRR's Operating personnel, the parties' compensation amounts differ substantially As fully discussed below under General and Administrative compensation, the difference between the parties compensation for Vice Presidents is related to NS's inappropriate inclusion of stock options, option awards and other forms of compensation which the Board has historically rejected.[81] On Rebuttal, DuPont continues to rely on compensation for Vice Presidents as previously accepted by the Board.

ii. Fringe Benefits

As discussed, *supra*, with regard to T&E personnel fringe benefits, DuPont relied on a 37.5 percent fringe benefit ratio in Opening based on information published by the AAR. In

[79] A comparison of the total compensation proposed by DuPont for its Operating personnel (other than MOW personnel), including salaries and benefits, is shown in Table III-D-7 on page III-D-43 of NS's Reply

[80] *See* NS Reply, p III-D-35

[81] *See WFA/Basin*, p. 49 and *Outer Tail*, p. C-12

Reply, NS argues a 49 2 percent fringe benefit ratio is appropriate based on a three year average of NS and CSXT's experience As explained previously, NS's proposed ratio is inappropriate as it results in a double count operating expenses and is therefore unnecessarily high. DuPont continues to rely on a 37.5 percent fringe benefit ratio which is supported by BNSF's and KCS's actual experience in 2009

e. Materials, Supplies and Equipment

NS states in its Reply that is accepts DuPont's proposed unit costs for the various materials, supplies, and equipment necessary for DRR employees as adjusted to reflect NS's proposed increase in personnel for the DRR.[82] In Rebuttal, DuPont continues to rely on the same materials, supplies and equipment used in Opening and accepted by NS in Reply adjusted for the changes in DRR personnel described in this Rebuttal evidence.

4. General and Administrative

On Opening, DuPont included a general and administrative ("G&A") department comprised of 213 individuals, as well as G&A costs of $57 6 million. NS more than tripled DuPont's Opening G&A staffing to a ridiculous level of 825 personnel, which is the largest staffing ever proposed by a carrier in a SAC case, and is completely unnecessary The staffing level proposed by NS completely ignores the fact that DRR is a new, startup railroad that will not be faced with many of the same costs and burdens as an existing railroad that was established over time and has been through many different mergers and acquisitions.

Along with NS's excessive staffing level comes an increase of G&A expenses to $172.2 million Much of the difference in the parties' G&A expenses is due to NS's excessive staffing, outsourcing costs, as well as start-up costs. The overall annual G&A expense estimates provided by the parties are shown in Table III-D-6 below.

[82] *See* NS Reply, p. III-D-172.

Rebuttal Table III-D-6
DuPont Opening, NS Reply and
DuPont Rebuttal 2010 G&A Expense
(S in millions)

Source	2010 G&A Expense
(1)	(2)
1. DuPont Opening	$57 6
2. NS Reply	$172 2.
3. DuPont Rebuttal	S 77 4

Source. DuPont e-workpapers "DRR Operating Expense_Errata xlsx," "DRR Operating Expense Reply.xlsx" and "DRR Operating Expense_Rebuttal.xlsx."

The G&A expenses for the DRR have been developed on the basis of the experience of DuPont's witnesses McDonald, Hunter, Kruzich, and Burris. Mr. McDonald in particular has held a number of senior management positions at Class I railroads and has 35 years of experience in railroad operations, engineering, and management. Mr. Hunter also has extensive experience, 36 years, in management and has been involved in several railroad mergers.

DuPont's other two (2) G&A witnesses include Mr Kruzich, who has 38 years of experience in railroad accounting, executive administration, and information technology, and Mr Burris, who has more than 30 years of consulting experience related to railroad economics.

a. Staffing Requirements

As discussed above, Mr. McDonald has extensive experience in dealing with Class I railroads. Mr. McDonald spent a large portion of his career with C&NW, a railroad very similar in size to DRR. C&NW was a very cost effective, efficient railroad, much like that of the DRR. Table III-D-7 below summarizes how similar DuPont's G&A managerial staff is to C&NW, as well as how different and excessive NS's managerial staffing is:

Rebuttal Table III-D-7
Comparison of C&NW G&A Staffing
With DuPont and NS

Department	1993 C&NW	DuPont Rebuttal	NS Reply
(1)	(2)	(3)	(4)
1. Executive	4	3	14
2. Finance & Accounting	29	34	81
3 Marketing	89	56	137
4 Law & Admin	37	27	64
5 IT	6	13	22
6. Subtotal	165	133	318
7. Non-managerial	-	97	507
8. Total (excludes Directors)	165	230	820

Source: Rebuttal workpaper "C&NW G&A 1993 pdf"

Looking at the above table, it can be seen that NS's managerial staff is more than twice that of C&NW's Given the advances in technology over the last 20 years, there is no reason DRR should be staffed with that proposed by NS

i. Executive Department

In its Opening Evidence, DuPont proposed an Executive Department consisting of four (4) individuals headed by the President (supported by an Administrative Assistant). The department also includes two (2) Directors of Corporate Relations who are responsible for community and government relations and report directly to the President.

On Reply, NS creates a much larger Executive Department comprised of sixteen (16) individuals.[83] NS's proposal is completely unnecessary DuPont believes the four person department submitted in Opening will be more than enough to handle the daily responsibilities of a privately held company such as DRR.

[83] *See* NS Reply, pp III-D-77-84

ii. Board of Directors

In its Opening Evidence, DuPont proposed a ten (10) person Board of Directors consisting of the President, Vice President-Operations, Vice President-Finance, Vice President-Traffic, Vice President-Law, and five (5) outside directors DuPont maintains the DRR ten (10) person Board of Directors, but has increased the outside directors to seven (7). DRR's Board of Directors now consists of the President, Vice President-Operations, Vice President-Finance, two (2) representatives from DRR, two (2) representatives from the Investment Group, and three (3) Independent Directors.

iii. Marketing & Customer Service Department

In its Opening Evidence, DuPont proposed a Marketing & Customer Service sub-department comprised of 50 individuals, as well as costs for Marketing outsourcing NS increased the staffing for Marketing & Customer Service to between 202 and 206 employees, and also rejected DuPont's outsourcing.[84]

DuPont acknowledges that Marketing outsourcing costs were left out of Opening and will not be outsourcing any Marketing related functions. However, DuPont does not agree with NS's excessive staffing and does not accept the changes proposed by NS. DuPont has added thirteen (13) employees to the Marketing & Customer Service Department and believes this is more than enough to handle the everyday functions for DRR, and will also make up for the outsourcing costs left out of Opening.

iv. Finance & Accounting Department

In its Opening Evidence, DuPont proposed a Finance and Accounting Department consisting of 66 employees and separated into four separate functions 1) Executive/Treasury; 2)

[84] *See* NS Reply, p. III-D-76 (showing Marketing staff of 140) and III-D-98 (showing a Marketing staff of 136) and III-D-102 (Customer Service staff of 66)

Controller; 3) Budget/Purchase, and 4) Internal Auditing.[85] NS increases the Finance & Accounting Department staffing to a level that is four times that of DuPont's Opening, 289 individuals. NS's proposal is completely unnecessary and not how an efficient Class I carrier operates DuPont has added one position (Manager of Financial Planning) to the DRR Finance & Accounting Department for a total of 67 employees.

v. Law and Administration Department

On Opening, DuPont proposed a Legal & Administrative Department consisting of 42 employees. On Reply, NS proposes a much larger Legal & Administrative Department made up of 232 individuals, more than five times the staffing proposed by DuPont on Opening This increase is due largely to NS's police staff, as well as the rejection of Claims outsourcing.

DuPont continues to outsource claims and stands by the police staff submitted in Opening. The excessive special agents proposed by NS are unreasonable and should be rejected. DRR's on-line operating work force will constantly be on alert for anything requiring the assistance of police and DRR will be able to call in local police forces should a situation arise

vi. Information Technology

In its Opening Evidence, DuPont proposed an IT department consisting of 46 individuals NS accepted DuPont's method for addressing IT staffing and proposed an IT department made up of 78 employees [86] DuPont believes this increase is unnecessary. DRR will be equipped with the newest technology and advancements, and will not have to balance between older technologies and the implementation of new technologies, such as NS DRR will also not be responsible for developing its own software, given the abundance of software programs available for railroads such as DRR.

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[85] *See* DuPont Opening Exhibit III-D-2, pp. 3
[86] *See* NS Reply, pp III-D-160-162

DuPont has increased IT staffing to 51 on Rebuttal This will be more than sufficient given the quality of technology and personnel in today's market

b. Compensation

NS accepted DuPont's use of NS's Wage Forms A and B to calculate employee compensation. However, NS did not accept DuPont's approach of only including salaries and bonuses for the President, Vice Presidents, and Marketing Managers. DuPont stands by this approach and does not believe that stock awards, stock options, non-equity incentive plan compensation, and "all other compensation" should be included when calculating the total compensation for these positions. The DRR is a new startup railroad and should not be forced to overpay employees prior to its establishment.

c. Material, Supplies, and Equipment

NS accepts DuPont's proposed unit costs for the materials, supplies and equipment needed by the DRR's employees. The revised employee count on Rebuttal requires a corresponding revision in the total expenditure for materials, supplies and equipment.[87]

d. Other

i. IT Systems

DuPont's expert witness Kruzich was responsible for developing the DRR's IT systems Much of the technology provided (94 percent of IT Operating Cost) is through RMI outsourcing. DuPont's IT systems are very similar to those used by other Class I railroads and will allow DRR employees to work efficiently and effectively.

The total Capital and Operating Costs for IT and Communications Systems proposed by NS in Reply are more than three times that of DuPont's Opening costs. DuPont has made adjustments to the costs submitted in Opening and has increased the DRR Capital and Operating

[87] *See* DuPont Rebuttal e-workpaper "DRR Operating Expense_Rebuttal xlsx" for details.

Costs Based on the DRR operating plan and G&A staff departments, the capital requirements for IT and communications systems equal $26,090,841. The annual operating cost for IT and related communications equals $30,557,474.The expenses associated with IT systems are shown in Table III-D-8 below

Rebuttal Table III-D-8
DuPont Opening, NS Reply and DuPont Rebuttal
Capital And Operating Costs For DRR IT and Communications Systems

		DuPont Opening		NS Reply		DuPont Rebuttal	
	Item	Capital Cost	Operating Expense	Capital Cost	Operating Expense	Capital Cost	Operating Expense
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	IT	$10,624,960	$24,883,951	$86,743,510	$31,723,904	$26,021,565	$29,684,936
2	Communications	$67,168	$760,338	$286,170	2,136,291	$69,276	$872,539
3	Total	$10,692,128	$25,644,290	$87,029,680	$33,860,195	$26,090,841	$30,557,474

Source "DRR – Capital Budget.xls," "DRR – Operating Budget.xls," "DRR Operating Expense Reply.xlsx " tabs, "IT Operating" and "IT Capital," DRR – Capital Budget–Rebuttal – Final," and "DRR – Operating Budget–Rebuttal – Final."

The DRR's computer and IT communications systems are fully described in Exhibit III-D-1

e. Other Out-Sourced Functions

The DRR will be able to outsource several of the functions that large railroads, such as NS, normally conduct in-house. Consistent with the stand-alone concept of an efficient, least-cost railroad, out-sourcing is used wherever the economics so justify without sacrificing the SARR's feasibility or service quality.

The functions DRR will be out-sourcing include. 1) Payroll Processing, 2) Internal and External Auditing; 3) Claims; 4) Tax preparation; and 5) Outside Counsel. Estimated annual costs of $12 1 million have been developed for outsourcing all of the functions described above.[88]

[88] *See* DuPont Rebuttal e-workpaper "DRR G&A Outsourcing_Rebuttal xlsx" for details.

f. Start-up and Training Costs

On Reply, NS accepts DuPont's calculations of the average cost to train individual employees, but makes three adjustments: 1) NS adjusts total training costs to incorporate additional staff, 2) NS uses its incorrect fringe benefit ratio of 49.2 percent; and 3) NS modifies DuPont's attrition rates DuPont's position on each adjustment is discussed in Exhibit III-D-1.

g. Bad Debt

On Reply, NS assumes DRR will not receive 100 percent of the revenue it bills to customers and will experience a write down of doubtful accounts. DuPont accepts the inclusion of Bad Debt in Rebuttal, but does not accept NS's uncollectible amount of 0.05 percent of revenue.

NS calculates this percent by using the bad debt of all Class I carriers from 2007 through 2011. Instead, DuPont uses NS's uncollectible accounts for the time period 2009 through 2011. DuPont bases this on the fact that 2007 and 2008 are prior to the start of the railroad. DRR should also not be responsible for the bad debt of all Class I carriers NS's benchmark of all Class I carriers is merely a way for NS to hide the fact that NS's uncollectible accounts is below the average

In short, DuPont agrees bad debt should be included as an expense and has used NS's real-world uncollectible accounts as a percentage of revenue for the time period 2009 through 2011, which equals 0.01 percent of revenue, or $786,599.

5. Maintenance-of-Way

On Opening, DuPont included a maintenance-of-way ("MOW") department comprised of 1,006 individuals. The MOW plan for the DRR was developed by DuPont's expert railroad engineering witness, Harvey Crouch. It was also reviewed and approved by Mr McDonald, DuPont's rail operations expert, who, as discussed above, has engineering and operating

experience with NS's predecessors NS claims DuPont's plan is "patently insufficient to serve DRR's needs and is far less extensive than the MOW workforces that the Board has approved in recent SAC cases.[89] NS proposes a MOW staff of 2,133.[90] A comparison of the parties' MOW staffing is provided in Table III-D-9 below.

Rebuttal Table III-D-9
DuPont Opening, NS Reply and DuPont Rebuttal MOW Staff

	Source	MOW Staff
	(1)	(2)
1	DuPont Opening	1,006
2	NS Reply	2,270
3	DuPont Rebuttal	1,050

Source: "Exhibit III-D-3 DRR MOW errata xls," "Exhibit III-D-3 NS DRR MOW xlsx" and "Exhibit III-D-2 MOW xls"

While Mr. Crouch has designed the MOW plan specifically for a brand new DRR system with no track or bridge defects, NS has designed a MOW plan for the existing NS system that will more than double the MOW staff proposed by DuPont on Opening. To compare the new DRR system with NS's existing system, that was laid may years ago, is completely unreasonable. Costs for maintaining a newly constructed system will be considerably lower than costs for an older, aging track system. Mr. Crouch's plan has a substantial field staff to perform day-to-day inspection and maintenance activities

NS's experts argue that DuPont's staffing does not conform to past cases in terms of MOW staff-to-track miles. NS claims "DuPont's proposed DRR MOW workforce is vastly smaller on a track-mile basis than MOW workforces accepted by the Board "[91] NS's attempt to

[89] *See* NS Reply, p III-D-198.
[90] *Id*, p III-D-199
[91] *Id*, p. III-D-198.

compare DRR with past SARR cases based on MOW staff-to-track miles is infeasible There are many reasons for the difference in DuPont and NS's staff-to-track mile ratio when comparing to previous SARR's. Some of these reasons will be discussed below.

First, the DRR is the largest SARR brought before the Board, and has economies of scale not seen before. The DRR's economies of scale include a reduction in the number of managers needed, elimination of unnecessary layers of management, and more efficient territory sizes and related staffing.

Second, DRR is divided into four Divisions of approximately 1,800 route miles each This, coincidentally, happens to match the average size of existing NS divisions based on route miles, and because there are only four divisions, fewer upper level managers are required Also, because the division size works out to average 1,800 miles, there is little overlap in responsibilities and duties among Roadmaster territories and work crews – they are appropriately sized without being overstaffed.

Third, NS has added three departments that are completely unnecessary: 1) Construction, 2) Industrial Development; and 3) Technical Services Group NS has also added many different layers of management, including Assistant Vice President's, Managers, and Supervisors. There is absolutely no reason to add these departments or positions. NS's only possible reasoning behind such additions is the extra employees that will be added to the DRR, which will lead to higher MOW costs.

Fourth, NS's experts arbitrarily doubled the number of work crews based on their roughly doubling the number of Roadmasters. This was a quick way, although unexplained, unsupported, and unrealistic, to achieve a higher number of MOW employees. This also

artificially increased the need for supervision and management. NS also increased the number of MOW employees by adding more infrastructure, and related maintenance needs

In summary, NS failed to provide adequate reasoning or evidence for the additional, unnecessary MOW staff and departments. DuPont stands by its Opening MOW staffing and equipment configurations and maintenance needs for the DRR with minor changes DuPont's staffing will be more than capable of handling the MOW tasks required for the DRR, and NS's excessive staffing is not how an efficient Class I railroad would operate. DuPont's changes, along with NS's reply, are discussed in length in Exhibit III-D-2. A comparison of the parties' 2009 MOW expenses is provided in Table III-D-10 below.

Rebuttal Table III-D-10
DuPont Opening, NS Reply and
DuPont Rebuttal 2009 MOW Expense
($ in millions)

Source	2009 MOW Expense
(1)	(2)
1 DuPont Opening	$156.6
2. NS Reply	$377 1
3. DuPont Rebuttal	$156.9

Source: "Exhibit III-D-3 DRR MOW errata.xls," "Exhibit III-D-3 NS DRR MOW xlsx" and "Exhibit III-D-2 MOW xls"

6. Leased Facilities

In Opening, DuPont listed thirty two (32) separate locations where the DRR "steps into the shoes of NS" and utilizes existing joint use, trackage rights, haulage rights, and switching agreements DuPont included $42.3m operating expenses for 818 87 miles.[92] On Reply, NS criticizes DuPont's use of joint use, trackage rights, haulage rights, and switching agreements,

[92] *See* DuPont Opening e-workpapers "DuPont Joint facility charges.xlsx" and "DuPont RR Route Miles Opening Grading errata xlsx "

and revises the operating expense to $74.0 million for 810.03 miles.[93] In response to NS's criticisms, DuPont makes limited changes to the calculations of joint use, trackage rights, haulage rights, and switching expenses for 29 of the 32[94] separate locations, and includes $58.9 million in operating expenses for 817.56 of trackage rights miles[95] on rebuttal.

In Reply, NS listed four general areas where DuPont supposedly erred in calculating joint use, trackage rights, haulage rights, and switching expenses. DuPont responds to each of NS's arguments below.

a. Misapplied Fees

In Reply, NS argues that DuPont misapplied fees in four different ways each of which are discussed below.[96]

i. Car Counts

In Reply NS accepts DuPont's calculation of fees for many of the 32 trackage rights segments, but takes issue with DuPont's determination of the amount of traffic moving over the trackage rights segment. In NS's Reply text, it identifies only the CP/D&H segment between Binghamton, NY and Rouses Point, NY as an illustration of miscounted trains, cars or car miles in application of the trackage rights fees. However, in its workpapers, NS identifies 11 segments with incorrect traffic counts. Each of these segments are listed below SH Tower to East St. Louis, IL (NS Trackage Segment No. 5)

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[93] *See* NS Reply e-workpapers "Trackage Rights Costs NS Reply.xlsx" and "DuPont RR Route Miles Opening Grading errata Reply.xlsx."

[94] Three locations did not change at all from DuPont's Opening. The three locations are: (1) CN/IC Connection, LA to CN Mays Yard, LA (NS Trackage Segment No. 12); (2) Wauhatchie, TN to Stevenson, AL (NS Trackage Segment No. 13), (3) Black Rock, NY and Fort Erie Yard, ON (NS Trackage Segment No. 25). NS included operating costs for the Black Rock, NY and Fort Erie Yard, ON segment which DuPont rejects as NS has not provided any documentation as support for its claim. The three segments listed above accounted for $4,674,909 in operating expenses in Opening, $4,701,311 in Reply and $4,674,909 in Rebuttal. See DuPont rebuttal e-workpaper "Trackage Rights Costs DuPont Rebuttal.xlsx."

[95] *See* Dupont Rebuttal e-workpapers "Trackage Rights Costs DuPont Rebuttal.xlsx" and "DuPont RR Route Miles-Rebuttal Grading.xlsx."

[96] *See* NS Reply, pp. III-D-270-272.

a. Hobson Jct., OH to Conco, OH (NS Trackage Segment No 10)
b. Ivorydale Jct , OH to Winton Place, OH (NS Trackage Segment No. 11)
c. Argo, IL to Provo Jct., IL (NS Trackage Segment No. 17)
d. Provo Jct , IL to Proviso Yard , IL (NS Trackage Segment No. 18)
e. Riverdale, IL to Blue Island Yard, IL (NS Trackage Segment No. 20)
f. Binghamton. NY to Rouses Point, NY (NS Trackage Segment Nos. 21 and 22)[97]
g. Hoffmans, NY to Mechanicville, NY (NS Trackage Segment No. 23)
h. Buffalo (CP Draw), NY to Black Rock, NY (NS Trackage Segment No. 24)
i CP Arsenal, PA to CP River, PA (NS Trackage Segment No. 27)
j. Kalb / SEPTA (HN 17.15), PA to Ford, PA (NS Trackage Segment No 28)

DuPont has reviewed the traffic moving over each of these segments and revised the traffic counts based on information contained in the Rebuttal Base Year train list. The calculations of expenses for the following 11 locations are revised in Rebuttal solely due to the number of cars, trains or car miles utilizing each of these trackage rights segments in Rebuttal. These 11 segments listed above accounted for $13 3 million in operating expenses in DuPont's Opening and are revised to equal $14.4 million in operating expense in Rebuttal.[98]

ii. Terminal Railroad of St. Louis

In Opening, DuPont included $3.8 million in trackage right fees for use of trackage rights segments over the Terminal Railroad of St. Louis ("TRRA"). In Reply, NS argues that there are two separate fees for use of TRRA lines in St. Louis, a trackage right fee and a switch fee While NS accepts the trackage rights fee DuPont included in Opening, it argues that a switch fee of $106 should be charged for all cars moving over the May Street Interlocking to WP Interlocking. NS applies the fee to 23,085 cars moving between the DRR and its connecting carriers

[97] NS lists this segment in its text on page III-D-270 and in response DuPont has modified the trains and all necessary operating expenses for shipments going to/from Rouses Point, NY *See* DuPont Rebuttal e-workpaper "Base Year Train List_Statistics_Rebuttal xlsx," tab "Base Year Statistics" rows 595, 930 and 1120

[98] *See* DuPont Rebuttal e-workpaper "Rebuttal Trackage Rights Costs xlsx."

In Rebuttal, DuPont conceptually accepts the May Street to WP Interlocking fee, but rejects NS's calculation of that fee for two reasons. First, the $106 switch fee applied by NS is at the 4Q2012 price level. As the DRR Base Year starts in June 2009 the appropriate switch fee is the 2Q2009 price level which equals $99 per car. Second, NS applies the switch fee to 3,233 cars the DRR interchanges to UP and BNSF and 19,852 cars the DRR receives from UP and BNSF. In Rebuttal, DuPont applies the $99 per car charge to the 3,233 cars forwarded to BNSF and UP as it is BNSF and UP's responsibility to pay for cars forwarded to the DRR. In Opening, DuPont included $640,494 in operating expenses for fees paid to TRRA and in Rebuttal DuPont includes $1,095,516 in fees paid to TRRA.[99]

In addition to the trackage right fees, NS argues that it is a 14 29 percent owner of TRRA and therefore the stand-alone cost calculations must include 14.29 percent of the construction costs of the TRRA lines used by the DRR. As fully discussed in Part III-F-13, DuPont disagrees with the construction cost additive for TRRA lines and does not include them in determination of the DRR capital cost

iii. Conrail Shared Asset Areas

The DRR traverses three (3) line segments that are part of NS's portion of the former Conrail lines that are shared with CSXT. These three line segments located in North New Jersey, South New Jersey/Philadelphia and Detroit areas are comprised of a total of 69.7 route miles of the total of 514 miles in the Conrail Shared Asset Areas ("CRSA"). In 2009 NS paid at total of $123.0 million in fees to use the entire CRSA. NS argues that the DRR is responsible for 24 percent of the $123.0 million NS paid in 2009 to Conrail for usage of these three line segments. NS derives the 24 percent based on the number of carloads originating or terminating

[99] *See* DuPont Rebuttal e-workpaper "Rebuttal Trackage Rights Costs xlsx."

on these lines as a percent of the total NS carloads originating or terminating on the 514 miles of the CRSA.

In Rebuttal, DuPont accepts use of the $123 0 million fees NS paid in 2009 to Conrail; however, DuPont rejects NS's 24.0 percent allocation factor as it is based on waybills rather than route miles used. The DRR only operates over 69.7 miles of the shared asset area of the total 514.0 route miles of the CRSA, or 13.6 percent of the total route miles, and therefore allocates 13.6 percent of the $123.0 million in fees to the DRR

Three trackage right segments are impacted by a change in the calculation of joint use expenses for segments within the CRSA. The expense for the DRR would be equal to 13.6% of the $123 0 million incurred by NS in 2009 related to the CRSA, or $16.7 million.[100] These three trackage rights segments accounted for $3 7 million in operating expenses in Opening and $16.7 million in Rebuttal.[101]

In addition to the trackage right fees, NS argues that it is a 58 0 percent owner of the CRSA, and therefore the stand-alone cost calculations must include 58.0 percent of the construction costs of the CRSA used by the DRR As fully discussed in Part III-F-13, DuPont disagrees with the construction cost additive for CRSA and does not include them in determination of the DRR capital cost

iv. Belt Railway Company of Chicago

In Opening, DuPont estimated the BRC track miles used by the DRR and used this information to develop a trackage rights cost per mile for use of the BRC applied to DRR cars using these miles In Reply, NS argues that the DRR would replace NS in the use of the BRC

[100] *See* NS 2009 R-1, page 10, 69.7 DRR route miles divided by 514 CRSA route miles (*See* Finance Docket No 33388, CSX/NS filing No, 18, pp. 46-49 Copy included in DuPont Rebuttal e-workpaper "CSX NS 18 pages 46 through 49 pdf.")

[101] *See* DuPont Rebuttal e-workpaper "Rebuttal Trackage Rights Costs xlsx "

over the entire portion of the BRC that NS uses. NS argues that the DRR would therefore owe BRC the full amount of the payment NS makes to the BRC.

In Rebuttal, DuPont accepts NS's argument relating to the BRC payment and adopts the NS approach in calculating expenses for the following three locations:

1 Pullman Jct. (W South Chicago Yard), IL to Rock Island Jct. (E. South Chicago Yard), IL (NS Trackage Segment No. 14)
2 Belt Jct., IL and Argo, IL (NS Trackage Segment No. 16)
3 East End, IL and Cicero, IL (NS Trackage Segment No. 19)

In Opening, DuPont included $95,977 in operating expenses for use of the BRC track and includes $1,798,890 in Rebuttal[102].

In addition to the trackage right fees, NS argues that it is a 25.0 percent owner of the BRC, and therefore the stand-alone cost calculations must include 25.0 percent of the construction costs of the BRC As fully discussed in Part III-F-13, DuPont disagrees with the construction cost additive for BRC and does not include them in determination of the DRR capital cost.

b. Improperly Routed Traffic

NS argues in Reply that DuPont improperly routed certain traffic in Chicago over trackage rights lines on the Calumet City, IL to Riverdale, IL (NS Trackage Segment No. 1) segment, the Chicago (Burnham), IL to Pine Jct., IN, (NS Trackage Segment No. 15) segment and the Riverdale, IL to Gibson City, IL (NS Trackage Segment No. 2). NS states that these segments cannot be used as assumed by DuPont and instead the DRR must construct the NS line segment between Ashland Avenue and Ogden Junction and also use the IHB segment from CP509 to Pullman Junction to connect with CN and gain access to CN's Riverdale to Gibson City line.

[102] *See* DuPont Rebuttal e-workpaper "Rebuttal Trackage Rights Costs xlsx "

In Rebuttal DuPont accepts these changes to the routing in Chicago, and has eliminated use of CSXT's Calumet to Riverdale line. In addition, the trackage rights fees have been adjusted to reflect the Rebuttal car counts. These three trackage rights segments accounted for $66 2 million in operating expenses in Opening, and equal $7 0 million in Rebuttal.[103]

c. Construction of Chicago Area Track

As stated above and discussed in Part III-B and Part III-F, DuPont constructs NS's line segment between Ashland Avenue and Ogden Junction in Rebuttal.[104]

d. AMTRAK Segments

The DRR operates over three trackage rights segments owned by AMTRAK. These include, 1) Perryville, MD to Ragan, DE (NS Trackage Segment No 9), 2) Edgemoor/Bellevue, DE to Philadelphia Arsenal, PA (NS Trackage Segment No. 26); and 3) Perryville, MD to Baltimore Bayview Yard, MD (NS Trackage Segment No 30)

The trackage rights fees for these lines is based on axle miles, and in Opening, DuPont calculated the trackage right fee on that basis; however, it erred in using only railcar truck miles per car in its calculations rather than axle miles.

In response to NS's calculations in Reply, DuPont has modified its calculation of operating expenses for the three AMTRAK locations in Rebuttal to properly use axle miles as the measure of usage. In Rebuttal, DuPont also accepts NS car count methodology in revising the count for these trackage rights segments.

In Opening, the trackage rights fees for these three segments accounted for $13.6 million in operating expenses in Opening. In Rebuttal the fess for these three segments equals $13.2 million.[105]

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[103] *See* DuPont Rebuttal e-workpaper "Rebuttal Trackage Rights Costs xlsx "
[104] *See* DuPont Rebuttal Section III-B

e. Mathematical Error

In Rebuttal, DuPont has corrected the mathematical error found in the calculation of trackage rights and haulage expenses for the following three locations:

1. Hardin, MO to MP S228, MO (NS Trackage Segment No. 3)
2. CP 437, NY to Frontier Yard, NY (NS Trackage Segment No 24a)[106]
3. Pregnall, SC to Giant, SC (NS Trackage Segment No. 31)[107]

The three segments listed above accounted for $86,854 in operating expenses in Opening and account for $119,943 in operating expenses in Rebuttal.[108] These revisions were made in response to NS's criticisms found in Reply Exhibit III-C-6 and e-workpaper "Trackage Rights Costs NS Reply xlsx."

7. Loss and Damage

NS has accepted DuPont's methodology for calculating the DRR's annual loss and damage expense.[109] However, NS points out that there was an error in DuPont's opening evidence related to calculation of the off-SARR miles used to allocate revenues between the DRR and NS. This issue is fully addressed in DuPont's Rebuttal in Part III-A. As the Loss and Damage expense are allocated on the basis of miles, in Rebuttal they have been adjusted to reflect the changes in off-SARR miles. Thus the DRR's loss and damage expense has also been revised.[110]

8. Insurance

On Opening, DuPont calculated the DRR's annual insurance cost using NS's 2009 insurance ratio of 1.96 percent of operating expenses (the latest available) to total expense

[105] *See* DuPont Rebuttal e-workpaper "Rebuttal Trackage Rights Costs xlsx."
[106] Rebuttal car counts were also utilized for this segment.
[107] Rebuttal car counts were also utilized for this segment.
[108] *See* DuPont Rebuttal e-workpaper "Rebuttal Trackage Rights Costs.xlsx."
[109] *See* NS Reply, p. III-D-276.
[110] The revised cost is shown in DuPont Rebuttal workpaper "DRR Loss and Damage_Rebuttal xls."

calculated from NS's R-1 annual report.[111] NS alleges that DuPont "pushes the boundaries of Board precedent" by proposing such a low insurance expense and showing that in previous proceedings the average insurance percent has been an average of 3.54 percent of other operating expenses.[112] NS then alleges DuPont somehow "cherry picked" the evidence and selected NS's 2009 actual expense of 1.96 percent. NS proposes that, rather relying on a single year's insurance expense from NS's own experience, a three year average is more reflective of real-world costs. NS uses its 2009 through 2011 insurance percent of 2.35 percent instead of the 1.96 percent that NS experienced in 2009 as used by DuPont

DuPont rejects NS's arguments for several reasons. First, the average insurance percent from the previous proceedings of 3.54 cited by NS reflects the insurance of many smaller stand-alone railroads where either short line or regional railroads or small Class I railroads[113] were the basis for the evidence, rather than the lower insurance expense experience of the Class I defendant such as NS in this proceeding. Second, examination of the 3.54 percent average insurance ratio, cited by NS, shows that many of the proceedings relied on are western coal cases When limiting the average insurance ratio calculation to the three eastern proceedings the insurance ratio drops to 2 5 percent, which is far more similar to the insurance ratio proposed by DuPont in this proceeding than the 3.54 percent cited in NS's Reply.

Finally, because DuPont proposes to use NS's own experience in 2009, NS's claim that is somehow is not a "real world" experience is wrong. Third, DuPont has hardly "cherry picked" the evidence by using NS's actual 2009 experience as reported in it R-1 Annual Report to the Board. Nearly all of the expenses presented by both parties in this proceeding are 2009 expenses

[111] *See* DuPont Opening, p III-D-24.
[112] *See* NS Reply, pp III-D-276-277.
[113] Including, for example, *AEP Texas, Otter Tail* and *WFA/Basin*.

and many of them are derived from NS's 2009 R-1 simply because the start date of the DRR operating is in 2009.

For example, NS has not objected to using the single year of 2009 expenses for items such as wage rates, locomotive maintenance, locomotive fuel consumption rates and loss and damage expenses Moreover, the insurance expense, along with the other operating expenses, is indexed to represent future years based on the hybrid index, which reflects change in operating expenses in the industry. To the extent NS's insurance expenses, or that of the industry as a whole were lower in 2009, the increase in future years is captured by use of the hybrid index in the DCF model.

In Rebuttal, DuPont continues to rely on the 1 96 percent insurance ratio developed from NS's 2009 R-1 Annual Report

9. Ad Valorem Tax

To calculate ad valorem taxes, DuPont calculated the amount of tax that NS paid per route mile in each of the twenty states in which the DRR operates and applied these amounts to the DRR's route miles in these jurisdictions.[114] NS accepts DuPont's methodology for five states (Delaware, New Jersey, New York, and Pennsylvania, Virginia), which use a version of the "summation" method for determining the market value to railroad property for tax assessment purposes, but rejects DuPont's methodology for fourteen of the fifteen remaining states,[115] which NS suggests use the "unit" method for valuing railroad property for tax purposes.[116] This increases the ad valorem tax from $56.7 million included by DuPont in Opening to the $84.2 million submitted by NS in Reply

[114] *See* DuPont Opening, p. III-D-24.
[115] The 20th state is Michigan where the ad valorem tax in 2009 was offset by tax credits, and therefore neither DuPont nor NS included an amount for ad valorem taxes
[116] *See* NS Reply, p. III-D-279

NS characterizes DuPont's method of calculating ad valorem taxes as "utterly devoid of any factual justification" and claims that DuPont's method "substantially understates the amount of ad valorem taxes that the DRR would be required to pay."[117] NS explains that "Most states tax railroad property as a function of a railroad's overall profitability as an enterprise – its 'unit value' – and a SARR that is more profitable than the incumbent railroad will pay more taxes as a result.... NS's reply evidence adjusts DuPont's ad valorem tax calculations to account for the higher ad valorem taxes that the DRR would incur in "unit value" states by virtue of being a least-cost, most efficient SARR with high income value."[118]

Intuitively NS's approach is suspect On the one hand, NS argues that the DRR claims that a SARR such as the DRR is a least-cost, most efficient competitor with a high net income and therefore should be expected to pay higher ad valorem taxes than NS, and yet on the other hand, NS's evidence concludes that the DRR's revenue is insufficient to cover the combination of its operating expenses and required return on investment. Stated differently, NS claims the proceeding should be dismissed because the DRR is shown to not be viable, and yet when ad valorem taxes are calculated, NS would have the Board believe that the DRR is a highly profitable entity that would necessarily pay higher ad valorem taxes to the states than does NS. Based on this alone, NS's arguments should be dismissed as it relates to ad valorem taxes

Assuming for the moment that NS's "unit" methodology is appropriate, NS's calculations are fatally flawed and must be rejected. NS's application of the Unit Method is as follows First, NS allegedly determines the net revenue from railway operations of the DRR on a per route mile basis and makes the same calculation for the NS system. Second, NS divides the DRR's net revenue ("NROI") per mile by the NS system net revenue per mile to calculate a "Unit Value

[117] *Id* It should be noted that the method employed by DuPont to calculate ad valorem taxes for the DRR is identical the method accepted by the Board in every previous stand-alone cost proceeding.
[118] *See* NS Reply, p. III-D-279.

Modifier." Third, the Unit Value Modifier, is multiplied by NS's existing ad valorem tax as allocated to the DRR using DuPont's mileage prorate method to yield the ad valorem taxes that the DRR would pay as a result of its high profitability from the traffic it has selected to move on the DRR system.[119]

In addition to the conceptual error in NS's method discussed above, NS's calculations are flawed in that their calculation of the Unit Value Multiplier is incorrect for two reasons. First, the calculations of the NROI for the DRR and for the NS system are not equivalent calculations. NS relies on the NROI for the NS system on the values shown in its 2009 R-1 Annual Report, schedule 210, line 67. This calculation equals net operating revenues less taxes on ordinary income and provision for deferred income tax. Deferred taxes arise for U.S. based companies that claim tax depreciation at an accelerated rate relative to accounting depreciation used in the preparation of accounting statements In contrast, when calculating the NROI for the DRR, NS subtracts its determination of straight-line depreciation from the DRR net income, not accelerated depreciation. By not allowing the DRR to benefit from accelerated depreciation, NS overstates the DRR NROI vis a vis the NS system calculation. This "apples to oranges" calculation results in a Unit Value Multiplier that is significantly overstated and therefore is an unrealistic representation of the required increase in ad valorem taxes.

The second error in NS's calculation is the use of the STB's cost of capital as a divisor to determine the "value" of the DRR and the NS system for ad valorem tax purposes. Use of the STB's cost of capital may be appropriate to use for STB regulatory calculations; however, in this instance, NS states it is attempting to represent the amount of ad valorem tax that would be paid by the NS and the DRR in fourteen different states and these states do not necessarily rely on the STB's cost of capital to determine the value of railroad assets. Therefore, NS's characterization

[119] NS's calculations are shown in e- workpaper "DRR Ad Valorem Tax_Reply xlsx "

of its "unit methodology" as a reflection of what the states would charge in ad valorem taxes is unsupported and unrealistic.

DuPont continues to prorate the actual ad valorem taxes paid by NS in each state to the DRR as a method of calculating ad valorem taxes on Rebuttal. This methodology has been accepted time and again by the STB in previous stand-alone cost proceedings. Based on the significant flaws in NS's methodology, it is the best evidence of record in this proceeding.

10. Other

a. Intermodal Lift and Ramp Cost

In Opening, DuPont included intermodal lift, ramp, and dray expenses equal to $90.8 million. DuPont estimated intermodal lift, ramp and dray unit costs for the DRR based on actual expenses incurred by NS at the locations included on the DRR.[120] On Reply, NS criticizes DuPont's calculation of intermodal lift, ramp, and dray expenses and revises the operating expense to $110.4 million.[121] In response to NS's arguments, DuPont makes limited changes to the calculations of intermodal lift and ramp, and includes $108.0million in operating expenses in rebuttal.[122]

In Reply, NS lists four areas where it claims DuPont committed errors in calculating intermodal lift and ramp expenses: 1) clerical staff and utilities, 2) Elizabeth, New Jersey; 3) Chicago cross-town drays; and 4) additional personnel.[123] DuPont's response to each of the four areas follows.

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[120] *See* DuPont Opening, p. III-D-25 and DuPont Opening e-workpapers "DRR Total Lift Costs.xlsx" and "DRR Operating Expense_Errata.xls" "

[121] *See* NS Reply, pp. III-D-288-292 and NS Reply e-workpapers "Intermodal Lift Analysis.xlsx" and "DRR Operating Expense Reply.xlsx "

[122] *See* Dupont Rebuttal e-workpapers "DuPont Rebuttal Intermodal Terminal and Lift Cost.xlsx" and "DRR Operating Expenses Rebuttal.xlsx."

[123] *See* NS Reply, pp. III-D-288-292

i. Clerical Staff and Utilities

In Reply, NS states that DuPont incorrectly excluded clerical staff and utility costs from its calculation of intermodal unit cost. NS states these costs are required for intermodal operations on the DRR.[124] Curiously, NS excluded these same cost items for clerical staff and utilities costs from its calculation of unit cost automotive handling cost [125] NS is not consistent in its treatment of these costs and does not explain why it included the costs for intermodal services and yet excluded from auto handling services. DuPont excluded clerical and utility costs from the calculation of lift ramp and dray costs in Opening as it has already included yard clerical and utility cost with its DRR personnel costs and materials supplies and expenses cost In Rebuttal, DuPont continues to exclude clerical and utility cost from the lift, ramp and dray unit costs. a

ii. Elizabeth, New Jersey

In Opening, DuPont relied upon the lift and ramp costs associated with the E-Rail terminal for all intermodal traffic originating or terminating in Elizabeth, NJ. In Reply, NS states that there are two terminals in Elizabeth, each with its own costs, and avers that the significantly higher lift and ramp costs for the Elizabeth Marine Terminal must be applied to intermodal traffic originating and terminating at that specific terminal. In Rebuttal, DuPont accepts these unit costs and applies them to the DRR containers and trailers originating and terminating at the Elizabeth Marine Terminal.[126]

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[124] *See* NS Reply, pp. III-D-288-289.

[125] *See* NS Reply, p III-D-292, NS Reply e-workpaper "DRR Operating Expense Reply xlsx" and DuPont Opening e-workpaper "AUTO DISTRIBUTION DETAIL -2008-2010 xlsx."

[126] *See* Dupont Rebuttal e-workpapers "DuPont Rebuttal Intermodal Terminal and Lift Cost xlsx" and "DRR Total Lift Costs Rebuttal xlsx "

iii. Chicago Cross-town Drays

In Opening, DuPont did not include cost for cross-town drays in Chicago between carriers In Reply, NS states that intermodal traffic moving from its intermodal facilities at 47th street, 63rd Street, Calumet and Landers to other carriers receive cross-town drays in those interchange connections NS pays $8.5 million for cross-town drays for this traffic in 2009 and, based on an analysis of its waybill file, concludes that the DRR would move 97 percent of this traffic or 305,760 containers and trailers via this dray service. [127] In Rebuttal, DuPont includes the cross-town dray cost, but adjusts the amount based on the containers and trailers which are included in its ATC traffic base, which is the basis for determining the DRR revenues and which was accepted by NS in Reply. The ATC data base shows only 263,335 intermodal units delivered in interchange from these for yards which equals 83.9 percent of NS's units. [128] Thus, DuPont includes 83.9 percent of NS's $8.5 million cross-town dray expense in Chicago, or $7.1 million

iv. Additional Personnel

NS states that it increased the number of non-train operating personnel to manage contractors that perform intermodal services on the DRR system [129] DuPont does not accept these additional personnel as discussed in DuPont Rebuttal Section III-D-3

b. Automotive Handling Cost

In Opening, DuPont used an automotive handling cost per unit equal to $25 80, and a total cost of $6.9 million.[130] In Reply, NS accepted DuPont's automotive handling cost per unit,

[127] *See* NS Reply, pp III-D-292 and NS Reply e-workpaper "Intermodal Lift Analysis xlsx "
[128] *See* Dupont Rebuttal e-workpapers "DuPont Rebuttal Intermodal Terminal and Lift Cost xlsx" and "ATC_TRAFFIC_REBUTTAL for trackage rights and intermodal xlsx."
[129] *See* NS Reply, pp III-D-291-292.
[130] *See DuPont Opening, p III-D-25 and DuPont Opening e-workpapers "AUTO DISTRIBUTION DETAIL-2008-2010 xlsx" and "DRR Operating Expenses_Errata xlsx."*

the number of vehicles handled, and the resulting total cost [131] In Rebuttal, DuPont incorporates the same automotive handling cost per unit of $25.80 as was used in Opening and Reply. This cost is applied to the number of vehicles the DRR would be handling for a total cost of $6.9 million.[132]

In Reply, NS states that it increased the number of personnel that it felt was necessary for automotive operations on the DRR.[133] As with NS's additional intermodal management personnel, DuPont does not accept the addition of these positions to non-train operating personnel, as is discussed in DuPont Rebuttal Section III-D-3.

c. Costs Incurred by Residual NS for New DRR-NS Interchanges

In Reply, NS adds the taxi costs to move NS crews from existing crew on-duty/off-duty locations to DRR/NS interchange locations created for in the stand-alone model NS attempts to justify this additional expense based on the STB's decision in *Duke/NS.* DuPont does not accept this additional expense in Rebuttal based on *WFA/Basin*, where the Board determined that it is reasonable to assume the incumbent would establish a crew change at the hypothetical interchange due to the volume of traffic moving through the interchange, thus avoiding the added taxi expense [134] In Reply, NS refers to the Secoast, VA interchange near Petersburg and states that crews would need to be taxied from NS's crew location at Crewe, VA a distance of 40 miles.[135] Review of DuPont's Base Year train list shows that 6,419 trains are received or delivered in interchange with NS at Secoast or 17.6 trains per day.[136] Certainly, volume of this magnitude warrants NS establishing an interchange at Secoast, thereby avoiding the cost of taxi from Crewe.

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[131] *See* NS Reply, p. III-D-292 and NS Reply e-workpaper "DRR Operating Expense Reply.xlsx "
[132] *See* DuPont Rebuttal e-workpaper "DuPont Operating Expense_ Rebuttal xlsx."
[133] *See* NS Reply, pp III-D-292-293
[134] *See WFA/Basin*, slip op., p 18.
[135] *See* NS Reply, p 293
[136] *See* DuPont Rebuttal e-workpaper "Base Year Trains List_Statistics_Rebuttal xlsx"

d. Calculation of Annual Operating Expense

In Opening, DuPont discussed the development of operating statistics for the Base Year traffic and the application of operating unit costs to the operating statistics to this full year of traffic statistics to produce annual operating expenses. As discussed, DuPont followed the procedures accepted by the Board in *WFA/Basin* to accomplish these tasks and the resulting first year operating expenses were provided to DuPont witnesses Crowley and Fapp who use these first year operating expenses in the DCF model.

In Reply, NS explains that, rather than using Base Year operating statistics, it uses calendar year 2010 operating statistics and backcasts the result to the first year of the DCF model using car-miles. As discussed in Part III-H, NS then uses car-miles to forecast changes in traffic volumes throughout the DCF model rather than DuPont's use of tons for forecasting operating statistics though the life of the DCF model DuPont's response to NS's inappropriate use of car miles in found in Part III-H.

PART III-E

PUBLIC VERSION

Table of Contents

III. STAND-ALONE COST III-E-1
E. NON-ROAD PROPERTY INVESTMENT III-E-1

PUBLIC VERSION

III. STAND-ALONE COST

E. NON-ROAD PROPERTY INVESTMENT

DuPont's Opening evidence describes Non-Road Property Investment as including locomotives, railcars and other equipment, including company vehicles, maintenance-of-way equipment and computer system needs. As stated in Opening, locomotives and railcars are acquired through leases, the cost of which is included in the DRR operating expenses. Further the cost of other equipment such as highway vehicles, maintenance-of-way equipment and computer systems are either purchased or leased. If purchased, the purchase price is annuitized and included with operating expenses. If leased, the lease costs are included with operating expenses

In Reply, NS addressed Non-Road Property Investment only by indicating that all of these items are addressed elsewhere in its evidence. Review of NS's Reply evidence demonstrates that it accepts DuPont's acquisition of locomotives and railcars though lease agreements and lease or annuitization of the purchase price of other equipment and inclusion of these costs as operating expenses.

In Rebuttal, DuPont continues to lease locomotives and railcars and lease or purchase other equipment, and to include the associated expenses in operating costs. Differences in the costs associated with locomotive, railcar and other equipment leases and acquisitions are addressed in Parts III-C and III-D.

In addition to the above, DuPont stated in Opening Part III-E, that it operates over 818.87 miles of track owned by others via either trackage rights or joint facility agreements and includes the associated joint facility costs with its operating cost. In Reply, NS adjusted these miles to equal 817.56 miles, and also included the trackage rights payments associated with these

trackage rights and joint facilities as operating costs. In Rebuttal, DuPont accepts NS's adjustment to the miles of trackage rights and joint facilities. Differences in the application of the trackage rights costs are addressed in Part III-D.

NS also alleges that the DRR is required to share in the cost of ownership of lines that are partially owned by NS and used by DRR via trackage rights or joint facility agreements. This ownership is fully addressed in Part III-F.

PART III-F

PUBLIC VERSION

Table of Contents

III. STAND-ALONE COST III-F-1

F. ROAD PROPERTY INVESTMENT III-F-1

1. Land III-F-4

a. Review of Norfolk Southern's Land Valuation III-F-5

b Rebuttal Of NS Review Of DuPont Appraisal: Summary III-F-11

c. Rebuttal of NS Appraiser's Review: Summary III-F-13

d. Easements III-F-14

2. Roadbed Preparation III-F-15

a. Clearing and Grubbing III-F-29

i Quantities of Clearing And Grubbing III-F-29

ii. Clearing and Grubbing Unit Costs III-F-29

b Earthwork III-F-31

i Earthwork Quantities III-F-31

(1) DRR Line Segments III-F-31

(2) DRR Yards III-F-33

(3) Total Earthwork Quantities III-F-34

ii Earthwork Unit Costs III-F-35

(1) Common Excavation III-F-35

(2) Common Excavation – Adverse III-F-36

(3) Loose Rock Excavation III-F-39

(4) Loose Rock Excavation – Adverse III-F-40

(5) Solid Rock Excavation III-F-40

(6) Solid Rock Excavation – Adverse III-F-42

(7) Embankment/Borrow III-F-42

(8) Other Earthwork Quantities and Unit Costs III-F-43

(a) Stripping III-F-43

(b) Undercutting III-F-44

(c) Over-Excavation III-F-47

(d) Fine Grading III-F-48

(e) Swell III-F-49

(9) Subgrade Preparation III-F-51

(10) Land for Waste Excavation III-F-55

c. Drainage III-F-57

PUBLIC VERSION

i. Lateral Drainage..... III-F-57
ii Yard Drainage..... III-F-57
d Culverts..... III-F-58
i. Culvert Unit Costs III-F-58
ii Culvert Installation Plans... III-F-59
iii. Culvert Quantities. III-F-60
e Other III-F-61
i. Sideslopes III-F-61
ii Ditches III-F-61
iii. Retaining Walls... ..... III-F-61
(1) Increased Roadbed Width III-F-62
(2) Masonry Walls III-F-64
(3) Timber and Tie Walls.. ..... III-F-66
(4) Piles III-F-66
(5) Foundation Excavation. III-F-67
(6) Unit Costs III-F-67
iv. Rip Rap III-F-68
v. Relocating and Protecting Utilities III-F-68
vi Seeding/Topsoil Placement..... III-F-68
vii. Water for Compaction III-F-68
viii Surfacing for Detour Roads III-F-68
ix. Environmental Compliance III-F-68
x. Lighting for Night Work..... III-F-69
xi Dust Control Work III-F-70
3 Track Construction... ..... III-F-70
a Geotextiles III-F-72
b. Ballast and Sub-ballast III-F-73
i Ballast and Sub-ballast Quantities III-F-73
ii. Ballast and Sub-ballast Unit Costs. III-F-76
c. Ties..... III-F-80
d Track (Rail)... ..... III-F-81
i Specifications..... III-F-81
ii Rail Pricing III-F-81
iii Field Welds III-F-82

iv. Insulated Joints..... ....III-F-83
v. Switches III-F-83
c Other III-F-84
i. Rail Lubricators III-F-84
ii. Plates. Spikes and Anchors..... .....III-F-84
iii. Derails and Wheel Stops..... .....III-F-84
iv Crossing Diamonds..... .....III-F-85
v. Materials Transportation... ..... III-F-85
vi. Track Labor and Equipment III-F-85
4. Tunnels.. .... III-F-86
5. Bridges III-F-86
a. Bridge Inventory III-F-87
b Bridge Design and Cost Overview III-F-90
i. Cost Overview III-F-91
ii Bridge Design III-F-92
(1) Superstructure Design (Spans)..... ..... III-F-92
(2) Substructure Design (Piers and Abutments) III-F-93
iii. Type I Bridges..... ....III-F-94
iv Type II Bridges III-F-95
v. Type III Bridges.. ....III-F-95
vi. Type IV Bridges..... .....III-F-97
vii. Bridges with Multiple Span Types III-F-97
viii Special Bridges III-F-98
(1) Movable Bridges III-F-98
(2) Exceptionally Tall Bridges..... ..... III-F-106
(3) Non-Movable Bridges over Navigable Waters III-F-107
c Highway Overpasses.... ..... III-F-107
d. Summary III-F-108
6 Signals and Communications III-F-108
a. Centralized Traffic Control III-F-108
i. PTC Installation in 2009..... ....III-F-108
ii. Inventory of Signal Components III-F-113
iii. Unit Costs for Signal Components III-F-115
b. Positive Train Control..... ..... III-F-116

i. PTC Wayside System III-F-116
ii. PTC IT Costs III-F-117
iii. PTC Locomotive Costs III-F-118
iv. PTC Development Costs.. ..... III-F-118
v. PTC Expenditure Schedule III-F-118
c. Detectors III-F-118
d Crossing Signal Equipment III-F-119
e. Communications III-F-120
f. Hump Yard Equipment III-F-120
g. Summary III-F-121
7. Buildings and Facilities. III-F-121
a. Headquarters Building III-F-121
b Fueling and Locomotive Servicing Facilities III-F-122
i Fixed Fueling Facilities..... ..... III-F-122
ii Fueling by Truck and Locomotive Servicing Facilities III-F-124
c Locomotive Repair Facilities..... ..... III-F-124
d. Car Repair Facilities III-F-125
e. Crew Change Facilities III-F-127
f. Yard Offices..... ..... III-F-128
g. Maintenance of Way Buildings (Roadway Buildings) III-F-129
h Wastewater Treatment III-F-131
i. Other Facilities / Site Costs..... ..... III-F-131
j. Guard Booths III-F-134
k. Mechanic Repair Shops III-F-135
l Mechanical Offices III-F-136
m. Observation/Yard Master Towers..... ..... III-F-136
n. Storage and Warehouse Buildings III-F-137
o. Miscellaneous Buildings. III-F-138
p. Foundation Designs III-F-138
q. Signal Maintainer Buildings III-F-138
r. Intermodal Terminals III-F-139
s Bulk Transfer Facilities III-F-139
t. Automotive Facilities..... ..... III-F-140
8. Public Improvements III-F-140

a Fences III-F-141
b. Signs and Road Crossing Devices III-F-141
c Grade-Separations..... III-F-141
d. At-Grade Crossings..... III-F-142
e. At-Grade Crossing Detours..... III-F-142
f. At-Grade Crossing Vegetation Removal .. III-F-142
9 Mobilization III-F-143
10. Engineering III-F-145
11. Contingencies III-F-145
12. Construction Schedule III-F-146
13. Joint Facilities / Shared Assets III-F-147
a. DRR Is Not Required To Construct The Facilities Of Non-Defendant Third Parties III-F-148
i NS Rail Does Not Own Conrail Or IHB III-F-149
ii. The DRR Is Not Required To Acquire The NS Rail Ownership Interest In The BRC And TRRA III-F-153
b. NS Has Not Properly Calculated The DRR's Ownership Costs For NS-Owned Joint Facilities III-F-155
c. NS Improperly Substitutes Replacement Costs For Ownership Costs III-F-155
d. NS Includes Ownership Costs But Ignores Offsetting Revenues..... III-F-159
e. Conclusions... ..... III-F-165

III. STAND-ALONE COST

F. ROAD PROPERTY INVESTMENT

On Opening, DuPont presented feasible and well supported road property investment costs for the DRR. DuPont's Opening costs included an unprecedented $3,374 million for land acquisition and real-world costs for common earthwork and several other roadbed preparation items, all of which were lower than comparable Means Handbook unit costs Otherwise, DuPont's Opening road property investment costs were generally consistent with those presented in other SAC cases.

Typical of the approach taken by defendant railroads in other SAC cases, NS asserts that DuPont's road property investment costs are greatly understated. As explained below, NS's Reply Evidence investment costs are grossly overstated and, in many instances, are not adequately supported. In addition, NS's road property investment costs are inflated due to its inclusion of costs to build what NS refers to as the Partially Owned Lines, which the DRR is not building. For all of the reasons set forth in this Part, the Board should reject NS's road property investment costs and accept those presented by DuPont on Rebuttal, as shown in Rebuttal Table III-F-1.

Table III-F-1
DRR Road Property Investment Costs
($ in millions)

Item	DuPont Opening	NS Reply	DuPont Rebuttal
(1)	(2)	(3)	(4)
1. Land	$3.374	$5.324	$3.856
2 Roadbed Preparation	3.969	9.173	4,336
3. Track Construction	8.242	10.628	8,208
4. Tunnels	444	1.096	1,081
5. Bridges	1,928	4,348	2.273
6. Signals & Communications	1.247	2,070	1,490
7. Buildings & Facilities	229	2.636	1,044
8 Public Improvements	122	256	177
10. Subtotal	$ 19.555	$ 35,531	$22,465
11 Mobilization	437	917	503
12 Engineering	1.618	2.981	1.861
13 Contingencies	1.824	3.371	2,097
14. Total Road Property Investment Costs	$ 23.434	$ 42,800	$26,926

Source DuPont Rebuttal Exhibit III-F-1

Prior to addressing the specific differences between DuPont and NS, it is necessary to address a theme that is prevalent in NS's Reply evidence. Throughout its Reply, NS questions the competence of several of DuPont's expert witnesses DuPont's expert witnesses supporting the road property investment costs of the DRR have a vast array of experience

The DRR's land valuation evidence is sponsored by Richard R. Harps, John G Pinto, Elizabeth W Vandermause, Daniel C Vandermause and Philip H Burris Each of these individuals has a minimum of 30 years experience and as much as 45 years experience. Mr. Harps has over 35 years of experience, is a past president of several real estate organizations and has valued property for acquisition by a large transit authority. Mr. Pinto has over 45 years of experience and has performed real estate appraisals related to railroad property and rights-of-way for government agencies, railroads, transit authorities and private sector entities. Ms

Vandermause has over 30 years of experience and has conducted appraisals for a large transit agency. Mr Vandermause has over 22 years experience in real estate matters as well as 16 years experience in the railroad industry Mr Burris has presented evidence pertaining to easements in stand-alone proceedings for over the last ten years.

The remainder of DuPont's road property investment evidence is sponsored by Mr. Harvey A. Crouch. Mr. Victor F. Grappone and Mr. Charles A. Stedman. Mr. Crouch has over 30 years of railroad engineering experience and is a member of several railroad and engineering associations. Mr. Crouch worked for NS and its predecessor Southern Railway for ten years prior to founding Crouch Engineering in 1991 and has since worked on numerous projects for NS. Mr. Crouch has presented evidence before the STB in a recent stand-alone cost ("SAC") proceeding.

Mr. Grappone has 35 years of experience with railroad and transit signal and communications systems including 24 years with the Long Island Rail Road ("LIRR"). In 2001. he founded Grappone Technologies and has since undertaken projects for several rail entities including the LIRR and New York City Transit. Mr Grappone has presented evidence on signals and communications costs before the STB in several recent SAC proceedings

Mr. Stedman has over 31 years of experience in the railroad consulting business and was instrumental in identifying the ICC Engineering Reports as a useful source of information on original railroad construction and adapting this information for use in stand-alone cost proceedings before the ICC and the STB. Mr. Stedman has presented evidence on roadbed preparation costs before the ICC and the STB in virtually every stand-alone cost proceeding since 1994.

DuPont's road property investment expert witnesses have a vast wealth of knowledge and experience in developing the costs associated with a stand-alone railroad.

1. Land

In Opening, DuPont's land acquisition costs for the DRR were developed by Richard R Harps. MAI. CRE, John C. Pinto CRE. Elizabeth W. Vandermause, MAI. Daniel C. Vandermause and their project team. Mr. Harps has over 35 years of experience as an appraiser and consultant. He holds the Member of Appraisal Institute ("MAI") designation from the Counselors of Real Estate. In addition. he was President of the Washington, D.C Association of Realtors in 1985. The team he has put together for this assignment brings an extensive background in real estate appraisal and experience in appraisal of transportation right of way including valuation of rail properties throughout the United States and Canada.

In Opening, DuPont's real estate Team, estimated that the DRR's right-of-way. excluding easements, would cost an unprecedented $3.370.8 million to acquire. Mr. Harp's valuation considered all segments of the railroad. particularly the major urban centers. In addition, the Team toured significant portions of the route,.and reviewed other data such as aerial maps. He also consulted with various local appraisers On Reply. NS has raised the land acquisition costs well beyond the bounds of reasonableness. In addition, as explained below. and in detail in the Team's Report attached as Rebuttal Exhibit III-F-2. the way NS reached these new heights is simply untenable and produces an unrealistic result.

The DuPont real estate experts conclude that their original land valuation. presented in DuPont's Opening evidence. is the best representation of the value of the land required for the DuPont SARR However, based on the NS's response, two adjustments are required for the land valuation·

Addition of 16 84 miles. in seven locations.

Modifications and additions to the land required for yards and other supporting facilities[1]

Taking the above two modifications into account, Table III-F-2 below summarizes our valuation of the land required for the DuPont SARR

Table III-F-2
Land Valuation for DuPont Stand-Alone Railroad

	Item	Total Miles	Total Acres	Estimated Value as of 6/1/09 ($000)
	(1)	(2)	(3)	(4)
1	Land Valuation for DRR (Opening)	7.276 9	81.682.3	$3.373.900
2	Additions to DRR (7 Locations)	16.8	190.8	25.200
3.	Modifications to Yards/Supporting Facilities	xxx	1.791.0	456.100
4	Total Land Valuation for DRR	7.293 8	83.664.4	3,855,200
5	Easements (Opening)	xxx	xxx	535
6.	Total Including Easement Fees	7.293.8	83.664	$3,855,735

Source DuPont Opening e-workpaper "DuPont SAR Land Valuation – April 24, 2012 pdf and Rebuttal Exhibit III-F-2.

a. Review of Norfolk Southern's Land Valuation

In support of the proceeding before the Surface Transportation Board, the following base land values[2] were submitted·

$3,052,100.000	DuPont base land valuation
$4.154.519.000	NS appraiser's base land valuation
$1.102.419.000	Difference in base land valuation

[1] Acres in yards were modified in Rebuttal in order to accommodate increased yard sizes as a result of the addition of classification tracks In addition, yard acres were increased to reflect acres for intermodal yards, auto distribution yards and bulk transfer facilities Acres for these facilities are equal to those relied on by NS in Reply, unless documents provided by NS in discovery show that a specific facility is comprised of fewer acres For example, in Reply, NS included 274.3 acres for the Voltz Auto facility based on the actual acres required for its auto facility in Shelbyville, KY However, in discovery, NS provided a diagram of the Voltz facility From this diagram it was calculated that the Voltz facility requires 188 0 acres. The Rebuttal yard acres are shown in e-workpaper "DRR Yard Acreage Requirements xlsx" and the calculation of acres from discovery documents are included in Rebuttal e-workpaper "DRR Yard Diagram Acres pdf."

[2] Base land value equals the fee simple value of the land underlying the DuPont SARR, before consideration of other factors, such as land needed for communications facilities, land needed for yards and other support facilities, and adjustments to land value for partially-owned lines and land easements/agreements

The NS Appraiser produced a total base land valuation that was 36 percent greater than DuPont's base land valuation.

The conclusion of our review of the NS Appraiser's land valuation is that the NS Appraiser developed and applied a purely mathematical and highly mechanized approach that did not apply basic appraisal principles.

An analysis of all the land sales used by the NS Appraiser in six SARR states found that the NS Appraiser's average land values frequently *overstated* the actual sales prices in their data sets, thus overstating the base land value. The degree of overstatement is significant – 75 percent of the time the sales prices were overstated by more than 25 percent, and 34 percent of the time, the overstatement more than doubled the actual sales prices. This was not the only significant error by the NS Appraiser. Other errors committed by the NS Appraisers also contributed to unsupported land value conclusions.

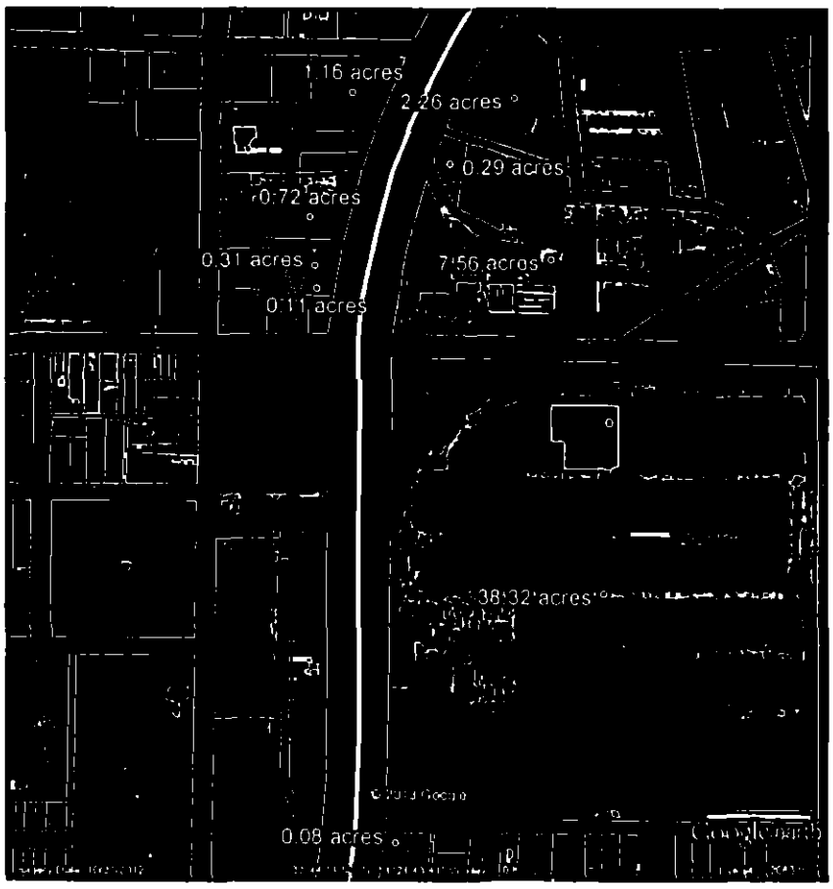
First, the NS Appraiser failed to consider the quantity and quality of the sales data available. Second, the NS Appraiser failed to consider basic valuation tenets. Third, the NS Appraiser then applied analysis techniques that resulted in land valuations that were unsupported by the sales. Thus, the conclusions reached by the NS Appraiser are necessarily unreliable and unsupported.

Even though the NS Appraiser describes the process undertaken in their analysis as a sophisticated mass appraisal methodology, these supposedly sophisticated data techniques did not absolve them of the responsibility to be sure that the data was being handled in a manner that is consistent with the appraisal problem being addressed. By ignoring basic characteristics of land sales, characteristics that every appraiser should consider, the NS Appraiser failed in their responsibility to produce value conclusions that are supported and not misleading. The main

observations and conclusions of our review of the NS appraiser's land valuation for the DuPont SARR include the following

> The NS Appraiser compiled sales data sets grouped by zoning/use and sorted by price per square foot only The data sets included sales from several years, parcels of various sizes, urban and rural locations sometimes mixed together and all sales were only sorted by price per square foot By creating such non-homogeneous data sets, the NS Appraiser failed to analyze and account for changes in market conditions / market trends, differences in average prices attributed to land sizes, and the differences attributed to locations (urban and rural land analyzed together)

The NS Appraiser failed to account for differences in parcel size (a key determinant of land value) in the comparable sales. For example, note this portion of the DuPont SARR in the Atlanta, GA area

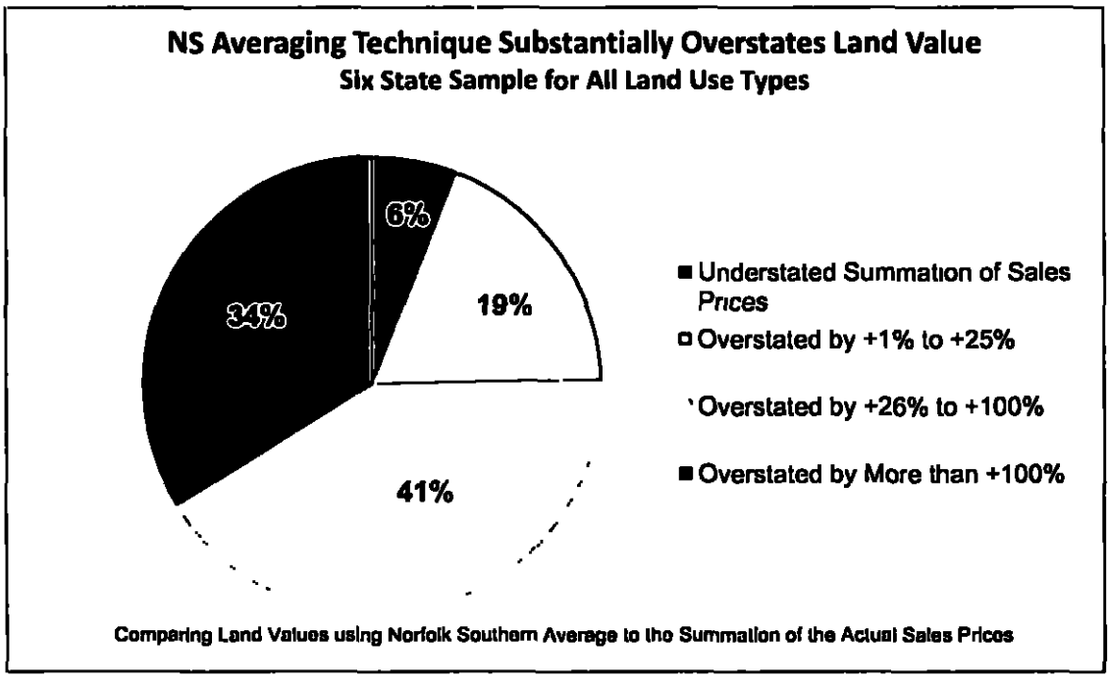


Imagine that the land purchases by the SARR would consist only of the properties on the right side of the SARR (Orange line) Land would be purchased from five properties of the following sizes:

0.08	acres
0.29	acres
2 26	acres
7 56	acres
38 32	acres

It is clear from the above photo that the most land for the SARR will be purchased from the 38.32-acre parcel and that the least amount of land will be purchased from the 0.08 acre parcel. The NS Appraiser gives *equal weight* to each parcel in developing the average price per acre, causing the smaller parcels to be over-represented in the average. Since generally speaking, the unit price for land rises as the parcel size declines, the NS Appraiser overstated the average land value by giving equal weight to each land sale, regardless of the size of the parcel being purchased The NS Appraiser utilized an inappropriate averaging technique, leading to inflated value conclusions

To measure the extent of the error caused by the inappropriate averaging technique used by the NS Appraiser, the DuPont real estate Team looked at six sample states (Alabama, Ohio, Pennsylvania, New York, North Carolina and Georgia) For each land use type (industrial, residential, etc.) and for each jurisdiction (county) in these six states, we compared the average price per acre produced by the NS Appraiser to the summation of the actual sales prices used by the NS Appraiser:



The team tested 364 sales data sets, representing all the land sales used by the NS Appraiser in these six states. For each set of sales, we compared the summation of the actual sales prices to the summation of the prices computed using the NS Appraiser's average land price. The results show the impact of grouping a non-homogeneous set of sales into one data set and giving all sales equal weight leading to conclusions that could not produce a meaningful value

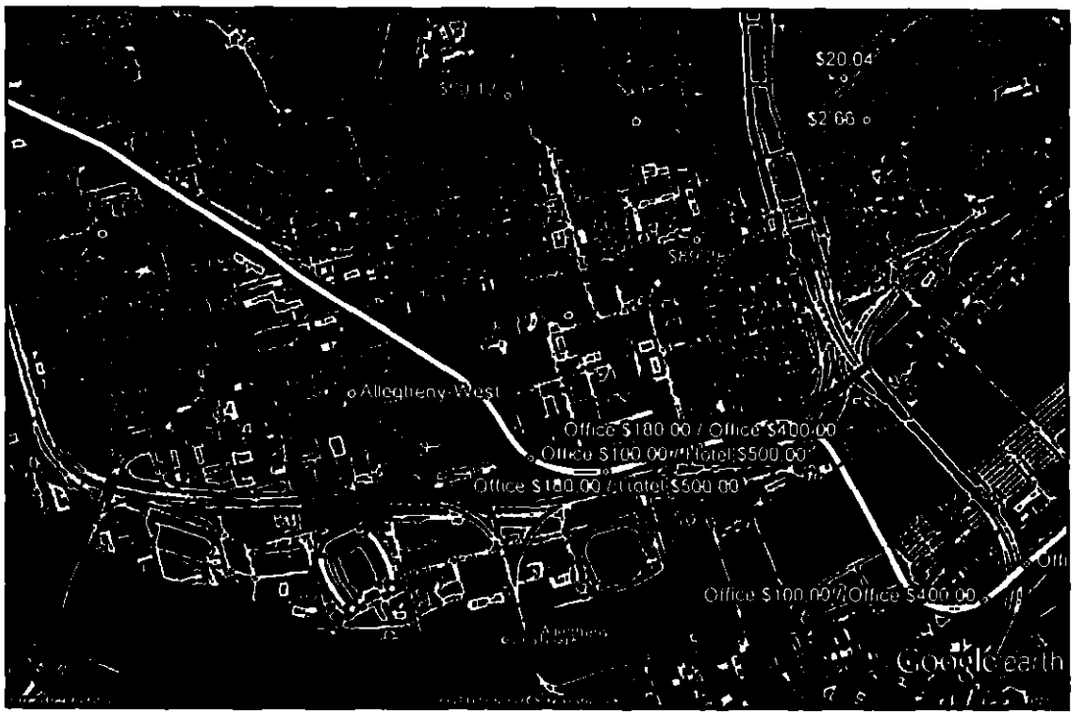
In 94% of the cases, the use of the NS Appraiser's average land value overstated the summation of the actual sales prices. The degree of overstatement is significant – 75 percent of the time, sales prices were overstated by more than 25 percent, and 34 percent of the time, the overstatement more than doubled the actual sales prices.

The inflated value conclusions developed by the NS Appraiser were also contrary to and inconsistent with the "no barriers to entry" requirement in SAC analyses

At this point, having failed to properly account for differences in the sales data, the NS Appraiser then utilized the non-homogeneous sales data to produce their land valuations that were based solely on the unit price. This approach is flawed for the following reasons:

> The only categorization or "stratification" of the sales data by the NS Appraiser was by unit price. Without accounting for the differences in parcel size or any other factors that could impact the unit price, the use of this single measure (unit price) as a surrogate for all other valuation factors, does not and could not produce credible value conclusions.
> When eliminating sales as "outliers", only the highest unit price sales were excluded. Having committed the error of using an improper averaging technique (that overstated the resulting land value conclusions), the NS Appraiser then committed another error of eliminating sales only from the high end of the spectrum, making it impossible to judge the reasonableness of the resulting value conclusions.
> By routinely applying route-average or state-average land values to rural jurisdictions, the NS Appraiser applied urban-area land values to rural areas.
> The NS Appraiser produced values that were not supported by actual sales in proximity to DuPont SARR

For example, the exhibit below illustrates a portion of the DuPont SARR in the Pittsburgh, PA area:



For this portion of the DuPont SARR, the NS Appraiser developed the land values shown in WHITE, ranging from $100 00 to $500 00 per square foot of land However, note that the **comparable sales used by the NS Appraiser (shown in yellow on the above exhibit) do not exceed $20.04 per square foot**, and land sales excluded by the NS Appraisers (shown in RED above) do not exceed $89 28 per square foot

> The land valuations produced by the NS Appraiser did not always stay within the bounds of the sales prices.
>
> The NS Appraiser created average land values by excluding a variable percentage of higher-priced sales from their calculations, with no market rationale. Having committed the error of using an improper averaging technique (that overstated the resulting land value conclusions), the NS Appraiser then committed another error of eliminating sales only from the high end of the spectrum, making it impossible to judge the reasonableness of the resulting value conclusions.
>
> The NS Appraiser utilized the same sales data to produce multiple value conclusions, simply by excluding a differing number of high unit price sales, with no market rationale for the sales excluded, other than price.

In conclusion, the NS Appraiser failed to consider recognized and accepted appraisal techniques to categorize and analyze land sales. The result was a non-homogeneous set of sales that was thereafter manipulated by the NS Appraiser solely on the unit price, taking no relevant variables into account.

The value conclusions of the NS Appraiser were unsupported by the data, and therefore the value conclusions cannot be relied upon as a reasonable estimate of land value for the land required by the DuPont SARR.

b. Rebuttal Of NS Review Of DuPont Appraisal: Summary

The NS Appraiser submitted an appraisal review of DuPont's valuation of the land underlying the DuPont SARR in Part III-F-1 of NS's Reply evidence Review of NS's land Reply shows that NS's criticisms are incorrect and meritless. Information support this

conclusion is well documented in Rebuttal Exhibit III-F-2 included with this evidence. The issues addressed include:

> Date of Value/Partially-Owned Rights-of-way/Land Use Agreements and Easements: As fully discussed in Part III-G, DuPont's date of valuation is consistent with Board precedent.
>
> Classification of Land Uses. The NS Appraiser contends that the land use definition in our appraisal was not sufficiently detailed In fact, the land uses designated in DuPont's appraisal properly reflect the underlying land value for that portion of the DuPont SARR.
>
> Inspection of Subject Property· The NS Appraiser, in his review, contends that DuPont's physical inspections of the subject property were not extensive enough, and that we relied too much on computer-based tools for our inspections. Rebuttal Exhibit III-F-2 discusses DuPont's extensive pre-planning and detailed on-site physical inspections of the DuPont SARR, and also discusses the powerful computer-based tools (Google Earth and BING) used in our appraisal process
>
> Selection of Comparable Sales and Verification Process and Taking Proper Steps to Analyze Comparable Sales The NS Appraiser questions several aspects of DuPont's land sales research and land valuation process that were easily refuted in the documentation and data supplied along with DuPont's real estate appraisal For example DuPont's real estate Appraiser Team·
>
> 1. Did not use "unknown" land use type nor were improved sales used as the basis of some of our values.
>
> 2 Did not use property assessment data as the basis for land value
>
> 3 Did not have an overreliance on "anecdotal" sources of secondary information, such as assessors, brokers and appraisers. As is customary in most appraisals, the Team used these secondary sources to support the actual sales data that was the basis of its appraisal.

The NS Appraiser's claims and false assertions that DuPont's analysis was not documented sufficiently in our work papers must be disregarded.

> Technique Used to Average Data: The NS Appraiser contrasts the averaging technique used by DuPont's Appraisal Team (a weighted average approach) with the averaging technique used in the NS Appraiser's valuation report Rebuttal Exhibit III-F-2 clearly shows that the weighted average technique is a superior technique to use in valuing land for the SARR, because it produces more reliable conclusions.

It must be mentioned here that the NS Appraiser attempts to characterize the averaging technique used by DuPont's Team as one that the appraisal industry in general, and the Appraisal Institute in particular; have rejected. NS Appraiser's review document and testimony is misleading, because it appears to confer the approval of the Appraisal Institute on the averaging technique used in their appraisal, as well as the specific rejection by the Appraisal Institute of the averaging technique utilized in our appraisal. *This is a false and willfully misleading claim by the NS Appraiser and should be disregarded.*

c. Rebuttal of NS Appraiser's Review: Summary

DuPont's appraisal followed recognized and established appraisal techniques that were appropriate. The process followed in developing the land valuation was not a mechanical process that was followed lockstep, such as that used by the NS Appraisers. Instead, the quantity and quality of the sales data available dictated the process used in developing the land valuation, to ensure the most accurate, reasonable and supportable values that were consistent with the actual sales in the market.

NS Appraiser's failed to consider recognized appraisal techniques and did not produce a valuation that was consistent, supportable, and reasonable based on market data. Having committed the error of using an improper averaging technique (that overstated the resulting land value conclusions), the NS Appraiser then committed another error of eliminating sales only from the high end of the spectrum, making it impossible to judge the reasonableness of the resulting value conclusions. The NS Appraiser's conclusions are unrealistic and should be rejected

As discussed in Part III-G, DuPont's application of the July 1, 2009 valuation date is consistent with Board practice; its valuation segment sizes are consistent with appraisal principles; and its market adjustment factor was necessary to arrive at an accurate market value

figure in light of the real estate market's unusual state. Thus, DuPont continues to rely on its Opening land costs, as adjusted for the additional route miles and yard acres that have been added on Rebuttal.

d. Easements

DuPont disagrees with NS's claim that easement prices for the DRR should be increased by inflation, or that, alternatively, current land (fee simple) prices should be used in place of easement prices. NS's claims are incorrect for two reasons. First, easements themselves are typically acquired by payment of a one-time fee, and easement agreements do not provide for inflation of that fee As the DRR is stepping into NS's shoes with regard to these agreements it is entitled to the cost and benefit of these agreements, including the fee actually paid for the perpetual easement.[3] To do otherwise would be a barrier to entry.[4]

Second, an examination of possible ways to reflect the change in easement prices over time demonstrates that various land value indexes were inappropriate for measurement of the change in easement values. DuPont reviewed NS's and its predecessor companies' actual experience with the easements at issue Because these easements were acquired by NS between 1836 and2007, DuPont reviewed the actual amounts NS paid for easements over this 171-year period The average price paid for the easements varied between $0.00 and $52,500 per acre. NS paid $0.00 per acre or $1 00 per acre several dozens of times, (including as recently as 2006) during the 171 years. Further the highest amount per acre, $52,500 per acre was paid in1881.[5] The prices paid clearly demonstrate that there is no specific trend in the price of the

[3] *See TMPA*, p. 697

[4] Furthermore, the Board "does not require a stand-alone railroad to acquire greater title to property than the incumbent railroad." *See TMPA*, p 697 If the Board follows NS's suggestion and values the easement as a fee interest, it will have essentially required the DRR to acquire a greater interest in land than NS's interest.

[5] *See* DuPont Rebuttal e-workpaper "Average Easement Fees.xlsx" which shows the minimum, average and maximum price per acre paid for easements each year by state

easements during this period. For these reasons, DuPont continues to rely on its Opening Evidence regarding the value of easements required for the DRR's right-of-way.

2. Roadbed Preparation

In Opening, DuPont relied on the Trestle Hollow Project for several of its construction unit costs, most notably the earthwork unit costs. At the beginning of Roadbed Preparation in Reply, NS devotes fourteen pages to attacking DuPont's: 1) failure to use unit costs from R.S. Means ("Means Handbook"); 2) use of the Trestle Hollow Project; and 3) failure to rely on AFE information provided by NS in discovery.[6] DuPont addresses each of NS's claims below and demonstrates that DuPont's Opening is justified and feasible

NS claims "[t]he Board has long accepted R.S. Means as the appropriate, authoritative source for earthwork costs."[7] Means Handbook unit costs have been used in most prior SAC proceedings because the defendant railroads failed to provide any representative earthwork cost data from actual projects *WFA/Basin* was the first proceeding where meaningful earthwork cost data for actual projects was provided by the defendant railroad in discovery. That trend was continued in *AEPCO*. As discussed later in this section, NS broke this trend which is why DuPont relied, in part, on the Trestle Hollow Project.

The Means Handbook is one of many ways to project costs for a planned rail project. Crouch Engineering, the firm founded by Crouch Engineering president and DuPont's expert engineering witness Harvey Crouch, usually uses a combination of its historical tabulated prices and those developed by various state Departments of Transportation ("DOT"). For example, when Crouch Engineering developed its excavation unit cost estimate for the Trestle Hollow Project, it assumed that the cost per cubic yard ("CY") would be $1.75 based in part on the

[6] *See* NS Reply, pp III-F-38-51.
[7] *Id.*, p III-F-38

Tennessee DOT average of $1 50 per CY in 2005. Crouch Engineering added $0.25 per CY over the Tennessee DOT figure to account for the increased difficulty of the project. In the end, two contractors, including the successful bidder, both provided bids where the cost per CY for excavation was $1.65.

Means Handbook unit costs do not recognize the economies of scale of large railroad projects such as the DRR which makes costs derived from direct experience (when available) more useful. In particular, the Means Handbook states that "[t]he size, scope of work, and type of construction project will have a significant impact on cost. Economies of scale can reduce costs for large projects."[8] Clearly, the DRR's construction would be classified as a large project resulting in reduced unit costs (*i e* , lower than those shown in the Means Handbook). DuPont's reliance on unit costs derived from other projects (such as the Trestle Hollow Project), vendor quotes or discovery documents is equally as valid as (if not preferable to) reliance on Means Handbook unit costs. Mr Crouch's direct experience with railroad projects supports DuPont's contention that actual project unit costs are lower than those found in the Means Handbook In Rebuttal, DuPont continues to use unit costs derived from the actual Trestle Hollow Project and Means Handbook unit costs where direct project costs are not available

NS claims that *WFA/Basin* and *AEPCO* do not support DuPont's use of the Trestle Hollow Project because, unlike those cases, the Trestle Hollow Project was not conducted by NS, is not on the NS system and was tiny in size and scope.[9] But *WFA/Basin* and *AEPCO* support the concept that actual earthwork costs bid by contractors for actual railroad projects are lower than average costs from the Means Handbook Therefore, current real-world costs, when available, are preferred over the Means Handbook.

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[8] *See* DuPont Rebuttal e-workpaper "Means Handbook project size pdf."
[9] *See* NS Reply, pp III-F-39-41

While NS may not have constructed the Trestle Hollow Project, it was overseen by a former NS employee, Mr. Crouch, who was a Track Supervisor and Project Engineer for NS and has also designed over 30 capital projects for NS [10] While the Trestle Hollow Project may not be on the NS system, it is located in the heart of the territory traversed by the DRR. Furthermore, NS certainly employs contractors to do earthwork on many projects and NS simply oversees the work, just as Crouch Engineering did for the South Central Tennessee Railroad. NS's position that the Trestle Hollow Project was not on the NS system is irrelevant to whether those costs are an accurate representation of the costs to construct the DRR.

NS's claim that the Trestle Hollow Project is "tiny in size and scope in comparison to the DRR"[11] also carries no weight Any recent railroad construction project, including all of the other projects identified by NS in its Reply, would be "tiny in size and scope" when compared to the 7,900-mile DRR.[12] Furthermore, this NS argument also undermines NS's use of the Means Handbook, which as noted above, does not reflect the economies of scope or scale of a project the size of the DRR.

NS does not accept DuPont's use of costs from the Trestle Hollow Project because of the obvious reason – the costs are too low to suit NS's object of artificially inflating the construction costs of the DRR.

To support its much higher Means Handbook unit costs, NS attempts to discredit the Trestle Hollow Project by suggesting that the project was a "small, isolated, and atypical short-line construction project."[13] NS's position is that, because the Trestle Hollow Project is a short-line project, it is therefore substandard or not relevant to what the DRR is building or is atypical

[10] *See* DuPont Opening, p IV-48.
[11] *See* NS Reply, p III-F-39.
[12] This would also hold true for all of the projects used by R. S. Means to develop the unit costs in the Means Handbook
[13] *See* NS Reply, p III-F-40.

of the unit costs DuPont could expect if it bid out this project Building a railroad, with complications such as those on the Trestle Hollow Project, is still building a railroad. The Trestle Hollow Project simply proves, as the Walker to Shawnee (Wyoming) project used in *WFA/Basin* proved, that the SARR can expect to beat Means Handbook unit costs by using real-world project costs.

NS includes a one-page discussion of a site visit to the Trestle Hollow Project location made by NS witness Bagley where he characterizes the Trestle Hollow Project as a "simple construction project."[14] Mr. Bagley visited the site after the completion of the project. DuPont engineering witness Crouch was involved with the Trestle Hollow Project from beginning to end and his opinions, expressed below, certainly are more insightful than Mr. Bagley's cursory review of a finished project

The Trestle Hollow Project involved constructing a complicated, new alignment for the South Central Tennessee Railroad The Trestle Hollow Project was constructed in difficult conditions, including steep terrain, with slopes in excess of 2 1, requiring deep cuts and high fills. The purpose of the project was to bypass several large timber bridges that had been built at the turn of the 20th century. The alignment was designed to improve the vertical grade and reduce curvature The curvature was reduced from nine (9) degrees and six (6) degrees to curves with a maximum of four (4) degrees. The original alignment skirted hilly terrain running west from Centerville, TN to Hohenwald, TN The new alignment was designed and built on an average 2 4 percent grade over the length of the project, which was an improvement over the original maximum slope. The new design was difficult due to the very hilly terrain and the number of ridges and valleys encountered along the proposed alignment In addition, much of the land had not been accessed in decades. The resulting design included several tall

[14] *See* NS Reply e-workpaper "South Central Tennessee Railroad- Trestle Hollow Project pdf"

embankments and a number of deep cuts, all on an average 2.4 percent grade. The elevation change from one end of the project to the other was well over 100 vertical feet. The contractor used scrapers, assisted by bulldozers when necessary, and large excavators with trucks to perform the earthwork.[15] Clearing was difficult due to the hilly nature of the land and the size of the trees.

NS claims that the "Mass Excavation" line item that encompassed all grading for the Trestle Hollow Project cannot mean common earthwork as used by DuPont.[16] NS is again incorrect. The "Mass Excavation" designation was not part of the bid documents that were issued for the Trestle Hollow Project. The project bid documents used "Unclassified Earth" or "Unclassified Excavation," which meant that any type of material encountered would all be paid on the same basis.[17] In other words, the designation encompassed common earthwork, plus any other materials that might be encountered. "Mass Excavation" was the term the contractor used in responding to the bid. Simply put, DuPont's engineers were conservative in applying the Trestle Hollow Project unit cost only to common earthwork – they could have easily applied it to the loose rock category as well. Indeed, the geotechnical reports for the Trestle Hollow Project show that various chert rock classifications were found in the borings.[18] and ultimately were excavated without any increase in the excavation unit cost.

NS next complains that the high concentration of cubic yards of excavation per mile involved in the Trestle Hollow Project would provide economies that are unavailable on the DRR, where the average cubic yards per mile are lower. NS's argument misses the point.

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[15] *See* the photos included in DuPont's Opening workpapers in the Trestle Hollow pictures subdirectory.
[16] *See* NS Reply, p. III-F-41.
[17] *See* DuPont Opening e-workpaper "Trestle Hollow Specifications pdf," pages 142 and 150.
[18] *Id.*, p. 4 of the Geotechnical Report (page 231 in the pdf file).

While it is true that the concentration of cubic yards was higher in the Trestle Hollow Project than the average on the DRR, the Trestle Hollow Project was complicated Moving high volumes such as those encountered on the Trestle Hollow Project requires careful coordination, particularly the proper staging of culvert and grading work, the ability to move large volumes of material in a short amount of time, and the ability to spoil, or waste, excavated material offsite. The Trestle Hollow Project was more difficult than what the DRR would encounter on many of the lines that it is replicating, yet DuPont only applied the Trestle Hollow cost to non-adverse common excavation and increased the cost for adverse territory. Therefore, the application of the unit cost to easier territory is easily justified despite the lower volume per mile, especially when considering that the total cubic yards of common earthwork for the DRR project exceeds 300 million CY (*i e* , DuPont can and will realize economies of scale)

NS next tries to call into question the unit costs used by DuPont from the Trestle Hollow Project by identifying a $10 difference in the total costs between the lump sum bid of $2,698,324 provided by K W Lankford and included in one workpaper provided by DuPont[19] and the workpaper used by DuPont for the unit costs (referred to by NS as the "Cost Tracker") which shows a total of $2,698,334.[20] NS then tries to smear the Cost Tracker document by suggesting that it was prepared after the fact for litigation purposes [21]

There is nothing to support NS's outrageous and unsupported accusation that DuPont developed something after the fact for litigation. Crouch Engineering is the firm that oversaw the Trestle Hollow Project from the beginning of the process through the completion of construction. The bidding was conducted on a lump sum basis but the bidders were told that the winning bidder would have to provide an itemized list showing quantities and unit prices so that

[19] *See* DuPont Opening e-workpaper "Trestle Hollow Specifications pdf," p 5
[20] *See* DuPont Opening e-workpaper "Trestle Hollow Project Cost Sheet pdf."
[21] *See* NS Reply, p III-F-42.

monthly invoices could be submitted and paid. The Cost Tracker was provided by K. W. Lankford after winning the bid and prior to submitting the first invoice A review of the first K. W Lankford invoice submitted for May 2007 shows the unit cost and quantity breakdown [22] This invoice also shows a project total of $2,698,324 (the same as the lump sum bid) demonstrating that the $10 difference on the Cost Tracker is simply a typo and has no impact on the unit costs used by DuPont [23]

NS also refers to a couple of inconsistencies between the Trestle Hollow Project contract bid documents[24] and the Cost Tracker in a feeble attempt to undermine the unit costs on which DuPont relied [25] NS's claims are misguided and have no merit.

The Cost Tracker identifies 787.223 units of mass excavation NS's issue with mass excavation has already been addressed. NS notes that the units are labeled "EA" and not "CY" and tries to read something untoward into this distinction. In reality, the "EA" is just a typographical error and should be "CY "[26]

Next, NS comments that the Cost Tracker shows 787.223 units of excavation but the notes to the bidders meeting state "Yardage 630,000"[27] and tries to make something out of this difference NS is once again misguided in its effort to discredit the Trestle Hollow Project. The 630.000 CY was a preliminary estimate of the quantities of earthwork According to Mr Crouch, this estimated amount was subsequently increased to 696.000 CY. Furthermore, the construction plans for the Trestle Hollow Project were provided to the contractors and they were

[22] *See* DuPont Rebuttal e-workpaper "Trestle Hollow Project Invoice 001 Approval May 2007 pdf"
[23] The $10 difference is in the total cost figures shown for Class B Rip Rap Compare DuPont Opening e-workpaper "Trestle Hollow Project Cost Sheet pdf" with DuPont Rebuttal e-workpaper "Trestle Hollow Project Invoice 001 Approval May 2007.pdf"
[24] *See* DuPont Opening e-workpaper "Trestle Hollow Specifications pdf."
[25] *See* NS Reply, p. III-F-42
[26] *See* DuPont Rebuttal e-workpaper "Trestle Hollow Project Invoice 001 Approval May 2007 pdf"
[27] *See* DuPont Opening e-workpaper "Trestle Hollow Specifications pdf," page 279.

free to develop their own quantity estimate. The 787,223 CY is the estimate used by K. W. Lankford

Finally, NS claims that DuPont refused to provide any additional documentation or explanation regarding the Trestle Hollow Project when requested by NS. DuPont's response to NS clearly reveals that NS's characterization is not accurate.[28] NS's workpaper request contained three separate requests. DuPont responded to the first request (a complete set of Trestle Hollow Project specifications), explained its position that the other two requests were more like discovery requests than workpaper requests and asked that NS review the complete document provided, to determine its responsiveness to the other two requests, prior to DuPont incurring the time and expense to gather the additional material requested by NS. DuPont invited NS to renew its other two requests if the document provided by DuPont did not address all of NS's concerns.[29] NS never made a follow-up request.

NS next claims that the grading contractor on the Trestle Hollow Project had some sort of advantage with a wider right-of-way than the DRR. NS refers to a right-of-way width of 187 feet based on 30 acres cleared and some contractor notes referred to 600 feet of clearance before encroaching on adjacent property lines.[30] Again, NS's claim has no merit.

Thirty acres were cleared in order to allow for the tall fills and deep cuts in a steep-sloped area, not to increase the right-of-way width. Even so, the right-of-way width does not necessarily translate into clear space for equipment to maneuver due to the surrounding topography. Mr Crouch recalls that there were areas where turning equipment around was difficult but the project was not hindered by this limitation. Furthermore, the note referring to 600 feet of clearance before encroaching on private property is just a note; it is not a definition of

[28] *See* NS Reply e-workpaper "Email to DuPont Re Trestle Hollow Project.pdf"
[29] *Id.*
[30] *See* NS Reply, p III-F-43

right-of-way width for purposes of maneuvering equipment. None of the equipment used in the Trestle Hollow Project would have difficulty operating within the right-of-way widths of the DRR.

NS next refers to a cryptic note from the contractor's meeting and concludes that the contractor placed excavated spoils materials (waste) along the right-of-way.[31] NS's conclusion is incorrect. Mr. Crouch recalls that the contractor had to contract with adjacent landowners for a spoils (waste) area and no excess excavation was placed on the railroad right-of-way.

NS then criticizes DuPont's use of the Trestle Hollow Project by referring to a soil analysis that NS conducted in Reply.[32] As discussed later in the "Subgrade Preparation" section of this Rebuttal, DuPont demonstrates that NS's so-called soil analysis is unreliable and, as a result, NS's criticisms have no merit.

Having exhausted its attack on the Trestle Hollow Project, NS attacks DuPont for not relying on Authorizations for Expenditure ("AFEs") provided by NS in discovery NS begins by stating that it made a list of 775 separate AFEs available for DuPont to review. Sixty-eight (68) of the AFEs contained costs for "grading" activities and DuPont only requested ten (10) AFEs.[33] NS's criticism has no merit

NS has told only part of the AFE story. AFEs were offered to DuPont in response to several discovery requests, not just grading costs. In response to Request for Production ("RFP") Nos 74, 125, 126, 130 and 131, NS stated that AFEs would be made available to DuPont to obtain the requested information During the discovery process, NS later added RFP Nos 121

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[31] *See* NS Reply, p. III-F-43, and note 39, where NS refers to DuPont Opening e-workpaper "Trestle Hollow Specifications.pdf," p 279. NS is referring to the following comment "100,000-rest spoil-spoil on slopes limited (extend) spoil areas up to contractor (were to spoil 200,000 @ Duck River not available)"

[32] *See* NS Reply, pp III-F-43-44

[33] *Id.* p. III-F-45

and 135 to the list of requests for which DuPont could review AFEs. Contrary to NS's inference, the AFEs were not produced solely for the purpose of obtaining grading cost information.

Furthermore, DuPont was limited in the total number of AFEs it could request In response to RFP No. 125, NS stated.

> NS responds that it will produce a list of AFEs...from which DuPont can select a reasonable number for production or inspection at NS offices.

NS makes it sound as if DuPont could have requested all sixty-eight (68) grading AFEs. This is not true. DuPont had to select AFEs for several different cost areas, not just roadbed preparation, and still keep the request to a "reasonable number." DuPont selected 100 of the 775 AFEs, of which ten (10) were related to grading. DuPont did not request additional AFEs later as discovery had closed. Having imposed a limit on the number of AFEs that DuPont could request, NS cannot now fault DuPont for not using AFEs that were not selected

In Reply, NS claims that DuPont dismissed the costs from the AFEs it requested because the projects were too small.[34] NS mischaracterized DuPont's Opening evidence. A review of DuPont's Opening at pages III-F-13-14 reveals that DuPont never referred to these projects as small. Rather, DuPont explained that these projects were {{ }} with CY quantities ranging from {{ }} and not remotely akin to new rail line construction like the DRR. Furthermore, these quantity and cost estimates were prepared by the {{ }} and none showed actual bid costs from contractors In addition, all these projects were for extensions or modifications to existing track meaning that they were performed "under traffic" which increases the cost[35] DuPont did

[34] *Id*, referring to DuPont Opening at III-F-13

[35] The DRR will be constructed without interference from existing traffic moving over lines adjacent to its construction.

not rely on the NS-provided AFEs for the development of earthwork costs because they were not representative of the new rail construction required to build the DRR

NS next includes a table listing eight (8) of the ten (10) AFEs as projects that included costs directly related to excavation and borrow[36] These are the same AFEs that DuPont reviewed and described in its Opening evidence as discussed above.

NS then claims that DuPont dismissed NS's AFE unit costs because they were higher than the Trestle Hollow Project costs and the Means Handbook costs[37] This is also untrue. DuPont rejected NS's AFE unit costs for all the reasons explained in Opening and did not use the Means Handbook unit costs because, as explained earlier, actual project costs are superior.

NS next launches into a discussion of the Keystone Build-Out Project ("Keystone Project") in Shelocta, PA. NS provided details on this project to DuPont in discovery and infers that this is another actual project from which DuPont could have used unit costs for earthwork[38]

The earthwork cost of $10 91 per CY at 2009 levels shown for the Keystone Project is unreliable and not applicable to the DRR as a common excavation unit cost for several reasons. First, this unit cost is based on a preliminary estimate by {{[redacted]}}[39] and not actual bids from contractors. Second, NS describes the project as being {{[redacted]}}[40] but there is no distribution of the estimated {{[redacted]}} CY of earthwork into the three earthwork excavation types (common, loose rock and solid rock). Finally, this project is located within 15 miles of the DRR line segment between Pittsburgh, PA and Altoona, PA which is classified by both DuPont and NS as adverse territory. The Pittsburgh

[36] *See* NS Reply, p. III-F-46
[37] *Id.* p. III-F-47
[38] *Id.*
[39] *See* NS Reply e-workpapers "Keystone (NS-DP-HC-25663 to 25701 pdf," pp 22-24 and "NS Actual Earthwork Costs.xlsx," tab "Actual Cost data," Line 21.
[40] *See* NS Reply e-workpaper "Keystone (NS-DP-HC-25663 to 25701 pdf," p. 19

to Altoona segment is covered by valuation section PRR-17 1&17.2-PA which has a distribution of earthwork by type of over 41 percent solid rock.[41] Clearly this indicates that the $10.91 unit cost is for more than just common earthwork.

For the above reasons, the unit cost from the Keystone Project is not useable for common excavation on the DRR

NS next puts forth Chart III-F-2 comparing the unit cost for the Trestle Hollow Project used by DuPont for common excavation to the unit costs for NS's AFEs and the Keystone Project which represent all categories of earthwork.[42] NS even admits that this comparison is bogus by stating:

> Neither the NS AFEs nor the Keystone documents provide separate unit cost for common, loose rock or solid rock excavation so the cost per cubic yard reflected in Chart III-F-2 are the average cost for all categories of earthwork in each of the representative projects.[43]

In Chart III-F-3, NS compares the average cost per CY over all types of earthwork used in DuPont's Opening (a combination of the Trestle Hollow Project cost and Means Handbook unit costs) to the average cost per CY using the Means Handbook for all costs, the NS AFE unit costs and the Keystone Project cost.[44] From this comparison, NS draws the conclusion that DuPont's average earthwork costs are unrealistically low because of the Trestle Hollow Project.[45] On the contrary, this chart demonstrates that the DRR is a least-cost most-efficient railroad by showing that the actual costs for a large railroad project are lower than Means Handbook costs and the costs for a few small NS projects that were estimated by NS and not based on actual bids from contractors. Just because the DRR's costs are lower does not make

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[41] *See* DuPont Rebuttal e-workpaper "DRR Rebuttal Grading.xlsx," tab "EW Cost," Lines 65-66
[42] *See* NS Reply, p. III-F-48
[43] *Id.*
[44] *Id.* p. III-F-49
[45] *Id.* p. III-F-50.

them incorrect. DuPont demonstrated the feasibility of its unit costs in Opening and reinforces that demonstration in Rebuttal.

NS's final Chart III-F-4 compares DuPont's average unit cost for all types of earthwork to the Means Handbook cost for common earthwork shown in DuPont's Opening workpapers.[46] NS claims DuPont "jettisoned" the Means Handbook costs after seeing the result "in an attempt to depress DRR's excavation costs."[47] This is simply not true. As explained in Opening, DuPont included the common earthwork and common earthwork-adverse unit costs calculated using the Means Handbook in order to calculate the adjustment ratio to apply to the Trestle Hollow Project cost to develop common earthwork costs for adverse territory.[48]

In summary, DuPont used the Trestle Hollow Project unit cost because it is a supportable, feasible and superior real-world substitute for the Means Handbook costs for common earthwork. DuPont's use of the Trestle Hollow Project unit cost reflects the use of actual earthwork costs from a contractor's bid in the same way that actual costs were substituted for Means Handbook costs in *WFA/Basin* and *AEPCO*. As shown in *WFA/Basin*, *AEPCO* and this proceeding, actual bids from contractors are lower than Means Handbook costs. This should be expected as the Means Handbook costs do not include any projects comparable in size to a stand-alone railroad such as the DRR

NS has also included roadbed preparation costs for the Partially Owned Lines that the DRR operates over using trackage rights. As explained in Part III-F-13, the DRR is not building these lines and does not have to pay any part of their reproduction or acquisition cost As such, DuPont has excluded roadbed preparation costs for these line segments

[46] *Id*, p. III-F-51
[47] *Id*, p III-F-50.
[48] *See* DuPont Opening, p III-F-15 This is also discussed later in the common earthwork unit cost section

Rebuttal Table III-F-3 below summarizes the differences in the parties' roadbed preparation costs

Table III-F-3
Comparison of Roadbed Preparation Costs
($ in thousands)

Item	DuPont Opening[1/]	NS Reply[2/]	DuPont Rebuttal[3/]
(1)	(2)	(3)	(4)
1. Earthwork			
a. Common	$666,288	$2.382,946	$706.918
b. Loose Rock	507,986	690,839	539.461
c. Solid Rock	1.265.234	1,977.648	1.322.526
d Borrow	674.182	742,922	678.569
e. Subtotal	$3,113,690	$5.794,355	$3.247,474
2. Clearing & Grubbing	$81,191	$127.954	$84.232
3. Drainage			
a Lateral Drainage	$49,919	$50,086	$50,086
b Yard Drainage 4/	0	135.385	0
4. Culverts	131,919	746.813	217,924
5 Retaining Walls	346.129	938,032	377.274
6. Rip Rap	36,908	36,989	36,943
7 Road Surfacing for Detours	524	524	524
8. Relocation of Utilities	147	147	147
9. Topsoil Placement / Seeding	1.439	867	1,440
10. Land for waste quantities	206,860	611.365	320.125
11 Environmental Compliance	177	177	177
12 Subgrade Preparation	0	76,476	0
13 Finish Grading	0	68.592	0
14. Lighting	0	267.146	0
15 Dust Control	0	7.250	0
16. Total	$3,968.903	$8,862.160	$4.336.346

1/ DuPont Opening errata, p III-F-7, Table III-F-4.
2/ NS Reply e-workpaper "DRR Open Grading errata NS Reply.xlsx," Tab "Summary"
3/ DuPont Rebuttal e-workpaper "DRR Rebuttal Grading xlsx" and "Culvert Construction Costs Rebuttal xlsx"
4/ Costs included by DuPont in building site development costs

a. Clearing and Grubbing

i. Quantities of Clearing And Grubbing

NS accepted DuPont's methodology for developing clearing and grubbing quantities based on the ICC Engineering Reports.[49] The parties' difference in quantities is attributable to a difference in route miles and track miles. On Rebuttal, DuPont has increased its Opening route and track miles, and, therefore DuPont's Rebuttal clearing and grubbing quantities have increased.[50]

ii. Clearing and Grubbing Unit Costs

On Opening, DuPont utilized a unit cost of $2,000 per acre, indexed to $2,111 (June 1, 2009 cost levels), to both clear and grub based on the Trestle Hollow Project cost. DuPont conservatively applied $2,111 per acre for clearing and grubbing to all of the DRR acres of clearing despite the fact that over 70 percent of the DRR's acres would only require clearing, and not grubbing, which can be done with a brush rake at less than $250 per acre – a point that NS admits.[51] Nevertheless, NS argues against DuPont's use of the Trestle Hollow Project unit cost by suggesting that DuPont has not shown a link between the Trestle Hollow Project clearing and grubbing costs and what has to be cleared and grubbed on the DRR.[52] As noted above, the Trestle Hollow Project is a feasible and valid project to use in determining costs for the DRR. The Trestle Hollow Project included some tricky clearing and grubbing due to the terrain involved, and application of the Trestle Hollow Project clearing and grubbing unit cost to the entire DRR probably overstates the cost versus the overall clearing requirements for the DRR's right-of-way. In particular, the trees on the Trestle Hollow Project were located in part on the

[49] *See* NS Reply, p. III-F-52.
[50] *See* DuPont Rebuttal e-workpaper "DRR Rebuttal Grading.xls," tab "Other Items."
[51] *See* NS Reply, p. III-F-54.
[52] NS also argues that DuPont has not shown whether the 30 acres cleared reflects the total project acreage or just the part that had to be cleared. If NS is attempting to suggest that there were other unknown or higher unit costs, DuPont's engineers note that no other clearing was needed.

right-of-way, but trees on the hillsides were also removed As the aerial photos included on Opening show, the trees were located in undisturbed stands.[53] Many of these trees had never been clear cut (or not cut in many years) due to their location. In other words, NS's complaint is a red herring· The Trestle Hollow Project clearing and grubbing cost per acre is more than adequate for the DRR

Instead of using the Trestle Hollow Project unit cost, NS relied on Means Handbook unit costs While DuPont included a calculation of clearing and grubbing costs based on the Means Handbook in its Opening workpaper,[54] DuPont did not rely on these calculations because actual project costs, where available and appropriate, are superior to Means Handbook costs.

On Reply, NS uses the Means Handbook calculations but makes two adjustments. NS cuts the production rate of the clearing crew in half, thereby doubling the cost per acre, and adds another crew to load and haul away the cleared material [55] Neither adjustment has any merit

NS claims that the rate of production for the clearing crew is 8 acres per day. However, NS claims that half of the time, this crew would be stockpiling material and would only be able to clear 4 acres per day. NS has provided no evidence supporting its contention that the 8 acres per day rate is for clearing material only and not moving the material Clearing means clearing, not cutting down and leaving in place.

In addition, NS has not explained why the cleared organic materials must be hauled away The DRR is built on a 100-foot right-of-way. There is ample room to simply place the materials on the edge of the right-of-way where they can decompose naturally. Furthermore, even assuming for the sake of argument that a second crew is needed, which DuPont does not agree with, there is no way for NS to know the volume of material it claims would need to be

[53] *See* DuPont Opening e-workpaper "Aerial Photos #1 pdf."
[54] *See* DuPont Opening e-workpaper "DRR Open Grading errata xlsx," tab "Other Items "
[55] *See* NS Reply, pp. III-F-54-56

moved. In addition, NS presents no evidence as to how much material the added crew could move in a day NS simply adds the costs for a crew for a day and assumes that it would only be able to handle the material cleared from 4 acres Without knowing how much material there is to be moved and how much material a crew can move in a day, it is impossible to determine the cost.

In any event, NS's adjustments to the Means Handbook unit costs are unnecessary and unsupported Furthermore, these same adjustments have been rejected by the STB.[56]

The Trestle Hollow Project unit cost used by DuPont in Opening is feasible and more appropriate for the DRR. DuPont continues to use it on Rebuttal.

b. Earthwork

i. Earthwork Quantities

(1) DRR Line Segments

NS accepts DuPont's methodology for the development of earthwork quantities for the DRR line segments. However, NS claims there were a few errors in DuPont's input of the quantities taken from the ICC Engineering Reports [57]

DuPont has reviewed each of NS's claimed input errors. DuPont has accepted some, but not all, of NS's corrections. Furthermore, NS did not properly incorporate the corrections. For example, where an earthwork quantity needed to be changed for a particular valuation section, NS did not make the change at the input level but rather assigned all of the difference to the DRR This is erroneous The proper correction method is to make the change at the input level so the quantities per mile can be adjusted for modern roadbed width and then applied to the DRR miles assigned to that valuation section If the DRR does not traverse the entire valuation

[56] *See AEPCO*, pp 83-84.

[57] *See* NS Reply, pp III-F-56-57 and e-workpaper "DRR Open Grading errata NS Reply xlsx," tab "DRR – ICC Quantity Errors " The alleged input errors identified by NS included not only earthwork quantities but other items as well

section, all of the difference is not applicable to the DRR DuPont has addressed in detail each of NS's alleged input errors and explained NS's erroneous correction method in its rebuttal workpapers.[58]

DuPont also notes that NS has errors in its calculation of earthwork quantities for several of the ICC Engineering Report valuation sections. For some unexplained reason, NS rearranged the order of the valuation sections on many levels of its grading spreadsheet. This rearranging created numerous errors in NS's calculation of earthwork quantities NS's first error is on the calculations level. On Opening, DuPont had to adjust the calculation formula of revised earthwork quantities for four valuation sections in order to eliminate negative quantities.[59] On Reply, NS rearranged the valuation section order. NS properly moved the adjusted formula for three of the valuation sections,[60] did not move the adjusted formula for one valuation section,[61] and left the adjusted formulas in the same locations which erroneously impacted the calculations of four other valuation sections.[62]

NS's second error is on the earthwork by valuation section level Two valuation sections had zero earthwork quantities on the ICC Engineering Reports so DuPont ensured that these valuation sections would still have zero earthwork quantities after adjusting for the modern roadbed width.[63] By rearranging the order of the valuation sections, NS erroneously altered the quantities per mile of four valuations sections For the two valuation sections with zero

[58] *See* DuPont Rebuttal e-workpaper "DRR Rebuttal Grading xlsx," tab "Response to NS ICC errors."

[59] *See* DuPont Opening e-workpaper "DRR Open Grading errata.xlsx," tab "Calculations," Column (H), spreadsheet lines 54, 67, 97 and 200 (valuation sections CNOTP-1-OH, ERIE-15-NY, NONE-2-LA and WAB-5D-IL)

[60] *See* NS Reply e-workpaper "DRR Open Grading errata NS Reply xlsx," tab "Calculations," Column (H), spreadsheet lines 108, 36 and 142 (valuation sections ERIE-15-NY, NONE-2-LA and WAB-5D-IL).

[61] *Id*, spreadsheet line 167 (valuation section CNOTP-1-OH)

[62] *Id*, spreadsheet lines 54, 67, 97 and 220 (valuation sections CNOTP-1-KY, CPR-8-OH, SR-64C-TN and NW-5-MD).

[63] *See* DuPont Opening e-workpaper "DRR Open Grading errata xlsx," tab "Eng Rep Input," Column (H), Line Nos 57and 65 (valuation sections KM-1-WV and KM-7-OH) and tab "Earthwork by val sec," Line Nos 57 and 65

earthwork quantities, NS incorrectly showed quantities. For two other valuation sections, NS incorrectly showed zero quantities.[64]

As discussed in Part III-B, the parties disagree on the route and track miles for the DRR. All of the difference in route miles and part of the difference in track miles is driven by NS's inclusion of the "Partially Owned Lines," which the DRR is not building.

(2) DRR Yards

NS accepted DuPont's methodology for the development of yard earthwork quantities "[e]xcept in special circumstances."[65] There are two problems with NS's earthwork cubic yard calculations for yards. First, as shown in Parts III-B and III-C, NS greatly overstated the DRR's yard track miles. Second, the "special circumstances" referred to by NS, but not discussed in its text, apply to NS's automobile and intermodal yards For these yards, NS calculated the excavation quantities for the entire square footage of the facility, instead of just the track feet, leading to a gross overstatement in yard excavation quantities.[66] Yard excavation quantities are for yard track only Any excavation for non-track areas is included in the building and facility costs. Including non-track area quantities in yard track excavation quantities results in a double-count of excavation quantities. NS's calculations should be rejected.

On Rebuttal, as discussed in Parts III-B and III-C, DuPont has modified its yard track quantities DuPont's rebuttal yard earthwork quantities are detailed in Rebuttal e-workpaper "DRR Rebuttal Grading.xls," tab "Yards."

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[64] *See* NS Reply e-workpaper "DRR Open Grading errata NS Reply xlsx," tab "Earthwork by val sec," Line Nos 57, 65, 185 and 193 (valuation sections NYC-231-MI, CG-11-GA, KM-1-WV and KM-7-OH)

[65] *See* NS Reply, pp. III-F-57-58

[66] *See*, for example, NS Reply e-workpaper "Small Auto Center.pdf" NS calculates 42,941 CY of excavation based on 1,159,415 square feet for the entire facility If NS's 6,778 track feet are used, the grading quantity equals only 6,276 CY, less than 16% of the quantity included by NS NS performed this same erroneous calculation for all of its automobile and intermodal yards.

(3) Total Earthwork Quantities

As discussed above, and in Parts III-B and III-C, DuPont has included additional route miles, second main and passing siding miles and yard miles on Rebuttal. This results in a small increase over Opening in the earthwork quantities for the DRR. Rebuttal Table III-F-4 below compares the parties' earthwork quantities.

Table III-F-4
DRR Earthwork Quantities by Type of Material Moved
(Cubic yards in thousands)

Type of Earth Moved	DuPont Opening[1/]	NS Reply[2/]	DuPont Rebuttal[3/]	NS Reply Over / (Under) DuPont Rebuttal[4/]
	(1)	(2)	(3)	(4)	(5)
1. Common (incl yards)	373,698	407,471	384,991	22,480
2. Louse Rock	49,245	51,293	50,296	997
3 Solid Rock	92,078	109,419	93,512	15,907
4 Borrow	43,245	47,343	43,526	3,817
5 Total	558,266	615,526	572,325	43,201

1/ DuPont Opening e-workpaper "DRR Open Grading errata.xlsx," tab "EW Cost "
2/ NS Reply e-workpaper "DRR Open Grading errata NS Reply.xlsx," tab "EW Cost "
3/ DuPont Rebuttal e-workpaper "DRR Rebuttal Grading xls," tab "EW Cost."

ii. Earthwork Unit Costs

(1) Common Excavation

As noted previously, DuPont used the Trestle Hollow Project earthwork unit cost to develop its Opening common earthwork costs, which DuPont has shown to be a valid and feasible unit cost to apply to the DRR's construction. NS used the Means Handbook costs for common excavation contained in DuPont's Opening workpapers [67]

As discussed above in the response to NS's attack on the Trestle Hollow Project costs, the Means Handbook costs overstate the common earthwork costs that the DRR would be able to obtain for several reasons. DuPont continues to use its Opening unit cost based on the Trestle Hollow Project.

[67] As discussed below in the section on adverse territory excavation costs, DuPont included the Means Handbook unit costs for both common excavation and common excavation – adverse only to develop the ratio used to adjust the Trestle Hollow Project unit cost to reflect work in adverse territory

(2) Common Excavation – Adverse

On Opening, DuPont identified certain portions of the DRR that traversed adverse terrain.[68] On Reply, NS accepted DuPont's adverse line segment designations but added additional line segments.[69] On Rebuttal, DuPont has accepted NS's adverse territory designations.[70]

On Opening, DuPont developed the adverse territory common earthwork unit cost as follows. First, DuPont calculated the ratio between the Means Handbook-based common earthwork unit cost and the Means Handbook-based adverse common earthwork unit cost, which was developed using the adverse equipment package from the Eastern cases. DuPont then applied this ratio to the Trestle Hollow Project common earthwork cost to obtain the increased common earthwork cost for adverse mountainous territory.[71]

NS complains that DuPont's method should be rejected because the Trestle Hollow Project costs are inappropriate for the DRR (a point which DuPont has rebutted, as discussed previously) and because the Trestle Hollow Project does not involve any adverse conditions. As DuPont has noted, there were certain aspects of the Trestle Hollow Project that were considered adverse but DuPont has used the Trestle Hollow Project unit cost as representative of common earthwork costs in non-adverse conditions. NS's criticism misses the point. The whole purpose for creating the ratio of the Means Handbook costs was to increase the Trestle Hollow Project cost so that it would be representative of costs in adverse terrain. The Means Handbook costs used by NS for common and adverse territory have few components in common but the

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[68] *See* DuPont Opening, pp. III-F-12-13.

[69] *See* NS Reply, pp. III-F-62-64 and e-workpaper "Adverse Territory Identification Narrative.pdf."

[70] DuPont made one correction to NS's adverse territory designations. NS classified 40% of the Binghamton, NY to Buffalo, NY segment of the DRR as adverse. *See* NS Reply e-workpaper "Adverse Territory Identification Narrative.pdf" at page 4. However, in its calculations, NS used 50%. *See* NS Reply e-workpaper "DRR Open Grading errata NS Reply.xlsx," tab "EW Cost," Line Nos. 72 through 77. DuPont has used 40 percent for these segments in Rebuttal.

[71] *See* DuPont Opening, p. III-F-15.

relationship is valid. Multiplying the ratio developed by DuPont times the Means Handbook common unit cost would produce the same unit cost as aggregating the unit costs for the various Means Handbook components Stated differently, using a ratio to adjust a cost is valid.

In fact, ratios of this kind are commonly used For example, the parties use location factors (ratios) to adjust Means Handbook unit costs. Ratios are used to allocate the revised earthwork quantities for each valuation section to the different types of earthwork. Ratios are used to increase the clearing and grubbing quantities per mile from the ICC Engineering Reports to reflect the modern roadbed widths of the DRR. Ratios are used by both parties in numerous places in the development of the DRR's construction costs DuPont's methodology simply recognizes the relationship between adverse and normal conditions established in prior cases.

NS made several adjustments to the Means Handbook unit costs for common earthwork in adverse territory. The first adjustment NS made was to increase the distance travelled by the earthwork haulers from ½ mile to 1 mile.[72] NS's stated rationale is that the haul distance for the high-capacity haulers used for excavation of common-adverse, loose rock and solid rock must equal the haul distance implicit in the unit cost for the elevated scrapers used for common excavation. NS has not provided any evidence that the distances implicit in the unit costs used by DuPont are unreasonable NS has provided no analysis of the original topography. There are no distances shown in the ICC Engineering Reports other than Train Overhaul categories which both parties converted to borrow quantities to eliminate the long-haul transportation of earthwork DuPont developed its unit costs for hauling based on the Means Handbook in the same manner and using the same cost items as used by complainants and defendants and accepted by the STB in past proceedings. NS has raised this distance issue for the first time ever

[72] *See* NS Reply, p III-F-60.

in a SAC proceeding simply as a way to artificially increase the DRR's earthwork costs. DuPont does not accept NS's hauling distance adjustment.

The next adjustment made by NS was to increase the costs for hauling and spreading material to reflect its alleged swell factors. As discussed below in the Swell section, NS's adjustment should be rejected.

The third adjustment made by NS was to add finish grading costs. As discussed below in the Fine Grading section. NS's additional cost should not be included

The final adjustment was to the size of the hauler used to move the material. On Opening, DuPont used a 42-CY hauler NS disputes this and substitutes a 22-CY hauler only for hauling material in adverse conditions. After reviewing NS's Reply. DuPont agrees that in some situations. the 42-CY hauler is not practical. However. DuPont does not agree that the 42-CY hauler cannot be used for part of the construction. In fact. NS includes a workpaper that demonstrates that a 42-CY hauler is practical for half of the construction process[73] and. furthermore, NS uses a 50/50 mixture of the 42-CY and 22-CY haulers for its loose rock and solid rock hauling of material.[74] In the common-adverse unit cost discussion. NS states that the 42-CY hauler is totally unsuitable for adverse terrain construction but does not provide any support for its statement. The roadbed width during the different phases of construction shown in NS's workpaper[75] would be the same in adverse territory and DuPont sees no reason why the 50/50 mixture would not also apply to adverse territory.

[73] *See* NS Reply workpaper "48-52_Hauler_Roadbed Stage of Construction.pdf"

[74] Although NS Reply workpaper "48-52_Hauler_Roadbed Stage of Construction pdf" seems to advocate a 48/52 split, NS's earthwork unit costs reflected a 50/50 split for loose rock and a 45/45 split for solid rock (with 10% in 25-ton dump trucks) *See* NS Reply e-workpaper "DRR Open Grading errata NS Reply xlsx." tabs "Unit Costs" and "Unit Cost Modified "

[75] *See* NS Reply workpaper "48-52_Hauler_Roadbed Stage of Construction pdf"

NS also plays the production capacity card in trying to justify the use of the 22-CY hauler 100% in adverse territory by claiming that the 42-CY hauler is a poor match for the 3-CY excavator.[76] This argument has no merit. NS accepted the use of the 3-CY excavator not only for common-adverse but also for loose rock and solid rock where NS used the 50/50 split between the 42-CY and 22-CY haulers.[77] Even NS does not believe its argument against the 50/50 split in adverse territory

On Rebuttal, DuPont has modified its hauler costs to reflect a 50/50 mixture of the 42-CY and 22-CY haulers.

Based on the above discussion, DuPont continues to use its Opening methodology for calculating the common earthwork unit cost for adverse territory DuPont's adjustment ratio has increased from 1.24 in Opening to 1.32 on Rebuttal to reflect the one modification to the Means Handbook common-adverse unit costs for the split between the two hauler sizes

(3) Loose Rock Excavation

NS made four modifications to DuPont's Opening loose rock excavation costs. NS increased the hauling distance, included the swell additive, added finish grading costs and modified the hauler size to reflect a 50/50 split between 42-CY and 22-CY haulers.[78] As explained above, DuPont does not agree with the increase in the hauling distance As explained below, DuPont does not agree with the swell additive or the addition of finish grading costs As explained above, DuPont has accepted the split between the two hauler sizes.

On Rebuttal, DuPont has modified its Opening unit costs for loose rock excavation only for the split between the two hauler sizes.

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[76] *See* NS Reply, pp. III-F-66-67.

[77] *See* NS Reply e-workpaper "DRR Open Grading errata NS Reply xlsx," tabs "Unit Costs" and "Unit Cost Modified "

[78] *See* NS Reply, pp III-F-68-70 and e-workpaper "DRR Open Grading errata NS Reply.xlsx," tabs "Unit Costs" and "Unit Cost Modified "

(4) Loose Rock Excavation – Adverse

For loose rock excavation in adverse territory, NS made the same four modifications to DuPont's Opening unit cost identified above under loose rock excavation except that NS used the 22-CY hauler 100% of the time instead of the 50/50 split.[79] DuPont's response is the same as above except that, for the reasons discussed above under common excavation in adverse territory, DuPont does not agree with NS on the use of the 22-CY hauler 100 percent of the time.

On Rebuttal, DuPont has modified its Opening unit costs for loose rock excavation in adverse territory only for the 50/50 split between the two hauler sizes.

(5) Solid Rock Excavation

NS made the same adjustments to DuPont's solid rock excavation costs for hauling distance, swell, finish grading and hauler split. DuPont's response is the same as previously stated, i.e., rejecting NS's adjustments save for the 50/50 split between the two hauler sizes. NS complains about DuPont's two types of rock blasting costs but used them in Reply. NS made two other adjustments to reflect what NS characterizes as the handling of boulders.[80]

NS estimates that 20 percent of the solid rock excavation quantities shown on the ICC Engineering Reports for the valuation sections covering the DRR would be boulders.[81] For this 20 percent, NS used the cost to excavate and load boulders and the cost to haul boulders. DuPont disagrees with NS's position.

NS provides no details of its estimate that 20 percent of the materials left after blasting are boulders that would require special handling beyond the normal production rates achievable with the 3 CY shovel. All that NS has shown is that some large boulders remained after blasting

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[79] *See* NS Reply, p. III-F-70 and e-workpaper "DRR Open Grading errata NS Reply.xlsx," tabs "Unit Costs" and "Unit Cost Modified."

[80] *See* NS Reply, pp. III-F-71-73 and e-workpaper "DRR Open Grading errata NS Reply xlsx," tabs "Unit Costs" and "Unit Cost Modified."

[81] *See* NS Reply, p. III-F-72. Although NS states 20 percent, it used 10 percent in its workpapers. *See* e-workpaper "DRR Open Grading errata NS Reply.xlsx," tabs "Unit Costs" and "Unit Cost Modified."

on one highway project in the Western U.S. unrelated to the DRR.[82] NS has provided no details on the blasting procedures used or the desired results In any event, blasting is not a random exercise. Blasting is planned with a number of end results in mind, including the size of rocks that are desired and the landing zone for the materials, and can be quite precise. Indeed, variations in the desired end result are achieved by placing the charges in different locations, varying the spacing of the charges, and varying the depth of the charges.[83] In addition, as explained in *AEP Texas*, the Means Handbook costs for handling blasted materials assumes that blasting would produce materials small enough to be handled by the three (3) CY shovel that AEP Texas used to "excavate and load blasted rock," which is the same unit cost that DuPont is using.[84] Similar adjustments have been rejected by the STB in past proceedings.[85] On Rebuttal, DuPont does not include NS's costs for moving boulders

DuPont also notes that NS's unit cost for moving boulders repeats the same flaw that afflicted the railroads' evidence in *AEP Texas* and the prior *AEPCO* proceeding – using the unit cost to "Excavate and Load Boulders." The obvious problem with NS's approach is that it represents a cost to move boulders that have not been blasted. Not surprisingly, it is more expensive to excavate boulders that are in place rather than move rocks that have been blasted. Thus, NS's costs must be rejected.

The parties agree that the unit cost for solid rock excavation should be comprised of a mixture of 50 percent solid rock costs and 50 percent loose rock costs.[86]

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[82] DuPont notes that NS's Reply relies on the same photos and scant data that its engineers collected in 2003 for a prior STB proceeding.

[83] *See* DuPont Rebuttal e-workpaper "blasting pdf" (desired fragmentation is obtained by checking the drill pattern, spacing and burden to be blasted)

[84] *See AEP Texas* Rebuttal Narrative (Public Version) filed July 27, 2004, p III-F-56

[85] *See AEP Texas* at 82 and *AEPCO* at 90

[86] *See* NS Reply, p III-F-72.

On Rebuttal, DuPont has modified its Opening unit costs for loose rock excavation only for the split between the two hauler sizes.

(6) Solid Rock Excavation – Adverse

On Reply, NS introduced a new unit cost category of solid rock excavation in adverse areas.[87] In prior STB proceedings, a single solid rock excavation unit cost was developed and averaged with loose rock excavation costs in adverse conditions to arrive at a solid rock excavation cost in adverse territory.

A review of NS's workpapers reveals that the only difference between NS's solid rock excavation cost in normal and adverse conditions is that NS used the 22-CY hauler exclusively in adverse conditions rather than the 50/50 split between the 22-CY and 42-CY hauler.[88] As discussed above, DuPont rejects NS's exclusive use of the 22-CY hauler in adverse territory.

On Rebuttal, DuPont continued the accepted practice of averaging its single solid rock excavation unit cost with loose rock excavation costs in adverse territory in calculating the solid rock excavation unit cost in adverse territory.

(7) Embankment/Borrow

NS states that it accepted DuPont's unit cost for borrow. However, a review of NS's workpapers reveals that NS added finish grading costs to DuPont's borrow unit cost. As discussed below in the Fine Grading section, NS's additional cost should be rejected. As such, DuPont continues to use its Opening borrow unit cost.

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[87] *Id.* p. III-F-73

[88] *See* NS Reply e-workpaper "DRR Open Grading errata NS Reply.xlsx," tabs "Unit Costs' and "Unit Cost Modified."

(8) Other Earthwork Quantities and Unit Costs

(a) Stripping

NS adds an additional cost for stripping on the basis that such activity is required for roadbeds built on embankments, and that the Trestle Hollow Project, which included stripping (where necessary) in the earthwork costs, is not applicable. DuPont has already addressed the applicability of the Trestle Hollow Project

NS claims that all roots and vegetation must be removed from embankment areas, or else soft spots will cause the embankment to shift and the ground must be filled and compacted NS further claims that grubbing does not cover this.

NS's additional cost is unnecessary. NS acts as though the original builders of the lines comprising the DRR had no concept of what was necessary to construct rail lines. Any required vegetation removal, removal of soft spots and areas requiring filling and compaction would no doubt have been addressed NS has not identified any areas on the DRR where the roadbed has been replaced because these items were not accounted for in the initial construction of the lines comprising the DRR. The ICC Engineering Report clearing and grubbing quantities include all clearing and grubbing necessary to construct the roadbed. This would presumably include all clearing and grubbing necessary prior to building embankments. NS has not demonstrated otherwise. Likewise, the ICC Engineering Report earthwork quantities include all material moved to construct the roadbed. This would include the removal of unsuitable material to build an embankment. NS has not demonstrated otherwise. As both parties assumed that 30 percent of excavation quantities are wasted, and included the land necessary for the placement of waste quantities, any unusable material removed from embankment areas would be included.[89]

[89] Excavation quantities on the ICC Engineering Reports are not labeled as being confined only to cut areas, they are simply the CY of earthwork excavated

NS has ignored Board precedent with regard to stripping. In past proceedings, the Board rejected additional stripping costs because "the top 6 inches of soil would be removed during excavation and because topsoil removal is included in waste costs, there would appear to be no need for a separate charge for stripping To the contrary, including such an additional cost would result in a double count."[90] For the above reasons, NS's additional costs are unwarranted.

DuPont also notes that NS's calculations are unreliable for at least two reasons First, NS relies on a fill width calculated in the grading spreadsheet. This fill width is skewed because of the methodology that allocates virtually all of the earthwork quantities to main line miles through the assignment of only 1-foot of excavation to yard and other miles. While both parties utilize this methodology, it creates overstatements in earthwork quantities per mile and fill and cut widths based on those quantities, especially for short segments with a large amount of yard track.[91] Both parties accept this anomaly for the calculation of earthwork quantities per mile. However, using the overstated fill and cut widths for other quantity calculations results in an overstatement of those quantities.

Second, the length of borrow (and the resulting calculation of quantities of excavation for stripping) is based on the miles of the valuation section and not the miles of the valuation section built by the DRR.[92] This results in a gross overstatement of quantities

(b) Undercutting

On Opening, DuPont's engineers did not include a separate cost for undercutting. DuPont notes that the Board has repeatedly rejected additional costs for this item.[93] In addition,

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[90] *See PSCo/Xcel*, p. 671 *See also AEP Texas*, p. 79 and *AEPCO*, p. 84-85

[91] *See*, for example, the fill widths for valuation sections NYC-218-IL, NYC-217ABCDE-IL, PFWC-1a-PA, PFWC-1b-PA, PFWC-1c-PA and PFWC-1d-PA shown in NS Reply e-workpaper "DRR Open Grading errata NS Reply xlsx," tab "Stripping," Column (H)

[92] *See* NS Reply e-workpaper "DRR Open Grading errata NS Reply xlsx," tab "Stripping," Columns (F) through (M)

[93] *See WFA/Basin*, p 83, *AEP Texas*, p 79, *Duke/NS*, p 176, *CP&L*, p 313; *Duke/CSXT*, p. 480.

the excavation unit costs utilized by DuPont include excavation of unsuitable materials when necessary at no additional cost.[94]

On Reply, NS claims that the ICC Engineering Reports do not "specify the amount of undercutting" and, therefore, NS had to estimate the amount of undercutting required under embankments on the DRR. NS "superimposed" wetland maps over the DRR route and determined that 155.9 miles of the DRR is within wetlands. NS assumed undercutting of an average of two feet of material in these areas, which NS added to its common excavation quantities. NS then added borrow material to replace the undercut material.[95]

NS's additional undercutting costs should be rejected for several reasons. First, NS provides no evidence that ICC Engineering Report earthwork quantities do not include undercutting quantities. In fact, the ICC Engineering Reports include quantities of "subsidence" which both parties included in their respective earthwork quantities taken off the ICC Engineering Reports.[96] Virtually all of the lines being replicated by the DRR were built decades before the ICC valuations were performed during the 1910s and 1920s, so the subsidence quantities on the ICC Engineering Reports would likely capture all undercutting since the original construction.

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[94] *See* DuPont Opening e-workpaper "Trestle Hollow Specifications.pdf" at 156 ("No additional payment will be made for undercutting. Work related to undercut and replacement is considered a standard grading practice to achieve a suitable subgrade and shall be considered as incidental to excavation and fill placement. Direct payment for work related to undercut and replacement will not be made.")

[95] *See* NS Reply, pp. III-F-79-80.

[96] *See* DuPont Rebuttal e-workpaper "Rebuttal foundation excavation and subsidence.xlsx" for an identification of the valuation sections for which the ICC Engineering Reports include quantities of subsidence. A review of the grading spreadsheets used by both parties reveals that the subsidence quantities for these certain valuation sections are included in the earthwork quantities taken off the ICC Engineering Reports. *See also* DuPont Opening e-workpaper "DRR Open Grading errata.xlsx," tab "Eng Rep Input" and NS Reply e-workpaper "DRR Open Grading errata NS Reply.xlsx," tab "Eng Rep Input."

Second, NS presents no evidence of instances where the original roadbed construction for any of the lines replicated by the DRR had to be replaced, or the subgrade adjusted, because undercutting was not performed during the original construction.

Third, NS notes that the ICC Engineering Reports are based in part on "observations of physical characteristics of topography or structures that were readily observable parts of the roadbed construction effort."[97] This indicates that if the area surrounding an embankment showed signs of unsuitable material and/or warranted grubbing, then the quantities would have been included in the quantities reported on the ICC Engineering Reports DuPont also notes that the ICC Engineering Reports do not specify the quantity of cubic yards of excavation used as embankment, and, therefore, the number of undercutting cubic yards cannot be distinguished from this material – but since those cubic yards are rolled into the quantities, adding undercutting costs would result in a double count. In addition, both parties assumed that 30% of the excavation quantities would be wasted (*i.e.*, unsuitable materials) Thus, the undercutting quantities estimated by NS are already accounted for in the waste quantities.

Finally, adding borrow is absurd. Undercutting a small amount of material should not require the trucking in of borrow Suitable replacement materials can be derived from the excavation occurring on-site.

NS's undercutting quantities are also unsupported. NS has provided no evidence supporting its 2-foot undercutting depth. Furthermore, NS's identification of the miles it claims require undercutting is totally unsupported NS refers to wetlands maps that it overlaid over the DRR route to identify areas requiring undercutting.[98] These maps actually consist of one map

[97] *See* NS Reply, p. III-F-79
[98] *Id*, p. III-F-80.

which shows the entire 8,100-mile DRR system on a single page.[99] As part of the process to develop its estimate of the undercutting quantities, NS identifies the miles of the segments of the DRR where undercutting is allegedly required. This identification consists of milepost-specific segments of the DRR, many of which are very short. These mileposts are range-valued with no support.[100] Whatever magic NS employed to translate the one page map of the DRR to very short milepost-specific segments of the DRR was not included in its workpapers

In light of the above, DuPont has not included any additional costs for undercutting.

(c) Over-Excavation

On Reply, NS added costs for "over-excavation," which it claims is necessary in solid rock cuts In particular, NS argues that 12 inches of over-excavation must occur and then be replaced with compacted fill [101] NS apparently assumes that such excavation, if necessary, was not done when the lines were originally constructed. NS's additive is unnecessary.

NS has provided no evidence that the solid rock quantities on the ICC Engineering Reports do not include "over-excavation" where it may have been necessary Furthermore, NS has provided no evidence of instances where the original roadbed construction for any of the DRR's rail lines had to be replaced because over-excavation was not performed during the original construction.

Finally, DuPont notes that NS's quantities are grossly overstated Like one of the errors identified in NS's stripping quantity calculations, the length used to calculate the quantities of over-excavation is based on the miles of the valuation section and not the miles of the valuation section built by the DRR [102] This results in a significant overstatement of quantities.

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[99] *See* NS Reply e-workpaper "NS Reply – Undercutting Unsuitable Soil – Wetland Exhibit – Map.pdf.
[100] *See* NS Reply e-workpaper "NS Undercutting_Response xls." tab "WETLAND LOCATIONS "
[101] *See* NS Reply, p III-F-81
[102] *See* NS Reply e-workpaper "DRR Open Grading errata NS Reply.xlsx." tab "Over Ex," Column (F)

(d) Fine Grading

On Opening, DuPont's Trestle Hollow Project earthwork unit cost already accounted for fine grading at no additional cost NS argues that the Means Handbook unit costs that NS relies on do not include fine grading activities, and NS has added these costs. NS's additional costs are without merit.

The Trestle Hollow Project unit cost already accounts for this activity, and since that unit cost is valid and feasible, NS's additive is unnecessary. NS claims that it is not clear that final grading is included in the Trestle Hollow Project's lump sum bid price for grading [103] Had NS read the project specifications included in DuPont's Opening workpapers, it would have been clear that final grading was included in the lump sum bid price.[104] In addition, Mr Crouch notes that, in his experience, a motor grader is often not needed to achieve a finished grade.

The Board has rejected this additive in the past in at least four cases.[105] NS attempts to justify its inclusion based on STB decisions in two cases, *Otter Tail* and *Xcel*, where the Board included additional costs for fine grading in part because the Means Handbook lists a separate cost for fine grading [106] The mere fact that the Means Handbook lists a separate cost for an item is not a demonstration that it is applicable to the DRR. Furthermore, as shown above, fine grading is included in the earthwork costs used by DuPont

Finally, DuPont notes that NS's calculation of the $0.11 per CY additive that NS includes with all of its earthwork unit costs is based on erroneous calculations NS's finish grading quantities are grossly overstated. First, NS's calculations suffer from one of the errors identified in NS's stripping quantity calculations, i e., the length used to calculate the quantities of finish

[103] *See* NS Reply, p III-F-83.
[104] *See* DuPont Opening e-workpaper "Trestle Hollow Specifications pdf," page 164, Sections 3 5 15 and 3 5.16
[105] *See AEP Texas*, pp. 82-83, *Duke/NS*, p 176, *Duke/CSXT*, p 480, *CP&L*, pp. 313-314
[106] *See* NS Reply, pp III-F-81-82.

grading is based on the miles of the valuation section and not the miles of the valuation section built by the DRR [107]

Second, NS's calculations rely on a fill height calculated in the grading spreadsheet This fill height is skewed because of the methodology that allocates virtually all of the earthwork quantities to main line miles through the assignment of only 1-foot of excavation to yard and other miles. While both parties utilize this methodology, it creates overstatements in earthwork quantities per mile and fill heights based on those quantities, especially for short segments with a large amount of yard track [108] Both of these errors combined result in a significant overstatement in finish grading quantities.

Based on the above, DuPont has not added any additional costs for fine grading.

(e) Swell

NS made an adjustment to the earthwork unit costs based on the Means Handbook that has only recently been presented in a SAC proceeding, despite the use of Means Handbook earthwork unit costs in some capacity in virtually every SAC proceeding. NS modified the Means Handbook earthwork unit costs to account for the different volumes of material that must be handled depending on whether the material is still in place (bank-measure volume), loose or compacted. NS refers to this in its narrative as its swell adjustment. NS suggests the mark-up would be 25 percent for common excavation, 35 percent for loose rock, and 50 percent for solid rock.[109] DuPont disagrees that this adjustment is necessary, notes that it has been rejected by the

[107] *See* NS Reply e-workpaper "DRR Open Grading errata NS Reply xlsx," tab "Finish Grading," Column (D).
[108] *See*, e g , the fill widths for valuation sections NYC-218-IL, NYC-217ABCDE-IL, PFWC-1a-PA, PFWC-1c-PA, PFWC-1d-PA, KM-5-OH and KM-6-OH shown in NS Reply e-workpaper "DRR Open Grading errata NS Reply.xlsx," tab "Finish Grading," Column (E)
[109] *See* NS Reply, pp.III-F-84-86.

STB in the one proceeding involving this cost that has gone to a decision[110] and it also shows that, even if such an adjustment was warranted, NS overstated the adjustment

NS's position is predicated on the unsupported assumption that the ICC Engineering Reports show bank cubic yards ("BCY") while the Means Handbook uses loose cubic yards ("LCY") for hauling. In fact, the cubic yard quantities shown on the ICC Engineering Reports are not labeled in any way other than as cubic yards. Without a definitive showing of what the cubic yards on the ICC Engineering Reports represent, any adjustment is speculative at best. NS's adjustment is simply another way to arbitrarily and unnecessarily inflate the earthwork costs of the DRR

Contractors are paid on bank quantities as this is the state of the earth prior to construction and the basis for estimating quantities prior to construction The contractor bases his bid on these bank quantities and any additional hauling based on swell is factored into the bid. DuPont has already shown that actual project costs for a large scale project such as the DRR would be lower than the Means Handbook costs Indeed, the Trestle Hollow Project cost supports substantially lower earthwork costs for common excavation, as well as loose rock excavation, than costs based on Means Handbook unit costs To take already higher Means Handbook costs, and increase them to account for the estimated difference in bank and loose quantities, simply adds more costs where none would be warranted if the DRR project were actually bid out. Indeed, the Trestle Hollow Project unit cost already reflects any difference in quantities, to the extent a difference exists As such, DuPont urges the Board to reject this additive as it did in *AEPCO*

While DuPont disagrees with NS's adjustment, it also determined that NS's adjustment is overstated The source that NS relies upon for its adjustment factors does not have a loose rock

[110] *See AEPCO*, p 92

category Nevertheless, NS adds 35 percent for this category versus 25 percent for common earthwork In today's construction world there is no loose rock category of costs; it is either common (which encompasses loose rock) or solid rock. Should the Board accept NS's adjustment despite all its shortcomings, the adjustment should be no higher than 25 percent for loose rock

(9) Subgrade Preparation

On Reply, NS adds costs for subgrade preparation. NS criticizes DuPont for not including separate costs for water for compaction on Opening In certain areas of the DRR, NS adds costs for water for compaction and in other areas of the DRR, NS adds costs for drying the soil prior to compaction [111] NS's additional costs are unsupported and unnecessary.

NS claims DuPont omitted costs for water for compaction because these costs were excluded from the prior cases involving eastern railroads [112] NS is only partially correct. On Opening,[113] DuPont noted that water for compaction costs were excluded from the prior eastern cases because in those proceedings the STB agreed with complainants that the soil contained sufficient moisture.[114] DuPont further stated that, even if water for compaction was needed in a particular area, the common earthwork cost utilized by DuPont included incidental items such as water.[115]

NS spends the remainder of this section describing the analysis it undertook and references several workpapers DuPont has determined that, after a thorough review of NS's analysis and supporting workpapers, NS's analysis does not hold water.

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[111] *See* NS Reply, pp III-F-87-93
[112] *Duke/NS, Duke/CSXT* and *CP&L.*
[113] *See* DuPont Opening, pp III-F-22-23
[114] *See Duke/NS*, pp. 179-180, *CP&L*, p 317, and *Duke/CSXT*, p 483
[115] *See* DuPont Opening, p III-F-23 *See also* DuPont Opening e-workpaper "Trestle Hollow Specifications.pdf" pages 160 (specifications for water for compaction or the drying of soil) and 164 (all grading work is included in the lump sum bid price)

NS claims to have studied the soil conditions along the DRR.[116] In support of this statement, NS references two workpapers. "DRR Physiographic Provinces.pdf" is a three-page document that identifies four physiographic provinces covering the DRR route with general statements regarding the characteristics of each province. "DRR_Geo_Loc.pdf" is a one-page map showing the entire DRR laid over a color-coded map allegedly intended to show the geology of the territory of the DRR. This map also indentifies six (not four) physiographic provinces. This map is confusing at best.

Next, NS posits:

> Attempting to characterize the soil moisture conditions on such a large-scale, regional basis is difficult. The compaction characteristics of a particular soil are typically evaluated at a very local basis as soil conditions can vary dramatically over short distances and with depth.[117]

Then NS describes that it relied on detailed soil information using two Natural Resource Conservation Service ("NRCS") sources – the Soil Climate Analysis Network ("SCAN") and the Web Soil Survey ("WSS").[118] NS then explains:

> The SCAN system collects soil moisture, precipitation, and other climatic information at specific stations across the U.S. and makes it available in real-time over a website. Within most states traversed by the DRR, NS has identified at least one SCAN station near the alignment.[119]

Despite NS's earlier statement that "soil conditions can vary dramatically over short distances," NS is proud that it was able to identify at least <u>one</u> SCAN station in <u>most</u> states traversed by the DRR. A review of NS's workpaper "DRR Soil Moisture Content R1.xlsx" reveals that NS identified twenty-one (21) SCAN stations in only fourteen (14) of the twenty

[116] *See* NS Reply, p. III-F-89
[117] *See* NS Reply, p. III-F-89
[118] *Id*, p. III-F-90
[119] *Id* (footnote omitted)

(20) states traversed by the DRR. Of these twenty-one (21) locations, only three (3) are located on DRR lines.[120]

NS next compared the SCAN data to WSS data for these same twenty-one (21) locations plus another seventeen (17) WSS locations that do not correspond to SCAN locations. NS then magically determined without explanation that thirty-one (31) of these thirty-eight (38) locations are "wet," five (5) are "dry" and two (2) are "at opt."[121]

NS then shifts gears in its text and refers to these thirty-eight (38) locations as thirty-eight (38) major soil types.[122] It is unclear how this transition from location to soil type is made, especially since "silt loam" appears under "Predominant Soil Type" for thirteen (13) of the thirty-eight (38) locations.[123]

Having developed this thirty-eight (38) line table which makes no sense, NS attempts to quantify the cubic yards of earthwork which NS alleges require water for compaction and the cubic yards of earthwork which NS alleges require drying prior to compaction.[124] NS lists each of the 294 segments of the NS's DRR configuration and specifies whether each segment is "wet," "dry" or "opt."[125] In a footnote, NS identifies the source of this identification, for 294 specific segments with specific mileposts, as "See NS Reply WP "DRR_Geo_Loc.pdf" mapping which val segments fall in different soil conditions areas."[126] This is the same letter-sized one-page map of the DRR described earlier as confusing at best. Nowhere on this map is any identification of valuation segments.

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[120] Compare the SCAN locations shown in NS Reply e-workpaper "DRR Soil Moisture Content R1 xlsx" with the location of these stations shown on the map in NS Reply e-workpaper "DRR_Geo_Loc.pdf"
[121] *See* NS Reply e-workpaper "DRR Soil Moisture Content R1 xlsx"
[122] *See* NS Reply, p III-F-92
[123] *See* NS Reply e-workpaper "DRR Soil Moisture Content R1 xlsx."
[124] *See* NS Reply e-workpaper "DRR Open Grading errata NS Reply xlsx," tab "Subgrade Preparation"
[125] *Id*
[126] *Id*

NS's quantity calculations are equally puzzling and erroneous. For segments classified as "wet." NS assumes that every cubic yard of common excavation must be dried. Notwithstanding the fact that the classification of "wet" is totally unsupported. this calculation is a gross overstatement Even assuming that every cubic yard needed to be dried, which DuPont vehemently disputes, only 70% of common excavation is assumed to be reused as embankment and 30% is wasted. There is no reason to remove water from the waste quantities

For segments classified as "dry," NS applies water for compaction costs to 20% of the total common excavation and borrow quantities NS sources its 20 percent factor to William Hay's Railroad Engineering[127] but there is nothing in the sourced material specifying 20 percent. Furthermore, only 70 percent of the common excavation quantities are assumed to be reused as embankment and there is no need to add water for compaction to waste quantities

Finally, NS applies a cost of {{ }} per cubic yard for water for compaction and a cost of {{ }} per cubic yard for the drying of soil [128] Apparently. NS believes that the cost to supply water, drive a truck over the roadbed and spray water costs *over 8 times more* than the costs for a bulldozer with a Disc Harrow Attachment to spread and scarify material to be dried prior to compacting. NS's unit cost for water makes no sense.

As shown above, NS's attempt to classify portions of the DRR needing water for compaction and requiring drying of material prior to compacting is erroneous, unsupported and totally unreliable. The initial identification of which areas are "wet," "dry" or "opt" is unsupported and confusing at best. The link from the identification of these areas on the one-page map to the milepost-specific segments of the DRR is non-existent NS's quantity

[127] *See* NS Reply, p III-F-93 and note 144.
[128] *See* NS Reply e-workpaper "DRR Open Grading errata NS Reply xlsx," tab "Subgrade Preparation "

calculations are erroneous and unsupported. NS's unit cost for water for compaction is ridiculously overstated NS's analyses and costs must be rejected

DuPont continues to exclude additional costs for water for compaction or drying of material for two reasons. First, NS has provided no supported evidence that such costs are required. Second, as noted earlier, DuPont's Trestle Hollow Project unit cost includes the costs for these two items should they be necessary. Furthermore, even though NS claims that the Trestle Hollow Project soil analysis showed optimum water content,[129] DuPont's engineering witness Mr. Crouch, who oversaw the Trestle Hollow Project, recollects that water for compaction was used on the project and, following rain events, the contractor was required to blade up the soil so it would dry. There was no additional compensation for these items per the Trestle Hollow Project specifications identified previously

(10) Land for Waste Excavation

Consistent with the procedures used in other SAC cases, on Opening, DuPont assumed a 30 percent waste ratio for excavation quantities and included the costs to acquire rural land at a cost of $27,000 per acre to place the wasted material [130]

NS accepted DuPont's approach but made several modifications to DuPont's methodology and calculations. NS increased the distance for waste excavation haulers, expanded the footprint of the waste dump sites to allow for the side slope of the waste material and space for equipment to work, placed a waste dump site every mile along the DRR and increased the average cost of the land to {{ }} per acre by including the cost of urban land [131]

[129] *See* NS Reply, pp III-F-43-44.
[130] *See* DuPont Opening, p. III-F-17
[131] *See* NS Reply, pp III-F-75-77 and e-workpaper "DRR Open Grading errata NS Reply.xlsx," tab "Other Costs"

DuPont rejects NS's increased haul distance. NS has not shown that DuPont's distance was not feasible. NS's assumption of evenly spaced and evenly sized waste excavation along the DRR requiring a waste pit every mile is unsupported and erroneous. The 30% waste excavation figure is an average for the entire DRR. Some sections will have no waste excavation as all of the material will be suitable for reuse as embankment. Some sections will have more than 30% waste due to lesser embankment needs or the removal of unsuitable material [132] Waste dump sites are only needed where there is waste and cannot be spaced evenly along the DRR. The sites will be placed alongside the DRR in close proximity to where the waste material is generated [133]

DuPont accepts NS's increase to the footprint of the waste dump sites to account for the side slope of the waste material and space for equipment to work DuPont has increased its land requirements by the same ratio used by NS [134]

DuPont rejects NS's increase in land costs. As noted above, the DRR's waste material dump sites are not evenly spaced or evenly sized. The majority of excavation will take place outside of urban areas as urban areas, with a few exceptions, tend to be more flat. Furthermore, a least-cost, most-efficient railroad such as the DRR will make a concerted effort to balance cut and fill quantities in urban areas resulting in less waste. Finally, DuPont is not aware of any previous SAC proceedings where urban land was used for waste dump sites. In fact, in several other proceedings before the STB, both parties have used the rural cost per acre with costs as low

[132] The 30 percent waste excavation estimate dates back to the early SAC proceedings where the ICC Engineering Report data was first used and 30 percent has been used ever since.

[133] DuPont notes that the increased hauling costs are actually incorporated into NS's Reply earthwork unit costs As discussed above in the earthwork unit cost section, DuPont did not accept NS's unsupported increased hauling distance

[134] *See* NS Reply e-workpaper "DRR Open Grading errata NS Reply.xlsx," tab "Other Costs." {{ }} acres acquired to {{ }} acres needed for the waste material equals a mark-up ratio of {{ }}

as $300 per acre [135] On Rebuttal, DuPont continues to use $27,000 per acre for land for waste excavation

c. Drainage

i. Lateral Drainage

As noted in Part III-B, DuPont has accepted NS's additional route miles in Chicago and the six coal lead tracks. As a result, the parties agree on lateral drainage costs for the DRR.

ii. Yard Drainage

On Opening, DuPont included $28.7 million for yard drainage for the DRR's six (6) major yards in the yard building site development costs [136] For the remaining DRR yards, DuPont's engineers accounted for drainage by properly sloping the yard track roadbed so that water runs off through the ballast into ditches. NS claims that drainage structures must be included for every single foot of its more than 1,500 miles of yard track at a total cost of over $132 million.[137] NS's overstated drainage is unsupported and not needed.

When setting up the DRR yard tracks, the roadbed is sloped to run the surface drainage to ditch lines and the ballast aids in running the storm water toward the roadbed shoulders making drainage structures unnecessary. In addition, NS has not demonstrated that drainage structures are needed for every foot of DRR yard track nor has NS provided any evidence that the drainage it proposes for the DRR is included in all of its own yards. NS simply took a cost per foot that it developed from a single yard and applied it to all DRR yard track During his work with both

[135] *See* Complainant's January 25, 2010 Opening Evidence (Public Version) in *AEPCO*, p. III-F-38 and Defendants' May 7, 2010 Reply Evidence (Public Version), p. III F-28, Complainant's August 31, 2009 Opening Evidence (Public Version) in *Seminole*, pp III-F-38-39 and Defendant's January 19, 2010 Reply Evidence (Public Version), p III-F-45, Complainants' April 19, 2005 Opening Evidence (Public Version) in *WFA/Basin*, p III-F-44 and Defendant's July 25, 2005 Reply Evidence (Public Version), p. III.F-82; Complainant's March 1, 2004 Opening Evidence (Public Version) in *AEP Texas*, pp. III-F-42-43 and Defendant's May 24, 2004 Reply Evidence (Public Version), p. III.F-80, and Complainant's June 13, 2003 Opening Evidence (Public Version) in *Otter Tail*, p III-F-31 and Defendant's October 8, 2003 Reply Evidence (Public Version) at p III F-123 These pages are included in DuPont Rebuttal e-workpaper "Rural land cost.pdf"

[136] *See* DuPont Opening, p III-F-18.

[137] *See* NS Reply, pp III-F-94-95.

NS and Crouch Engineering, DuPont witness Crouch has seen numerous NS and other railroad yards with no track drainage inlet and culvert structures. Furthermore, NS actually prefers that catch basins and similar drainage facilities not be included because they tend to interfere with ballast regulation and they are easily clogged with ballast and fines Indeed, when Crouch Engineering worked on a yard project for NS in Sheffield, AL, no additional drainage for the new yard tracks was included

For the above reasons, DuPont has not included drainage costs for any additional yards on Rebuttal. DuPont has increased its Opening yard drainage costs from $28 7 million to $29 3 million to reflect the increased size of the DRR's six major yards.

d. Culverts

On Opening, DuPont explained its development of culvert costs at pages III-F-18 through 20. DuPont included $131.9 million for culvert costs. NS's response to DuPont's culvert costs is contained at pages III-F-95 through 107 of its Reply. NS included $746.8 million for culvert costs Each of NS's criticisms is addressed below.

i. Culvert Unit Costs

On Opening, DuPont utilized unit costs for corrugated metal pipe ("CMP") derived from a bid from Contech, a vendor that supplies CMP to many railroads Transportation costs for culverts were included at $0.035 per ton-mile. The crushed stone bedding unit cost, including placement, was derived from the Trestle Hollow Project The excavation and backfill pricing was derived from Means Handbook unit costs.[138]

NS accepted DuPont's unit cost for culverts and DuPont's transportation costs of $0 035 per ton-mile but claims that DuPont understated transportation costs by understating the weight

[138] *See* DuPont Opening e-workpaper "Culvert Construction Costs errata xls "

of the culverts DuPont agrees that culvert weights were understated in opening and has accepted NS's change in weights used to calculate culvert transportation costs.

NS rejected DuPont's unit cost for crushed rock bedding material derived from the Trestle Hollow Project cost for sub-ballast for culverts and developed bedding costs from the Means Handbook The Trestle Hollow Project sub-ballast costs are discussed in more detail in Part III-F-3 Regardless, as DuPont has already explained in this section, the Trestle Hollow Project costs are valid and feasible. Consequently, DuPont continues to use its Opening unit cost for the culvert bedding.

NS accepts DuPont's Opening unit costs for excavation and trench backfill based on the Means Handbook [139]

ii. Culvert Installation Plans

NS states that the culvert installation plan in DuPont's Opening text and DuPont's workpapers for trench dimensions are conflicting.[140] On Rebuttal, DuPont has corrected its calculations to match the specified trench width equal to the culvert width plus one foot on either side[141] of the culvert and the trench height of two feet higher than the culvert height. DuPont also accepts NS's other modifications to culvert widths and spacing between pipes on multiple barrels.

DuPont has also corrected its calculation of bedding material to correspond to the corrections in trench width and accepted NS's modification to the height of the bedding material Finally, DuPont has corrected trench backfill quantity to correspond to the applicable trench dimensions.

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[139] *See* NS Reply, p III-F-97.
[140] *Id.* pp III-F-97-98
[141] *See* DuPont Opening, p III-F-19

iii. Culvert Quantities

On Opening, DuPont used the culvert inventories provided by NS in discovery to form an initial culvert list As explained on Opening at page III-F-20, it was necessary for DuPont to make some assumptions regarding the data provided by NS On Opening, DuPont also converted bridges less than 20 feet in length to culverts.

NS identified several issues with DuPont's opening culvert quantities [142] Based on a review of NS's Reply, DuPont has made several modifications to its culvert quantities DuPont has removed from the culvert list the bridges less than 20 feet in length that are bridges over automobile roads and, instead, constructed bridges at those locations DuPont has also accepted NS's modifications to the number and size of CMP culverts required to replace bridges under 20 feet in length and large box culverts based on the flow requirements. DuPont has accepted NS's inclusion of costs for replacement in kind when the costs of CMP exceeded the costs for replacement in kind. DuPont has accepted NS's inclusion of culverts shorter than 20 feet when those culverts are extensions of existing pipes Finally, DuPont has accepted NS's reduction in culvert quantities caused by a misinterpretation of the culvert data provided by NS in discovery

In addition to the differences in quantities described above, DuPont identified a major problem with NS's culvert quantities. Specifically, NS grossly overstated the length of 50 culverts by thousands of feet each. For example, at milepost 258 7 on the Central Division, there are two 135-foot culverts that NS listed as 150.015 feet each.[143] The overstatement in length for these 50 culverts caused a $499 million overstatement in NS's culvert costs.[144]

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[142] *See* NS Reply, pp. III-F-100-107

[143] *See* DuPont Rebuttal e-workpaper "NS culverts with excessive lengths xlsx "

[144] Making only the length corrections in NS's culvert spreadsheet reduces the total cost from $747 million to $248 million *See* DuPont Rebuttal e-workpaper "Culvert Construction Cost errata_NS Reply corrected lengths xlsx," tabs "Unit Costs" and "Active."

NS also claims that DuPont erred by failing to provide culvert inlet protection (silt fences) during construction. On rebuttal, DuPont has included the costs for inlet protection

With the modifications described above, DuPont's revised Rebuttal culvert costs equal $218 million.[115]

e. Other

i. Sideslopes

The parties agree on an average 1 5.1 sideslope.

ii. Ditches

The parties agree on the specifications for ditches

iii. Retaining Walls

On Opening, DuPont developed retaining wall quantities using the ICC Engineering Reports and used gabions for all retaining walls [116] To be conservative, DuPont allocated all of the retaining wall quantities (shown on the ICC Engineering Reports as cubic yards) for a given valuation section to the mainline miles of the valuation section, creating an average quantity of cubic yards of retaining walls per mainline mile for each valuation section. This methodology most likely results in an overstatement of the quantities per mile because it is probable that some retaining walls were necessary to accommodate side tracks, yard tracks or other facilities that the DRR is not constructing DuPont then applied this average quantity per mainline mile to the route miles of the DRR traversing each valuation section

NS accepts DuPont's use of gabions and the allocation process to calculate the average cubic yards per mile but rejects DuPont's development of quantities for the DRR line segments NS claims that DuPont failed to account for increased quantities due to the increased roadbed

[115] *See* DuPont Rebuttal e-workpaper "Culvert Construction Costs Rebuttal xlsx."
[116] *See* DuPont Opening, pp III-F-20-21

width of the DRR, understated quantities by assuming a 1:1 replacement of masonry with gabions, failed to include costs for the preparation of the foundation area of the walls and failed to use treated timber piles for timber piling walls.[147] NS's claims are addressed below.

(1) Increased Roadbed Width

NS brings out a tired, and rejected, argument that the retaining wall quantities should be increased due to differences in roadbed width between those used when the ICC Engineering Reports were compiled and those used today.[148] This argument was raised recently in *AEPCO* and *AEP Texas* and rejected by the Board.[149] Before turning to the merits, DuPont notes that the same engineers that NS is using raised the exact same arguments in *AEPCO* and *AEP Texas*. Indeed, DuPont believes that the workpapers may even be the same, as the date on some of the materials is circa 2003. Regardless, NS has not offered any new rationale that is different than that raised and rejected in *AEPCO* and *AEP Texas*. On this basis alone, NS's additional retaining wall quantities are unwarranted.

NS's methodology is also flawed. First, NS has provided no evidence detailing the construction of any new retaining walls or increasing the height of existing retaining walls to accommodate modifications to the original roadbed width, nor has it shown that the original roadbed width has been significantly increased in size.[150]

Second, NS has assumed that, at every retaining wall location, the topography is such that the surrounding earth side wall is always going upward (in a cut) or downward (in a fill) as one moves out from the center of the roadbed. This is simply not the case. NS's drawings of these circumstances in its Reply workpapers have no basis in reality. In particular, the side retaining

[147] *See* NS Reply, p. III-F-108.
[148] *Id.* p. III-F-109-110.
[149] *See AEPCO* at 84 and *AEP Texas* at 84.
[150] The adjustments made to the ICC Engineering Report earthwork quantities by both parties to account for a modern 24-foot roadbed are based on an assumption of the original roadbed width but there is no evidence that the roadbed width of the lines replicated by the DRR, in fact, have been modified from the original construction.

walls do not always increase, they may actually decrease or they may stay the same The only way to know for certain what impact a wider roadbed would have on a retaining wall is to look at each and every retaining wall location and ascertain the surrounding topography Thus, if the topography is sloping upward away from the roadbed, a wider roadbed would result in a taller retaining wall in a cut and a shorter retaining wall for a fill However, if the topography is sloping downward away from the roadbed, the opposite would occur (*i e.*, a wider roadbed would result in a shorter retaining wall in a cut and a higher retaining wall in a fill) Finally, if the topography is flat, widening the roadbed would have no impact on the height of the retaining wall NS provides no evidence that it reviewed all existing retaining wall locations and determined that in every instance the retaining wall would need to be enlarged. Such a result is illogical.

In addition, NS assumes that the wider roadbed extends equally on each side of the track centerline. NS has provided no support for this assumption. If there is a location where a retaining wall is necessary, it is quite possible that the entire amount of the widened roadbed could be accommodated on the side where the retaining wall is not required, meaning that no adjustment in size is necessary In short, there are several scenarios where the retaining wall quantities could be decreased as well as increased, and NS has relied only on unsupported assumptions

NS's increase in retaining walls heights is also flawed because it assumes that all retaining walls from the ICC Engineering Reports were ten feet tall and that the new walls must be fourteen feet tall NS has provided no evidence that all the retaining walls from the ICC Engineering Reports are ten feet tall, as the ICC Engineering Reports do not show the height of any retaining wall. NS claims that it included photos demonstrating that the average ten-foot

height for all the retaining walls on the DRR is reasonable.[151] A review of the photos submitted by NS clearly demonstrates otherwise.[152] In addition, NS provided no basis for its assumption that all retaining walls on the DRR would be fourteen feet in height Furthermore, NS's four-foot increase in height is based on its flawed assumption of the impact of an expanded roadbed width which DuPont debunked above NS's increase in retaining wall height is completely unsupported.

(2) Masonry Walls

On Opening, DuPont provided gabion baskets in place of the many varieties of masonry walls shown on the ICC Engineering Reports DuPont's use of gabion baskets and a one-for-one CY quantity replacement is the same methodology employed in other cases [153] In this case, NS abandons the accepted methodology and instead proceeds from a flawed assumption that all masonry retaining walls on the DRR are solid and weigh 54% more than the stone included in the baskets of the gabion retaining walls [154]

NS's weight adjustment is unsupported. NS has provided no evidence that all masonry walls are solid. The ICC Engineering Reports show that a vast number of different materials were used A list of over sixty (60) various materials used for masonry retaining walls as identified on the ICC Engineering Reports is contained in DuPont's Rebuttal workpapers [155] Approximately a third of the material types are identified as in mortar, cement or concrete. Another third of the material types are identified as "dry" meaning pieces of stone placed with no

[151] *See* NS Reply, p III-F-113.
[152] *See* NS Reply e-workpaper "Retaining wall photos pdf" This workpaper consists of six photographs at three locations and the last photo shows a retaining wall no more than three feet high Clearly, this does not support NS's average ten-foot height.
[153] *See WFA/Basin*, p 89, where the parties agreed on the existing retaining wall quantities, and *ACP/Texas*, p 84, where the only dispute on quantities was BNSF's failed attempt to double the quantities for the wider roadbed
[154] *See* NS Reply, pp. III-F-111-112 NS compares "solid unit weights" to "broken-stone unit weight "
[155] *See* DuPont Rebuttal e-workpaper "Types of masonry retaining wall materials on ICC Engineering Reports.xlsx "

mortar (or, stated differently, broken stone such as the type used in gabions) Yet another third are unspecified as to whether they are in mortar or dry.

As explained above, DuPont's retaining wall quantities are most likely overstated to begin with because DuPont assigned all retaining walls in each valuation section to the route miles of the valuation section and applied the amount per route mile to the main line miles of the DRR Stated differently, as the ICC Engineering Reports do not show the location of retaining walls, DuPont assumed all retaining walls were put in place for the main line track Many of the valuation sections where the masonry retaining walls are most prevalent include many miles of second and third main and yard track that the DRR is not constructing Yet, DuPont conservatively included the total amount of retaining walls for the valuation section in determining the average amount per route mile. For the top twenty valuation sections with the highest average masonry retaining wall quantities per mile, the main line miles represent only 2 to 46 percent of the total miles; for seventeen of the twenty valuation sections, the route miles are 25 percent or less of the total miles [156] By assigning all the masonry retaining walls on the ICC Engineering Reports to the main line, DuPont has clearly overstated the DRR's retaining wall quantities.

To demonstrate the absurdity of NS's modifications, for three of the top twenty valuation sections with the most masonry per mile, NS's miles of retaining walls exceed the total miles of the segment by a significant amount.[157] Simply put, NS's modification of the masonry quantities from the ICC Engineering Reports – an argument that has never been accepted before – finds no support in the evidence.

[156] *See* DuPont Rebuttal e-workpaper "Overstated Retaining Walls xlsx "
[157] *Id*

(3) Timber and Tie Walls

NS accepted the quantities that DuPont's engineers pulled from the ICC Engineering Reports but disputes the gabion quantities required for replacement.[158] DuPont's accepted methodology[159] develops quantities by calculating the SY facing area of the timber and tie walls and replacing that same SY facing area with CY of gabions. The difference in gabion quantities between the parties is caused primarily by NS's development of linear feet of timber and tie retaining walls based on its unsupported ten-foot height assumption. However, as explained above, NS assumed that all of the retaining walls from the ICC Engineering Reports are ten feet high and that all of the DRR's retaining walls should be fourteen feet high due to the wider roadbed. DuPont has already explained why NS's increased wall heights are unsupported. Moreover, NS provided no evidence that any, let alone all, of the timber and tie walls from the ICC Engineering Reports are ten feet tall. Moreover, for the reasons described above, DuPont has likely overstated the retaining wall quantities. Therefore, DuPont continues to use its Opening quantities for timber and tie walls, modified only for the slight increase in route miles on Rebuttal.

(4) Piles

NS claims that DuPont erred by not including treated timber piles for timber piling retaining walls. NS uses the International Code Council specifications as its support.[160] NS's reliance on the International Code Council is misplaced as it is not applicable to railroad retaining wall construction. According to its website, "The International Code Council, a membership association dedicated to building safety, fire prevention and energy efficiency, develops the codes used to construct residential and commercial buildings, including homes and

[158] *See* NS Reply, pp. III-F-112-113.
[159] *See WFA/Basin*, p. 89, indicating that there was no dispute over the quantities of existing retaining walls.
[160] *See* NS Reply, p. III-F-110.

schools."[161] Nowhere does it say on the website that the International Code Council's codes are applicable to railroad construction. DuPont has not made any changes to its pile unit cost on Rebuttal.

(5) Foundation Excavation

NS claims that DuPont failed to include costs for the preparation of the foundation areas of the DRR's retaining walls.[162] Using its 10-foot average retaining wall height, NS calculates a retaining wall foundation excavation volume of over one (1) million cubic yards that it adds to the DRR's common excavation totals.[163]

NS's calculation is erroneous as it relies on the totally unsupported assumption that all retaining walls on the DRR average ten feet in height. Furthermore, NS's inclusion of over a million cubic yards of common excavation is a double-count of excavation quantities. Foundation excavation quantities for retaining walls are identified on the ICC Engineering Reports and both parties included them in the excavation quantities used to calculate the earthwork quantities per mile for the DRR line segments.[164] NS's additional foundation excavation quantities are clearly a double-count and should be rejected.

(6) Unit Costs

NS accepted DuPont's unit cost for gabions. As discussed above, DuPont has rejected NS's treated pile timber unit cost

[161] http://www.iccsafe.org:8888/AboutICC/Pages/default.aspx.
[162] *See* NS Reply, p. III-F-108.
[163] *Id.*, p. III-F-114.
[164] *See* DuPont Rebuttal e-workpaper "Rebuttal foundation excavation and subsidence.xlsx" for an identification of the valuation sections for which the ICC Engineering Reports include quantities of foundation excavation. A review of the grading spreadsheets used by both parties reveals that the foundation excavation quantities for these certain valuation sections are included in the earthwork quantities taken off the ICC Engineering Reports. *See also* DuPont Opening e-workpaper "DRR Open Grading errata.xlsx," tab "Eng Rep Input" and NS Reply e-workpaper "DRR Open Grading errata NS Reply.xlsx," tab "Eng Rep Input."

iv. Rip Rap

NS accepted DuPont's unit cost for rip rap. NS also accepted DuPont's methodology for developing rip rap quantities but adjusted the DRR quantities by correcting an input error from the ICC Engineering Reports [165] Although not discussed, NS also added quantities for the "partially owned lines." DuPont has made the correction to the ICC Engineering Report quantities but, as explained earlier, is not constructing the "partially owned lines."

v. Relocating and Protecting Utilities

NS accepted DuPont's Opening costs of $147,000 for this activity [166]

vi. Seeding/Topsoil Placement

NS accepted DuPont's Opening quantities for this item but rejects DuPont's Opening unit cost, which was based on the Trestle Hollow Project, in favor a lower unit cost based on the Means Handbook [167] As DuPont has demonstrated that the Trestle Hollow Project unit costs are reasonable and feasible for the DRR, DuPont continues to use its Opening unit cost for seeding/topsoil placement

vii. Water for Compaction

Water for compaction was addressed previously in the section on Subgrade Preparation

viii. Surfacing for Detour Roads

NS accepted DuPont's inclusion of $0.5 million for road detours on the recently-constructed line branch lines that the DRR is replicating.[168]

ix. Environmental Compliance

NS accepted DuPont Opening environmental compliance costs of $0.2 million.[169]

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[165] *See* NS Reply, p. III-F-114
[166] *Id*
[167] *Id*, p. III-F-115.
[168] *Id*
[169] *Id*

x. Lighting for Night Work

On Reply, NS included over $265 million for lighting costs for nighttime work on the DRR in order to meet the DRR's aggressive construction schedule. NS calculates the costs based on a seven-month time period, 25 days per month with lighting crews every 10 miles over the entire DRR network.[170] NS's cost is ridiculous NS has provided no support for its time assumptions or its crew spacing. NS's cost is unnecessary, a barrier to entry and has been rejected by the STB.

NS's cost is unnecessary because there is sufficient daylight available to construct the DRR. The U.S. Naval Observatory data base containing sunrise and sunset times shows that on the shortest days during the construction period of the DRR, occurring in the last two weeks of December 2007 and 2008, the time between sunrise and sunset was 9 hours and 33 minutes at Danville, KY (a location in the middle of the DRR's territory) In addition, on these same days, the time between the beginning and end of civil twilight (where the sun illuminates brightly enough for outdoor activities without the aid of light) is 10 hours and 32 minutes [171] Obviously, this time is longer the rest of the year. So even on the shortest day, there is sufficient daylight for construction crews to do their work.

NS's lighting costs can also be classified as a barrier to entry. Under the theory of unconstrained resources, the DRR would be able to deploy more personnel, equipment and materials during the shorter days in order to maintain its "aggressive construction schedule," as characterized by NS.

[170] *Id*, pp III-F-115-116.
[171] *See* DuPont Rebuttal e-workpaper "Daylight.xlsx."

Finally, DuPont notes that this type of cost has only been presented in two other SAC proceedings and was not accepted by the STB in either proceeding.[172]

xi. Dust Control Work

On Reply, NS included over $7 million for dust control work In support of including this cost, NS refers to Environmental Protection Agency regulations.[173] This is another example of NS's new cost items that have never before been presented in a SAC proceeding It is also an unnecessary cost

As noted previously, DuPont included costs in Opening for Environmental Compliance and NS accepted those costs in Reply. Therefore, these costs are already included and should not be included again

3. Track Construction

On Opening, DuPont developed the unit costs and quantities for DRR track construction based on quotes from vendors and design standards that met or exceeded those used by other Class I and regional railroads.[174] NS accepts many of DuPont's unit costs but adds other costs and increases track-mile quantities causing an increase of over $2 billion in track construction costs As discussed below by component, DuPont has accepted some of NS's changes while others have been rejected Before turning to the individual items of difference, DuPont notes that a significant amount of the difference in track construction costs is attributable to NS's overstated track miles associated with NS's new and enlarged yards as well as the construction of the Partially Owned Lines. As explained in Parts III-B, III-C and later in III-F, DuPont is not building many of these additional facilities

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[172] *See Otter Tail*, p. D-18. In *AEP Texas*, construction lighting was presented by BNSF but was not specifically discussed in the STB's decision.
[173] *See* NS Reply, pp. III-F-116-117
[174] *See* DuPont Opening, pp III-F-24-32

While preparing for Rebuttal, DuPont realized that it had significantly overstated track construction costs for many components due to incorrect references in three locations. Specifically, DuPont double-counted three categories of track miles and failed to include three other categories of track miles.[175] This resulted in an 11 percent overstatement on Opening in track feet causing corresponding overstatements in the costs for ballast, sub-ballast, ties, field welds, other track material and track labor and equipment. DuPont also realized that it had inadvertently allocated track miles into the wrong rail weight categories on Opening.[176] Both of these issues have been corrected on Rebuttal. This results in total track construction costs that are slightly lower than Opening despite the additional track miles included by DuPont on Rebuttal.

Table III-F-5 below compares the track construction costs developed by DuPont and NS in Opening, Reply and Rebuttal.

[175] *See* DuPont Opening e-workpaper "Track Construction Costs errata xls," tab "Summary." Tab "Summary" Cell E40 incorrectly referenced tab "User Input" cell D51 instead of D44, tab "Summary" Cell E41 incorrectly referenced tab "User Input" cell D52 instead of D45; and tab "Summary" Cell E42 incorrectly referenced tab "User Input" cell D53 instead of D46. As a result, tab "User Input" cells D51, D52 and D53 were included twice and cells D44, D45 and D46 were omitted.

[176] Track miles with 115 lb. rail were classified as 136 lb. rail and vice versa.

Table III-F-5
DRR Track Construction Costs
($ in thousands)

	Item	DuPont Opening 1/	NS Reply 2/	DuPont Rebuttal 3/
	(1)	(2)	(3)	(4)
1	Geotextile Fabric	$2,328	$4,809	$3,636
2.	Ballast and Subballast	1,152,318	2,354,887	1,125,237
3	Ties	1,635,780	1,820,758	1,621,007
4	Track (rail)			
	a. Rail (all track)	2,501,080	3,253,914	2,550,744
	b. Field Welds	33,356	33,964	31,624
	c Switches (turnouts)	503,563	575,227	577,206
5	Rail Lubricators	2,167	12,068	12,068
6.	Plates, Spikes and Anchors	852,751	882,650	797,129
7	Derail and Wheel Stops	1,289	85,446	13,425
8.	Track Labor and Equip	1,557,178	1,585,570	1,476,104
9.	Total	$8,241,810	$10,609,293	$8,208,180

1/ DuPont Opening Errata (May 17, 2012), Table III-F-7
2/ NS Reply, Table III-F-13.
3/ Rebuttal e-workpaper "Track Construction Costs Rebuttal.xls"

a. Geotextiles

NS argues that DuPont understated the amount of geotextile fabric that is required under the DRR's turnouts, and that DuPont did not provide detailed calculations for its fabric quantities.[177] NS then claims it recalculated the quantities for all of the turnouts NS misunderstood DuPont's unit costs and its calculation methodology

In reviewing NS's criticisms, DuPont discovered one error and one mislabeling in its geotextile quantity and cost calculations. DuPont's unit cost for geotextile fabric, $1 20 per square yard (which NS accepted), was intended to be a cost per track foot ($1.60) The unit cost was then applied to the track feet quantities which were inadvertently mislabeled as square yards. Thus, when DuPont showed 236 as the quantity for a No. 10 turnout (117 feet long), DuPont

[177] *See* NS Reply, pp III-F-118-119.

intended to include the costs for 306 8 square yards of fabric This is enough fabric to cover both the mainline portion of the track as well as the diverging track. DuPont's quantity allowed for overlap between the two legs of the turnout as well as extra length to extend slightly beyond the end of the turnout.

NS has included too much geotextile fabric per turnout. This overstatement is due the application of geotextile fabric over the entire roadbed, and not simply extending 6 feet from the centerline of track on each side of the mainline side and the diverging track side, as is current railroad industry practice.[178] NS applied geotextile fabric to the entire roadbed which is not necessary as the loads will be transferred at a 1 to 1 slope from the edge of the tie. DuPont has provided enough geotextile fabric to cover the entire turnout and where loads are being transferred at a 1 to 1 slope from the edge of the tie. NS has also overstated the required number of turnouts, primarily due to its overstated yard track requirements

On Rebuttal, DuPont has corrected the quantity calculations to reflect square yards applied to the agreed-upon unit cost of $1 20 per square yard

b. Ballast and Sub-ballast

Ballast and sub-ballast represents over half of the difference in track construction costs between the parties NS identifies several design and unit cost criticisms, most of which (as explained below) are without merit

i. Ballast and Sub-ballast Quantities

For mainline track, DuPont specified a 12-inch layer of ballast and 6-inch layer of sub-ballast. For yard and set-out tracks, DuPont specified a 6-inch layer of ballast and a 4-inch layer

[178] *See* NS Reply e-workpaper "NS Turnout Geotech Sketch pdf"

of sub-ballast.[179] NS accepted DuPont's specifications[180] but alleged four errors in DuPont's quantity calculations As discussed below, all but one of NS's allegations have no merit.

NS first claims that DuPont understated the tons per cubic yard for both ballast and sub-ballast. NS cites to DuPont's Opening text where DuPont shows a weight-to-volume conversion factor of 1.5 tons per cubic yard and to DuPont's workpapers where DuPont's calculations use a lower conversion factor of 1 35 tons per cubic yard.[181] NS assumed that DuPont's text was correct and its calculations in error so NS relied on the 1 5 conversion factor in its Reply.

In fact, DuPont's text was wrong and its workpapers were correct. Furthermore, NS should have known this as NS uses a conversion factor of 1.32 tons per cubic yard in its normal course of business. In the ballast price information provided to DuPont by NS in discovery, NS calculated an average price per net ton for ballast for each year. Right below that calculation, NS converted the price per net ton to the price per cubic yard. NS's calculation multiplied the price per net ton by a factor of 1.32 to derive the price per cubic yard.[182] In other words, NS converted tons to cubic yards using a factor of 1.32. As NS's own document supports the 1.35 conversion factor which DuPont used in its calculations, NS's 1.5 conversion factor must be rejected. DuPont continues to use its opening 1.35 conversion factor in Rebuttal.

NS next argues that DuPont's ballast cross section area calculations are incorrect and unsupported and, therefore, NS calculated its own ballast cross section areas. Because NS could not replicate DuPont's calculations, NS relied on its own cross section area calculations in its Reply [183] However, NS was able to replicate DuPont's cross section area calculations for sub-

[179] *See* DuPont Opening, p. III-F-26
[180] *See* NS Reply, p III-F-120
[181] *Id,* pp III-F-120-121 and III-F-132.
[182] *See* DuPont Opening e-workpaper "Ballast Purchases xls," tabs "2009" and "2010," cell F18 "Ballast Purchases.xls" was provided by NS in discovery
[183] *See* NS Reply, pp III-F-121-122.

ballast and accepted them.[184] DuPont has no idea why NS could replicate DuPont's cross sectional area calculations for sub-ballast but not for ballast as DuPont could not find any support for NS's ballast cross sectional area calculations in its workpapers NS provided cross-sectional drawings in the same manner that DuPont did but no calculations could be found in NS's workpapers Because NS could replicate DuPont's sub-ballast figures, DuPont assumes that there must be some error in NS's calculations for ballast. For that reason, DuPont continues to rely on its cross sectional area calculations included in Opening.

NS next claims that DuPont erred in its ballast and sub-ballast calculations by not relying on the cross sectional area calculations for multiple tracks.[185] In fact, DuPont built all sidings and other side-by-side tracks such as yard tracks as individual tracks using the single track ballast and sub-ballast sections. In other words, DuPont overstated the amount of ballast and sub-ballast that DRR would need because side-by-sections would have elements that overlap

Finally, NS claims that DuPont overstated its sub-ballast calculations by computing the cross sectional area using a depth of 6 inches for yard and set-out tracks instead of the 4 inches referenced in DuPont's Opening.[186] NS is correct and DuPont has corrected this calculation on Rebuttal.

Accordingly, DuPont continues to use its Opening ballast and sub-ballast quantities per track foot (with the one correction to yard and set-out tracks) applied to the Rebuttal track quantities.

[184] *Id.* p III-F-132
[185] *Id.* pp III-F-122-123.
[186] *Id.* p III-F-132.

ii. Ballast and Sub-ballast Unit Costs

On Opening, DuPont's ballast costs were derived from an average of ballast costs from twelve sources provided by NS in discovery.[187] NS generally agrees with DuPont's approach, but argues that it needs to add two ballast sources (one on PA and one in KY) to cover DRR track in the Ohio River Valley. NS obtains quotes from these two additional sources, adds them to the twelve sources provided in discovery and calculates a higher ballast cost than that used by DuPont NS's addition of two sources is unnecessary and, more importantly, an improper modification of information provided to DuPont in discovery DuPont is permitted to rely upon data furnished in discovery in developing its Opening evidence NS is precluded from impeaching the information it provided in discovery. The two suppliers added by NS do not appear in the discovery material provided by NS in response to DuPont's request for ballast costs in the SARR states and should be rejected. As DuPont relied on information provided by NS in discovery, NS is precluded from modifying that information.

In responding to NS's Reply and reviewing ballast costs and calculations, DuPont discovered two errors in its Opening cost calculations First, DuPont realized that it inadvertently used NS's average ballast cost for 2010 of $9.06 per ton when it should have used NS's average ballast cost for 2009 of {{ }} per ton[188] since the DRR construction costs are as of 2Q09. A review of NS's Reply workpapers determined that NS used the 2009 price as its starting point before adding the prices for the two additional sources [189] Therefore, on Rebuttal, DuPont has used the 2009 price without modification. Second, DuPont realized that on Opening it inadvertently used the mainline price per track-foot for ballast instead of the yard and

[187] *See* DuPont Opening e-workpaper "Ballast Purchases xls" (provided by NS in discovery), tabs "2009" and "2010"

[188] *Id*

[189] *See* NS Reply e-workpaper "Ballast Purchases NS Reply."

set-out track price. As the mainline price is based on higher quantities, DuPont overstated the ballast costs for yard and set-out tracks. DuPont has corrected this on Rebuttal.

NS also disagrees with DuPont's Opening ballast transportation cost. NS first disagrees with the average haul of 100 miles that DuPont used for movement of the ballast from the quarry to the DRR railhead (referred to as "off-line" transportation) and calculates its own average haul of 132.4 miles NS's average haul includes the improper addition of the two sources discussed above and that alone renders NS's average haul figure unusable. NS's average haul is not significantly higher than DuPont's average haul Under the theory of unconstrained resources, DuPont assumed that there would be sufficient ballast sources on the DRR lines located within an average of 100 miles of the DRR railheads. This is no different than NS's assumptions that "suitable sub-ballast suppliers would be available along the DRR route"[190] with "an assumed 40 mile average delivery distance."[191] For the above reasons, DuPont has continued to rely on its Opening average haul of 100 miles for off-line transportation.

Next, NS claims that DuPont failed to include the costs to transport the ballast from the DRR railhead to the placement location (referred to as "on-line" transportation) because on-line transportation was not included in DuPont's quote for ballast distribution. DuPont agrees with NS and has added NS's 35.7 miles for on-line transportation to the 100 miles for off-line transportation.

NS then rejects DuPont's ballast transportation cost of $0.035 per ton-mile taken from the recent *AEPCO* decision.[192] NS proffers several criticisms of DuPont's material transportation cost and develops its own ballast transportation cost of $0 064 per ton-mile comprised of a quote

[190] *See* NS Reply, p III-F-135
[191] *Id.* p III-F-133
[192] *See* DuPont Opening, p. III-F-27.

from a single supplier of $0.072 for off-line transportation and DuPont's $0.035 per ton-mile for on-line transportation.[193] NS's criticisms related to *AEPCO* are misplaced and erroneous.

NS contends that DuPont's evidence is faulty because "it is clear that the Board did not accept use of the $0 035 cost for off-line transportation."[194] In support of its contention, NS relies on two key assumptions, but a careful reading of *AEPCO* shows that NS is wrong on both points.

First, NS cites to the Board's statement that AEPCO used a "hardcoded unit price for the off-line transportation costs" and, consequently, NS makes the assumption that the unit price used by AEPCO for off-line transportation was "highly confidential."[195] Evaluation of the Opening Evidence in that case shows that AEPCO used $0.035 per ton mile for off-line ballast transportation.[196] The defendants used this same charge for off-line transportation in their reply.[197] In light of the fact that BNSF/UP accepted the rate of $0.035 for off-line transportation, AEPCO did not mention the off-line transportation cost in its Rebuttal Evidence. While it is true that the Board only states that AEPCO used "a hardcoded unit price for the off-line transportation costs", the Board never explains what, exactly, that hardcoded unit price was. Given that the record clearly shows that both AEPCO and BNSF/UP used $0.035 for off-line transportation, the only plausible interpretation of *AEPCO* is that the ballast transportation costs used by the Board were also based on $0.035 per ton mile.

Second, NS misinterprets the Board's discussion of ballast transportation. NS contends that the Board found $0.035 to be a conservative cost because it would be the cost a railroad

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[193] *See* NS Reply, pp III-F-129-131

[194] *Id*, p III-F-130

[195] *Id*

[196] *See AEPCO* Opening (Public Version), p. III-F-53 (filed Jan 25, 2010) (using $0 035 per ton mile for transportation "from the [ballast] sources to the railheads")

[197] *See* BNSF/UP Reply (Public Version), p. III F-54 (filed May 7, 2010). *See also AEPCO* at 100 (Board notes that defendants used the $0.035 figure in their calculations of transportation from the quarry to the railheads)

would charge itself.[198] However, close inspection of *AEPCO* reveals that the Board was not expressing its own view, but, instead, merely summarizing BNSF/UP's argument.[199] NS's Reply is based on a misinterpretation of *AEPCO* and should be rejected.

Furthermore, DuPont notes that NS accepted $0 035 per ton-mile for the transportation of culverts without any objection and used $0.035 per ton-mile for a portion of the ballast transportation cost.

Finally, one of NS's criticisms of the $0 035 per ton-mile cost is that it dates back to 1994. However, DuPont notes that if this cost were indexed using a cost index such as the Rail Cost Adjustment Factor, Adjusted for Productivity ("RCAFA"), the $0.035 is reduced to $0.025.[200]

Based on the above, a cost of $0.035 per ton mile is appropriate for the material transportation costs of the DRR.

For sub-ballast, DuPont used a unit cost of $13.00 per ton from the Trestle Hollow Project. NS complains that the Trestle Hollow Project cost is not representative of the cost the DRR would incur. However, laying sub-ballast is laying sub-ballast whatever the size and location of the project. NS has not shown, nor can it show, that laying sub-ballast for the Trestle Hollow Project was somehow different from what would occur on the DRR. DuPont's delivered cost was for an actual project – not just a random series of quotes. This plainly demonstrates that such unit costs are feasible. In addition, DuPont thoroughly addressed NS's criticisms of the Trestle Hollow Project previously in Section III-F-2.

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[198] *See* NS Reply, p. III-F-130.

[199] *See AEPCO* at 100 (Board states that "[d]efendants argue that although $0 035 per ton mile is a conservative cost (the cost a railroad would charge itself .), they use this cost in their calculations").

[200] *See* DuPont Rebuttal e-workpaper "Index of material transportation cost.xlsx."

Furthermore, the sub-ballast unit costs utilized by NS are overstated. NS could have used costs from an actual NS project, as NS has done for other construction costs for the DRR, but instead obtained material price quotes from suppliers that it selected plus the Means Handbook costs for placement As demonstrated throughout this Part III-F, actual project costs are superior to Means Handbook costs. Surely NS has had the occasion to recently purchase and place sub-ballast at some location within the DRR's vast territory.

Finally, DuPont notes that NS did not provide any sub-ballast cost data in its discovery documents. In past SAC cases, the unit cost for sub-ballast has generally been lower than ballast since sub-ballast material requirements are less stringent than those used for ballast. Thus, DuPont submits that its $13.00 per ton is conservative in light of NS's actual ballast costs, which are lower than the sub-ballast cost that DuPont is using.

c. Ties

NS accepted DuPont's type and spacing of ties. NS did not accept DuPont's unit cost or transportation cost for ties.[201] NS's criticisms are discussed below.

NS rejected DuPont's tie cost and used a cost from a different supplier also included in DuPont's Opening workpapers. DuPont accepts NS's tie cost on Rebuttal.

NS claims that DuPont's tie weight is incorrect and unsupported.[202] DuPont disagrees. DuPont used 60 lbs per cubic foot based on publicly available AREMA specifications shown in Chapter 15, Table 15-1-5. NS should be familiar with AREMA specifications. DuPont continues to use its Opening tie weights on Rebuttal.

NS claims that DuPont's Opening calculation of 450.6 miles for tie transportation is incorrect because it assumes multiple sources while the tie price comes from only one source

[201] *See* NS Reply, pp III-F-135-138
[202] *Id*, p III-F-136

NS calculates transportation mileages from one source to all of the DRR railheads.[203] NS's restriction of tie sourcing to one location is contrary to the theory of unconstrained resources. There is no reason to believe that other tie manufactures would not match the price the DRR obtained for ties. NS did not use one source for ballast or sub-ballast and there is no reason to do so for ties. On Rebuttal, DuPont continues to rely on its Opening miles for tie transportation.

Finally, NS rejects DuPont's use of $0.035 per ton-mile for transportation costs and used a quote of $0.0874 per ton-mile As discussed previously, DuPont's cost is appropriate and DuPont continues to use it on Rebuttal.

d. Track (Rail)

i. Specifications

NS accepted DuPont's rail specifications for the DRR [204]

ii. Rail Pricing

NS accepted DuPont's rail price per ton from Schedule 724 of NS's 2009 R-1 but added transportation costs from the manufacturer to the DRR railheads. NS also adds rail unloading costs that it claims were not included in DuPont's costs Each of these claims is discussed below.

NS claims that DuPont failed to consider that the price from the R-1 did not include transportation over NS rail lines NS is incorrect. DuPont was fully aware on Opening that "[t]he cost of unloading, hauling over carrier's own lines, and placing the rails in tracks and of the train service in connection with the distribution of the rail" is not included in the cost per ton shown in Schedule 724.[205] DuPont was also fully aware that the cost includes "the cost of

[203] *Id.* pp III-F-137-138
[204] *Id.* p. III-F-139
[205] *See* DuPont Opening e-workpaper "Norfolk Southern Combined Railroad Subsidiaries 2009 R-1.pdf" at page 89

loading at the point of purchase ready for shipment, the freight charges paid foreign lines, and the cost of handling rails in general supply and storage yards."[206]

By adding transportation costs from the manufacturer to the DRR railheads, NS is creating a double-count of costs by adding freight charges paid foreign lines which are already included in the price. NS attempts to justify its additional transportation cost by claiming "NS obtains substantial amounts of rail from suppliers located on or near its lines."[207] However, NS provided no support for this statement as it did not identify any of its rail sources nor their locations in relation to NS's rail lines. Furthermore, the R-1 does not identify any rail sources nor show any distances over foreign rail lines. Absent any evidence supporting NS's claim, DuPont continues to utilize the R-1 rail price (which NS accepted) and rejects NS's double-count of foreign line transportation costs.[208]

NS also adds rail unloading costs that it claims were not included in DuPont's costs. Specifically, NS added costs for the rental of a rail train for transport from the DRR railhead to placement location and unloading plus the cost of a work train crew to assume the operation of the train for the duration of the unloading. On Rebuttal, DuPont has accepted NS's cost for these items of $1.92 per track-foot.

iii. Field Welds

NS accepted DuPont's unit price for field welds. However, NS claims that DuPont understated the number of required field welds by failing to include welds for "cutting in road

[206] *Id*
[207] *See* NS Reply, p. III-F-139
[208] On Opening, DuPont did include a small amount of foreign line transportation costs which, in retrospect, should not have been included. However, DuPont has continued to include these costs on Rebuttal

crossings, insulated joints, diamond crossings, and turnouts, and the final assembly of individual panels that make up the completed panelized turnouts."[209]

DuPont determined that, on Opening, field welds for insulated joints and diamond crossings were not included. However, NS is incorrect in stating that DuPont failed to include field welds for cutting in road crossings and turnouts. DuPont's Opening cost for road crossings includes the required field welds needed. DuPont's Opening cost for turnouts reflects the complete installed price per turnout.

On Rebuttal, DuPont has added the costs for field welds for both insulated joints and diamond crossings.

iv. Insulated Joints

Insulated joints are addressed in Part III-F-6 below.

v. Switches

NS accepts DuPont's specifications and unit costs for turnouts and switch heaters but disagrees with DuPont's transportation costs.[210] On Rebuttal, DuPont has accepted NS's turnout weights. However, for reasons discussed previously, DuPont disagrees with NS's transportation unit cost and continues to use $0.035 per ton-mile for transportation costs. Differences in total costs are also caused by NS's inflated turnout count caused by overstatements in route miles, yard tracks, work sidings, set-out tracks and interchange tracks as discussed in Part III-B.

[209] *See* NS Reply, p. III-F-144
[210] *Id.* pp. III-F-144-148

e. Other

i. Rail Lubricators

NS accepts DuPont's rail lubricator unit price but disagrees with DuPont's spacing and count of lubricators and claims that DuPont's unit price does not include the costs for shipping, a protective mat and installation.[211]

On Rebuttal, DuPont has accepted NS's rail lubricator locations based on the track charts for the rail lines of the DRR. DuPont has also accepted NS's unit costs for shipping, a protective mat and installation

ii. Plates, Spikes and Anchors

NS accepts DuPont's specifications and unit costs for plates, spikes and anchors. However, NS disagrees with both DuPont's transportation distances and transportation unit cost.[212]

NS claims that DuPont failed to include the miles from the DRR railhead to the placement location. On Rebuttal, DuPont has accepted the additional transportation miles included by NS.

NS claims DuPont's transportation unit cost is incorrect and uses a quote of $0 0906 per ton-mile instead. For reasons discussed previously, DuPont disagrees with NS's transportation unit cost and continues to use $0.035 per ton-mile for transportation costs.

iii. Derails and Wheel Stops

NS accepts DuPont's proposed retractable derail for yard locations and the unit cost but claims that this derail is not adequate to protect main line track NS claims that double switch point derails are needed to protect mainline track from cars rolling onto the mainline. NS

[211] *Id.* pp III-F-148-150
[212] *Id.* p III-F-150.

developed the unit cost for the double switch point derail using a price quote in DuPont's Opening workpapers supplemented with switch stand costs produced by NS in discovery. NS developed installation costs using a percentage of DuPont's turnout installation costs and developed shipping costs based on its overstated transportation cost for turnouts.[213]

On Rebuttal, DuPont has accepted NS's use of double switch point derails to protect the mainline at set-out track locations and NS's unit cost.

For wheel stops, NS accepted DuPont's unit cost but increased the quantity. On Rebuttal, DuPont has accepted NS's number of wheel stops

iv. Crossing Diamonds

NS claims that DuPont failed to include costs for crossing diamonds. To remedy this, NS developed an inventory of crossing diamonds by various types and applicable costs.[214]

On Rebuttal, DuPont has accepted NS's count and costs for crossing diamonds.

v. Materials Transportation

Transportation costs are assigned to each item As such, no additional transportation costs have been added by the parties.

vi. Track Labor and Equipment

NS accepted the labor costs proposed by DuPont on Opening However, NS suggests that the labor costs are based on track materials being delivered to the location where they are to be placed in the track Therefore, NS added costs to transport materials from the DRR railheads to the installation locations to the prices of the materials plus costs for transporting and unloading rail.[215] DuPont has addressed NS's additional costs where NS included them.

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[213] *Id*, pp III-F-150-152.
[214] *Id*, pp. III-F-153-155
[215] *Id*, p III-F-156

4. Tunnels

On Opening, DuPont derived its tunnel inventory and tunnel lengths from materials provided by NS in discovery.[216] On Reply, NS agreed with DuPont's tunnel inventory with one exception. NS added a 268-foot tunnel at Shawsville, Virginia which was open cut in 1990.[217] DuPont rejects the addition of this tunnel. NS did not identify this tunnel on the tunnel list it provided in discovery, it does not appear on NS's track charts and NS did not inform DuPont in discovery that this tunnel had been open cut. DuPont is dependent on NS to provide information in discovery regarding its system and had no way of knowing anything about this tunnel unless NS provided the information. NS cannot provide this information for the first time on Reply. Therefore, DuPont does not add this tunnel to its tunnel inventory.

NS's identification of double-track tunnels is correct and DuPont accepts NS's unit costs for tunnel construction. On Rebuttal, DuPont accepts NS's total costs for tunnel construction minus the cost for the Shawsville Tunnel for a total of $1,081 million.[218] NS also included a $10 million additive to tunnel construction costs for work during the winter months. As discussed later in Section III-F-12, this additive is unnecessary and DuPont has not included it.

5. Bridges

On Opening, DuPont's bridge engineer, Mr. Crouch, provided for a variety of bridge types and designs to accommodate the bridges being built by the DRR. Consistent with the approach used in other SAC cases, bridges were categorized into types and built to a general specification for that bridge type (some bridges incorporated multiple span types into a single bridge).[219]

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[216] *See* DuPont Opening e-workpaper "DRR Tunnels.xlsx."
[217] *See* NS Reply, pp. III-F-156-157.
[218] *See* DuPont Rebuttal e-workpaper "DRR Tunnels Rebuttal xlsx."
[219] *See* DuPont Opening, pp. III-F-33-38.

NS takes issue with DuPont's inventory, bridge designs, costs and approaches. The differences in DRR bridge costs are discussed below.

a. Bridge Inventory

DuPont's Opening bridge inventory for the DRR included 5,172 railroad bridges at 3,589 locations[220] and 151 highway overpasses.[221] On Reply, NS included 5,970 bridges at 3,933 locations on lines owned 100% by NS and 447 bridges at 182 locations on the "Partially Owned Lines."[222] NS accepted DuPont's 151 highway overpasses on lines owned 100% by NS but added 41 highway overpasses on the "Partially Owned Lines."[223] NS's bridge inventory included bridges less than 20-feet in length over roads at those locations where DuPont replaced these bridges with culverts. NS's bridge inventory also reflected the correction of the classification of three (3) bridges from standard bridges to movable bridges and the removal of two (2) bridges that NS does not own.

DuPont has accepted the bridges less than 20-feet in length over roads and included these bridges as Type 1 bridges. DuPont has also added a few other bridges that were inadvertently omitted on Opening, including one special bridge. As discussed in Part III-F-13, DuPont has not included the Partially Owned Lines in the constructed miles of the DRR and therefore has not included the bridges and highway overpasses on the Partially Owned Lines in its Rebuttal bridge counts. DuPont has accepted NS's classification of three (3) additional moveable bridges and the removal of two (2) bridges not owned by NS.

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[220] At locations with multiple main tracks, DuPont constructed separate bridges for each main track

[221] *See* DuPont Opening e-workpapers "Bridge Construction Costs errata xls" and "Over Head Bridge Construction Costs.xls"

[222] *See* NS Reply e-workpaper "Bridge Construction.Costs errata Reply xls"

[223] *Id*

On Rebuttal, DuPont has included a total of 5,806 bridges. As DuPont and NS have bridges at the same locations, the difference is caused by differences in the number of tracks at some locations due to the differences in the parties' respective facility plans

In addition to bridge inventory issues, NS addresses other criticisms of DuPont's Opening evidence in this section Specifically, NS criticizes DuPont's bridge heights, bridge lengths and the number of tracks at various bridge locations [224] NS's criticisms are addressed below.

NS's primary criticism pertains to DuPont's bridge heights. On Opening, DuPont used estimated bridge heights and pier heights because NS provided only *maximum* bridge height for the majority of bridges[225] instead of the *actual* bridge height requested by DuPont in discovery On Reply, NS used the maximum height information to estimate bridge abutment and pier heights.[226] NS developed bridge pier heights by assuming the maximum bridge height equaled the maximum pier height NS admits that, in the case of exceptionally tall bridges, the piers actually vary in height within a single bridge, thus NS uses varying pier heights.

DuPont's engineers maintain their opening approach of using an average pier height for the bridges replicated on the DRR as NS significantly overstates the height of each pier by using the maximum bridge height.[227] In fact, maximum height is an overstatement for every single pier that NS includes because maximum height is measured from the top of the rail to the lowest point on the ground surface below the bridge.[228] At a minimum, the maximum height would

[224] *See* NS Reply, pp III-F-171-182

[225] NS admits that it did not provide *any* height information (maximum or otherwise) for over 12 percent of the bridges shown on the bridge list provided to DuPont in discovery For these bridges, NS accepted DuPont's bridge height estimates *See* NS Reply, p. III-F-172, note 271

[226] *See* NS Reply, pp. III-F-176-177

[227] *See* DuPont Rebuttal e-workpaper "Maximum Height v. Pier Height pdf" which shows how maximum bridge height does not equate to pier height

[228] Maximum height is different than bridge clearance height Bridge clearance height is measured from the bottom of the superstructure. Bridge clearance distance is closer to pier height than maximum bridge height

need to be reduced by the distance from the top of the rail to the bottom of the bridge superstructure (a distance ranging from five to ten feet depending on the bridge superstructure) to even estimate the maximum height of the pier [229] Under NS's scenario, this further assumes that the pier is placed at the location of the maximum height. NS has provided no evidence that all piers are always placed at the location of the bridge maximum height. A least-cost most-efficient railroad such as the DRR would certainly not design its bridges in that manner.

To further address this bridge height issue, DuPont analyzed NS's Reply bridge list (excluding exceptionally tall bridges over 65 feet in height and special bridges) to determine NS's average maximum height for bridge Types I, II and III. Based on NS's bridge list, the average maximum bridge height is 16.25 feet for Type I bridges, 17.10 feet for Type II bridges and 21.12 feet for Type III bridges.[230] Subtracting the distance from the top of the rail to the bottom of the bridge superstructure of 5.69 feet for Type I bridges. 5 98 feet for Type II bridges and 9.23 feet for Type III bridges[231] results in average NS pier heights of 10 56 feet for Type I bridges. 11 12 feet for Type II bridges and 11 89 feet for Type III bridges. These pier heights are well within the 11-foot to 16.5-foot pier height range used by DuPont on Opening.[232]

DuPont's engineers, however, accept, with modifications, NS's pier heights for exceptionally tall bridges (bridges over 65 feet in height) For exceptionally tall bridges. NS assumed that, for bridges with three or more piers, 25 percent of the piers would equal the maximum height. 25 percent would equal 75 percent of the maximum height, 25 percent would equal 50 percent of the maximum height and 25 percent would equal 25 percent of the maximum

[229] *See* DuPont Rebuttal workpapers, sub-directory "Bridge Photos" for pictures showing the difference between maximum bridge height and pier height
[230] *See* DuPont Rebuttal e-workpaper "NS Average Bridge Height for Bridge Types I_II_III xlsx."
[231] *See* DuPont Rebuttal e-workpaper "Bridge Superstructure Height.pdf"
[232] *See* DuPont Opening, p III-F-34

height [233] NS has provided contradictory pier height evidence in its tall bridge workpapers, showing that typical exceptionally tall bridges have a few tall piers and the approach spans are all much shorter, i e., the piers for the approach spans are much closer to the end of the bridge than the center of the bridge.[234] For exceptionally tall bridges with three or more piers. DuPont's engineers have taken a conservative approach and assumed the maximum bridge height for 25 percent of the piers and 25 percent of the maximum bridge height for the remaining 75 percent of the piers, even though, as demonstrated above, maximum height always overstates pier height.

NS also criticizes DuPont's bridge lengths. claiming that DuPont overstated bridge lengths by misinterpreting the NS bridge data provided in discovery [235] DuPont has reviewed NS's workpapers and concurs that bridge length was overstated for some of the DRR bridges DuPont has corrected this on Rebuttal

NS claims that DuPont assigned incorrect and inconsistent numbers of tracks to various bridge locations [236] DuPont has corrected this on Rebuttal.

b. Bridge Design and Cost Overview

As DuPont noted on Opening, Mr Crouch was a Project Engineer for NS where he was responsible for engineering design and plan review. the bid phase, and the construction engineering phase for track and bridge construction projects. As head of Crouch Engineering, Mr Crouch has been responsible for the design and construction of numerous concrete and steel bridges, as well as the inspection and rehabilitation design for hundreds of steel. concrete. masonry. and timber bridges for Class I and short-line railroads. Given his experience, Mr

[233] *See* NS Reply. p III-F-214
[234] *See.* for example. NS Reply e-workpaper "NS DuPont Special Bridges Exhibit (9_29_12) pdf," p 4 showing the bridge over the Ohio River at Cincinnati, OH.
[235] *See* NS Reply. pp. III-F-177-178
[236] *Id.* pp III-F-178-179

Crouch is well aware of the DRR's bridge requirements and how to design bridges to meet those requirements.

NS claims that that there are several problems with DuPont's bridge designs. NS's specific criticisms are addressed below in the appropriate section.

i. Cost Overview

Despite all of NS's railings against DuPont's improper bridge component costs, NS accepts DuPont's base unit costs used for bridge components.[237] However, NS erroneously adjusts DuPont's bridge and highway overpass unit costs (from projects in Tennessee and Florida) by the Means Handbook location factor.[238] The Means Handbook location factor is used in roadbed preparation to adjust costs from the Means Handbook to approximate costs in various regions of the country. The Means Handbook location factor is applicable to costs from the Means Handbook because the costs shown are national averages The Means Handbook location factor is not applicable to DuPont's unit costs for at least three reasons

First, and foremost, DuPont's unit costs are not national averages taken from the Means Handbook Second, DuPont's unit costs are from actual projects. Third, NS has provided no evidence that the unit costs used by DuPont (and accepted by NS) would be different for similar projects in other locations of the country. NS's application of the Means Handbook location factor to non-Means Handbook unit costs is improper and must be rejected.

NS generally rejects DuPont's quantities for bridge costs primarily due to issues with bridge heights. NS also criticizes DuPont's substructure designs and costs for special bridges, including movable bridges, bridges over major rivers and navigable waterways, and exceptionally tall bridges. NS's criticisms are addressed in the relevant sections below

[237] *Id.* p III-F-183.
[238] *Id*

ii. Bridge Design

(1) Superstructure Design (Spans)

Not confining its comments in this section to just superstructure, NS criticizes DuPont for how it designed and developed costs for standard superstructure span types, uniform standard substructure piers and a single uniform standard abutment which results in the same piers and abutments used for bridges of the same assumed height regardless of span length NS claims that DuPont's approach results in mismatches between bridge superstructure and substructures that would render DRR bridges infeasible and unsafe [239]

DuPont's engineers have provided bridge designs based on real-world engineering projects with differing span lengths that have been constructed and are still in use today. The difference in superstructure depth caused by different span types is accounted for with step caps [240]

NS states that in order to correct DuPont's approach, NS separated the DRR bridge inventory into categories (Type I, Type II, Type III, Type IV, Bridges with Multiple Span Types and Special Bridges) allowing for the substructure parameters to be matched to the type of superstructure to be supported.[241] NS did not do anything different than what DuPont did other than separate the bridges into different tabs of its spreadsheet.

Despite its criticisms, NS accepts the superstructure designs proposed by DuPont for all of the Type I, Type II, Type III and Type IV spans.[242]

NS next claims that DuPont fails to show that the standard substructure units (piers and abutments) have the load capacity necessary to support the various superstructure span types.

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[239] *See* NS Reply, p III-F-186

[240] *See* DuPont Opening e-workpaper "Bridge Construction Costs errata.xls " *See* also DuPont Rebuttal e-workpaper "Bridge Construction Costs Rebuttal xls "

[241] *Id.* pp. III-F-186-187

[242] *Id.* p III-F-187.

NS provides an example of how a Type III girder, with a width of 16 feet, would not fit on the 12-foot wide pier cap for the standard 11-foot tall pier proposed by DuPont. NS claims that AREMA guidelines would require the pier cap to be a minimum of 17 feet wide.[243] DuPont acknowledges that the drawing NS refers to shows a pier cap size of 12 feet wide[244] but the calculations used by DuPont to design and develop the cost of the pier utilize the correct pier cap dimensions that have the ability to handle the size requirements necessary to construct the DRR's bridges.[245]

Finally, NS claims that DuPont's bridge designs omit spans over major waterways that would meet U S. Coast Guard ("USCG") horizontal and vertical clearance requirements. NS points to an example where DuPont used 90-foot spans where a 480-foot through truss is necessary.[246] On Rebuttal, DuPont has accepted the longer spans and the costs for these spans as developed by NS.

(2) Substructure Design (Piers and Abutments)

NS claims that there are two problems with DuPont's substructure designs – the standard pier details do not properly account for bridge height nor do they account for differing span lengths. In addition, DuPont failed to perform any engineering calculations.[247]

Bridge height has already been addressed DuPont's Opening substructures were designed for 286.000 lbs gross car weights, which is the industry standard, in accordance with AREMA specifications, and are currently in use in real-world applications. Furthermore, DuPont's Opening bridge workpapers included engineering calculations[248] Therefore, DuPont's

[243] *Id,* pp III-F-187-188
[244] *See* DuPont Opening e-workpaper "Type III_Photos and Plans pdf"
[245] *See* DuPont Opening e-workpaper "Bridge Construction Costs errata xls," tab "Pier Concrete Quantities."
[246] *See* NS Reply, pp. 188-189.
[247] *Id,* pp III-F-189-192.
[248] *See* DuPont Opening e-workpapers "Type I_Photos and Plans pdf," "Type II_Photos and Plans pdf," "Type III_Photos and Plans.pdf," "Type IV _Plans and Photos.pdf."

bridge designs are realistic and feasible. NS fails to provide any evidence that the substructures used by DuPont are not adequate. As discussed later in this section, NS has proposed unnecessarily large and over-designed piers

iii. Type I Bridges

NS accepts DuPont's designation of Type I bridges being made up of Type I spans ranging from 20 to 32 feet in length NS corrected the number of piles for the Type I bridge abutment from six to four[249] DuPont disagrees with this correction. DuPont included six piles in its bridge cost calculations.[250] DuPont's designs are currently in use in existing bridges[251] Furthermore, NS has provided no evidence that DuPont's abutments are inferior

For Type I piers, NS accepted DuPont's standard pier details for the 11-foot, 14 5-foot and 16 5-foot piers. For Type I bridges with pier heights exceeding 16.5 feet. NS designed new piers for heights of 20 feet. 25 feet, 35 feet, 45 feet, 55 feet and 65 feet. NS relied on DuPont's standard pier details adjusting only for height unless physical requirements or other analysis dictated a change NS also modified the concrete quantities for all piers to reflect that the top of the pier footings must be at least two feet below the ground line.[252]

As discussed above. DuPont does not agree with NS's pier height calculations. NS's claim that the top of the pier footings must be at least two feet below the ground line is misleading. When building a bridge, the contractor will excavate out to rock or construct the footing on piles in order to build the pier footings and pier column[253] Once the contractor has built the footings and piers. he will mound two feet of dirt on the footing so that water will drain

[249] *See* NS Reply, pp III-F-192-193. DuPont referenced six piles in its Opening evidence but the CSXT design used in DuPont's workpapers includes only four piles NS asserts that four piles provide adequate support.
[250] *See* DuPont Opening e-workpaper "Bridge Construction Costs errata.xls," tab "Abutment Piles," cell C6
[251] *See* DuPont Opening e-workpapers "Type I_Photos and Plans.pdf" for a bridge in Huntsville, AL; "Type II_Photos and Plans pdf" for a bridge in McKenzie, TN, "Type III_Photos and Plans.pdf" for a bridge in Brace, TN, and "Type IV_Plans and Photos pdf" for a bridge in Wilson County, TN.
[252] *See* NS Reply, pp. III-F-192-195.
[253] In DuPont's bridge designs, all piers are constructed on piles.

away from the footing This is typical in railroad bridge construction. There cannot be frost heave with a concrete footing poured on rock because there is no soil to freeze and expand. Regardless, the topsoil placed over the top of the footing protects the footing from frost effects.

iv. Type II Bridges

NS largely accepts DuPont's Type II bridge design and designations NS made the same modifications to its Type II bridge abutment design as the Type I bridge abutment design As all Type II bridges are single span, no bridge piers are needed [254]

On Rebuttal, DuPont has rejected NS's modifications to the Type II bridge abutment design As discussed above, DuPont's abutments are sufficient as they include six piles and are currently in use in existing bridges.

v. Type III Bridges

NS accepts DuPont's designation of Type III spans ranging from 60 to 92 5 feet in length.[255] However, NS takes issue with DuPont's abutments and piers

NS claims that the standard CSXT abutment used by DuPont is inadequate for Type III bridges regardless of whether it has four or six piles. NS redesigned the Type III bridge abutment. adjusted the quantities of concrete, steel piling and pile tips and used the unit costs proposed by DuPont.[256]

NS also claims that DuPont's Type III piers are insufficient for previously discussed reasons – DuPont did not account properly for bridge heights and the pier parameters were not tailored to Type III spans NS developed the same standard piers for the same range of heights

[254] *See* NS Reply, p III-F-195
[255] *Id*, p III-F-195
[256] *Id*, pp III-F-196-198

as Type I spans but they reflect different details and quantities specifically tied to the design loads of a longer Type III span [257]

As discussed previously, DuPont does not agree with NS's bridge height calculations for piers DuPont's bridge abutments and piers were designed in accordance with AREMA specifications and are in use in real-world applications.[258] NS did not submit any calculations demonstrating that the designs proposed by DuPont for abutments and piers are inadequate, only that a different design could also be used

In addition to the errors and overstatements introduced by NS in its calculation of pier heights and costs based on its erroneous use of maximum bridge height, NS's piers include overstated and unnecessary amounts of concrete and reinforcing steel. DuPont has found five (5) examples of how NS over-designed its piers with regard to the required factor of safety In one of the examples, NS's design of a 41-foot tall pier, NS's quantities result in a pier that exceeds the required factor of safety by thirty-eight (38) times.[259] DuPont has also identified another example of how NS's calculations result in overstated pier costs When evaluating the piles needed for its bridge piers, NS, without explanation, reduced the allowable stress limit below that contained in AREMA recommendations resulting in the need for more or larger piles which results in a larger pier footing requiring more concrete.[260] All of these increases result in unnecessary cost increases. Clearly, the pier designs proposed by NS are not the lowest cost feasible designs since NS's piers are significantly overdesigned.

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[257] *Id.* pp III-F-198-199

[258] *See* DuPont Opening e-workpapers "Type I_Photos and Plans pdf," "Type II_Photos and Plans pdf," "Type III_Photos and Plans pdf," "Type IV_Plans and Photos pdf"

[259] *See* DuPont Rebuttal e-workpaper "Examples of NS Over-designed Piers pdf"

[260] *See* DuPont Rebuttal workpaper "NS Pier Stress pdf." NS sources AREMA Chapter 8, 4.4 3 for the "pile allowable stress." AREMA specifications are 12,600 psi but NS uses, without explanation, only 9,000 psi The lower stress limit results in the need for more or larger piles

NS's abutment design also unnecessarily results in increased costs. For example, NS uses A36 steel (36,000 psi) for its piles in its abutment design.[261] The American Institute of Steel Construction's ASTM Specifications call for A572 Gr. 50 (50,000 psi) as the preferred material specification.[262] which is what DuPont used.[263] Using A36 steel causes costs to increase for two reasons First, A36 steel is a special order from the steel mills and is more expensive than A572 Gr 50 steel, which is what the steel mills normally produce. Second, using a lesser steel in the abutment requires more steel which increases steel costs as well as the concrete costs

vi. Type IV Bridges

After removing the bridges classified as Types I, II and III, and excluding the multiple span and special bridges, NS claims that there is only one bridge on the DRR that DuPont proposed to replicate solely with Type IV spans DuPont's Type IV abutment suffers from the same deficiencies as its Type III abutment so NS made the same modifications as it made to the Type III abutment. DuPont's standard pier details were found to be insufficient for Type IV design loads so NS made the necessary modifications.[264]

As discussed above under Type III bridges, DuPont's bridge abutments and piers are sufficient for the DRR's bridges, and supported, while NS's designs are grossly overstated.

vii. Bridges with Multiple Span Types

DuPont proposed to replicate a limited number of bridges with more than one superstructure type. NS evaluated each of these bridges individually, modifying the costs as

[261] *See* DuPont Rebuttal e-workpaper "NS Over-design of Abutments pdf"
[262] *Id*
[263] *See* DuPont Opening e-workpapers "Type II_Photos and Plans.pdf," "Type III_Photos and Plans pdf" and "Type IV_Plans and Photos.pdf"
[264] *See* NS Reply, pp III-F-199-201

necessary by matching the required abutments and piers to the span type and the height of each bridge.[265]

NS did not do anything different than DuPont other than use its modified abutments and piers which DuPont has already addressed.

viii. Special Bridges

(1) Movable Bridges

DuPont accepts NS's changes to the list of movable bridges that DuPont presented in Opening in order to minimize the differences between the parties

Movable bridges consist of two components. The first is the movable span. The second component is the fixed approach spans leading to the movable span. Each of these components is discussed below.

In Opening, DuPont used a cost from a recent SAC proceeding to develop the cost per foot for the movable span component of the DRR movable bridges.[266] NS accepts DuPont's cost per foot but only for bascule spans.[267] For vertical lift spans, NS relies on the cost of a CSXT Railroad lift bridge developed in a 2006 Value Engineering report.[268]

DuPont has reviewed NS's bridge cost calculations and supporting documentation and demonstrates in the thirteen (13) bullets below why NS's selection of a CSXT project as the basis for costs of vertical lift spans is improper.

> CSXT Railway was replacing an existing swing span bridge with an existing horizontal clearance of 146'-7", with a proposed, new, vertical lift span with a

[265] *Id.* pp III-F-201-202

[266] *See* DuPont Opening e-workpaper "Moveable Span Cost pdf," page III-F-107, where the cost of a 775-foot bridge with a 170-foot bascule span is shown at $8,336,800 in 1994 Assuming conservatively that 75% of the cost is for the bascule span, and indexing from 1994 to 2009, the cost per foot used by DuPont is $62,991 per foot In that same workpaper, at page III-F-108, costs for a vertical lift span are shown to be less than the costs for a bascule span To be conservative, DuPont used the higher bascule span costs for all movable spans *See also*, DuPont Opening e-workpaper "Bridge Construction Costs errata xls," tab "Special Bridges."

[267] *See* NS Reply, p III-F-206.

[268] *Id.* p III-F-205.

proposed horizontal clearance of more than twice the existing clearance. Depending on the length of the bridge span over the navigable waterway, DuPont uses a bascule type drawbridge span or a vertical lift bridge span. DuPont explained that the movable span bridge costs are higher, thus the reason for using only one cost per foot. There are current lift span locations that must be replicated. DuPont replaced these with lift spans using the higher (conservative) cost of Bascule Spans on a per track foot basis.

This was a project on the CSXT railroad, and HNTB was the firm doing the workpaper for value engineering. This bridge is not on the DRR, but might have been representative of reasonable costs if the construction were new, but the costs presented were for retrofitting of an existing bridge.

HNTB explained that, because of the limited time allowed to foul the track, a portion of the work was to be performed off-site. The additional costs were not quantified. This is an example of the introduction of unreasonable tasks and costs associated with constructing a replacement bridge on an active railroad line has compared to new construction. The costs for this off-site work are not explained, but would be unreasonable and unrealistic for new bridge construction. The off-site work and limited track time would add costs to the construction of the lift span.

There is no discussion, or separation, of items in the "Bid" that would allow NS or DuPont to separate the additional costs of construction in a "new" movable bridge construction project, versus an "under traffic" "replacement" project, which has its own unique set of additional challenges and costs mentioned above. The costs presented by HNTB are unrealistic and are unsupported for only new construction, as is required on the DRR.

This bridge cost is based on replacing an existing structure, in place, under traffic, which is many more times expensive than new construction. Because this bridge was constructed under traffic as a replacement, and not as new bridge construction, it cannot logically be the least feasible cost for new bridge construction.

The bridge clear span is being increased using funds from the U.S. Coast Guard based on requirements of the Truman Hobbs Act. This confirms that this is an existing bridge, and that the existing clearance has been in use. Increasing the horizontal clearance should not be a requirement for the DRR since the existing structure, unimproved, was satisfactory for decades.

There was no attempt made by the NS experts, or HNTB, to illustrate the additional costs, or differences in cost, of constructing a completely new lift span compared to the cost of constructing a lift span replacement bridge, under traffic, where an existing bridge has to be demolished, and a new bridge constructed, partially off-site, and in phases, with very limited access and track time windows.

> The proposed lift span was longer than the existing movable span of the existing bridge; therefore, there were additional piers required to be removed and new piers constructed, under traffic.
>
> The proposed construction was to be performed around existing bridge piers and the track and bridge superstructure, which would not be necessary for the DRR's lift spans.
>
> Construction costs were much higher because of limited work windows since there were 20 trains per day on that active CSXT line. The contractor would have to increase its labor, equipment, and supervision, and related costs based on having limited work windows and not being able to work without interruption.
>
> The existing swing span bridge had to be able to operate during and after the construction of the vertical lift towers, necessitating incremental work, phasing of work, phasing of demolition, and other tasks and their related costs that would not be included in the cost to construct a new bridge (not under traffic on an existing heavily used railroad main line). The HNTB costs presented are unrealistic for new bridge construction.
>
> There was no separation of additional costs for flagging, smaller track time windows, working on a portion of the project off-site, higher mobilization costs, and multiple mobilizations, demolition costs, the cost of phasing work on the active railroad bridge, the cost of keeping the swing span in operation during the project, etc.
>
> Using this project as a basis for costs on the DRR is unrealistic, not feasible, and illogical since it is a "replacement project" under traffic and not a "new bridge construction project." All costs will be higher since there are limits with respect to fouling the track, permission for track time and work windows, demolition costs, flagging costs, and other costs related to working around an existing structure. The DRR is being constructed new, without the addition complexities and costs of replacing a bridge under traffic

In Rebuttal, DuPont has continued to rely on its Opening movable span cost per foot as NS accepted it for bascule spans and, as noted above, DuPont's opening workpapers demonstrate that the bascule span cost is higher than the vertical lift span cost

NS objects to DuPont's assumption that the DRR would pay a 10 percent cost share for movable bridges on the constructed system [269] NS feigned ignorance regarding DuPont's rationale and support for its assumed 10 percent cost share, portraying it as undocumented and

[269] *See* NS Reply, p. III-F-206.

unknown.[270] However, NS includes a four page discussion on the precise rationale and support on which DuPont's assumptions lie.[271] In its four-page discussion, NS offers several flawed, incomplete, and invalid arguments for why DuPont's assumed construction cost sharing arrangement should be rejected Each is discussed separately below.

NS claims that the Truman-Hobbs Act "is the only government funding mechanism currently in place for the sole purpose of aiding bridge owners with replacement of movable structures."[272] DuPont agrees with this statement, as it pertains to Federal funding.[273] NS attempts to downplay the viability of the mechanism as a bridge funding source, stating that, "from the inception of the Truman-Hobbs Act in 1940 until July 2012, Truman-Hobbs Act funding has been used for only 27 bridges."[274] However, in 2009, the same year the DRR commences operations, Congress passed and the President signed the American Recovery and Reinvestment Act of 2009. This act authorized billions of Federal funding for transportation infrastructure projects, including $142 million earmarked specifically to fund movable bridge replacement under Section 6 of the Truman-Hobbs Act.[275] The DRR would have been ideally suited to take advantage of this Federal funding stream, as did other Class I railroads. According to a 2009 BNSF press release, "Work has begun to replace BNSF Railway's 118-year-old swing span over the Mississippi River at Burlington, IA . Construction of the lift span is being financed in part through the American Recovery and Reinvestment Act of 2009 and previous year appropriations under the Truman-Hobbs Act."[276]NS argues that the DRR cannot benefit

[270] *See* NS Reply, p III-F-207.
[271] *Id.* pp. III-F-208-211
[272] *Id.* p. III-F-208
[273] NS spends a great deal of time discussing the Truman-Hobbs act, but ignores funding that comes from state and local agencies
[274] *See* NS Reply, p. III-F-208.
[275] *See* ARRA2009 at page 49, available online at http://www.gpo.gov/fdsys/pkg/BILLS-111hr1enr/pdf/BILLS-111hr1enr.pdf.
[276] http://www.bnsf.com/media/news-releases/2009/september/2009-09-23a.html (accessed April 8, 2013).

from the application of the Truman-Hobbs Act because, "the incumbent railroad presumptively bore the full cost of constructing its movable bridges." NS further argues that the Complainant must "produce evidence showing the [incumbent] railroad did not pay 100% of the cost of its movable bridges." for it to pay "anything less than 100% of the cost of those bridges."[277] regardless of any governing laws that may have changed over the years. This argument is self-serving and the logic behind it is deeply flawed In fact, NS's own arguments in support of this point contradicts its own thesis.

NS states that, "because Truman-Hobbs was enacted in June 1940, any movable bridge built or modified before that time could not possibly have received funding under that Act."[278] NS argues that this should disqualify the DRR from taking advantage of the Truman-Hobbs Act in 2009, because the incumbent could not have benefitted from the Act at the time of the original construction This is a clear barrier to entry. NS is entitled to Truman-Hobbs Act funding in 2009 for all existing movable bridges, so the DRR must also be entitled to the same access in 2009. The laws of the 1930's have no bearing on present-day SAC analysis.

NS's argument fails on several counts NS acknowledges that a SARR must replicate the portions of the incumbent's system, including bridges, that are required to serve the issue traffic, but NS contradicts itself in stating that the DRR bridges do not replace NS bridges[279] NS inappropriately attempts to restrict the DRR's access to an existing federally funded program because some bridges were originally constructed before the program's inception. However, the

[277] *Id*, pp III-F-209-210.
[278] *Id*, p. III-F-210
[279] NS opines that the SARR bridges would not be eligible for funding under the Truman-Hobbs Act because the Truman-Hobbs Act covers alteration and replacement of existing structures whereas the SARR bridges would be considered new construction, not replacements NS fails to recognize that the entire SARR is a replacement for the incumbent system, including all bridge structures. Although the DRR does not own the existing structures in the real world, it is replacing them in the hypothetical SAC analysis. NS's own language supports this position Specifically, NS states, "the [original] movable bridge is what the SARR must replicate." *See* NS Reply, p III-F-209. The DRR cannot replicate the original bridge without replacing it

program was designed explicitly to replace bridges from another era, and there are no such restrictions placed on NS or any other railroads eligible for funding through the program NS seeks to impose an entry barrier on the DRR by limiting its access to a federal program to which NS has access and from which NS has drawn federal funds

The fact that the DRR is a replacement carrier for the NS is supported by both STB precedent and the underlying theory of Contestable Markets In discussing the concept of barriers to entry in *WTU*, the Board stated that the definition of barrier to entry must comport with the Board's regulatory purpose of constraining a railroad from monopoly pricing.[280] To this end, the STB decided that the SARR is a replacement carrier that steps into the shoes of the incumbent carrier for the segment of rail system the SARR would serve.[281] The fact that a SARR "steps into the shoes" of the incumbent as a replacement for, and not a competitor to, the existing railroad provides the SARR with the ability to provide a constraint to the existing railroad from monopoly pricing.

The STB's reasoning for this definition of barriers to entry comes directly from Contestable Market Theory, and the work of Baumol, Panzar and Willing ("Baumol, et al") as noted in *WTU*.[282] In their book "Contestable Markets and the Theory of Industry Structure," Baumol, et al, define an entry barrier as "anything that requires an expenditure by a new entrant into an industry, but imposes no equivalent cost upon an incumbent."[283] The definition does not imply that an entrant into the industry only has to pay what the incumbent paid for an asset when the incumbent first acquired that asset What it does imply is that the entrant does not have to pay more than what the incumbent would pay for the asset in the current market. In other words,

[280] *See WTU*, p 670.
[281] *Id*
[282] *Id*, p 669, note 68
[283] *See* Baumol, et al, p 282 and *WTU*, p 669

the SARR does not have to pay more than the incumbent does to replace its current assets The fact that the incumbent can pay less for essentially the same asset as a new entrant due to the incumbent's replacing an existing asset versus an entrant's building the asset for the first time leads to a cost that creates a barrier to entry

NS's ability to acquire moveable bridges at a lower cost than a SARR simply because the NS has a bridge in place, and the SARR does not, clearly creates a cost for the SARR that imposes a barrier to entry. A simple example illustrates this issue. Assume an industry where companies have only one asset. The cost for an entrant to acquire the asset is $1 million, but, because of government subsidies, an incumbent that is replacing the same asset incurs only $100,000 in costs. It is simple to see that the incumbent has a distinct cost advantage over the new entrant and charge enough to cover its costs, while undercutting the prices of the entrant The entrant cannot operate in such a market in the long-run since it cannot compete with the incumbent. In other words, the market is not contestable. The only way for contestable market theory to work is to ensure that the entrant into the market does not incur a cost disadvantage relative to the incumbent The subsidy provided by the Federal Government on moveable bridges provides just such a cost advantage to the incumbent, and cannot be allowed.

In addition, NS points to two examples where it believes the DRR should not only be denied access to Federal funding, it should also be required to pay costs based on the no-longer-existent predecessor to the bridge it is actually replacing In the first example, NS concedes that, "the alteration/relocation of an existing bridge near Epes, Alabama that NS's predecessor railroad (the Alabama Great Southern Railroad Company), performed" was 100% federally funded [284] However, NS goes on to state that, "because NS constructed the bridge in the first instance and the federal government appears simply to have paid for alteration and relocation of

[284] *Id*

the bridge, the DRR would be required to pay the full cost of constructing the original bridge."[285] There are two problems with NS's argument. First, NS's classification of the alteration and relocation of the bridge as "simple" is totally unsupported. Second, NS offers no proof that the bridge as originally configured (the full cost of which NS opines the DRR should pay) bears any resemblance whatsoever to the bridge as it is presently configured.

In the second example, NS concedes that, "the federal government paid approximately 78% of the cost of replacement of the [Hannibal, Missouri] bridge under the Truman-Hobbs Act."[286] However, NS goes on to state that, "this project involved the alteration of an existing bridge, not its original construction," and that, "NS's predecessor railroad paid to construct the bridge." NS again concludes that the DRR should be required to "pay the full cost of constructing the bridge."[287] As above, there are problems with NS's argument. First, the real-world bridge reconstruction was actually funded under the Truman-Hobbs Act, yet NS believes the DRR should be denied access to this real world funding stream. As discussed above, this is an impermissible barrier to entry. Second, NS offers no proof that the original bridge (the full cost of which NS opines the DRR should pay) bears any resemblance whatsoever to the replacement bridge that presently exists.

In the SAC analysis, DuPont must build the existing bridge, not the original bridge. NS received federal funding for the existing bridge. Therefore, the DRR should receive the same federal funding. It does not matter that DRR cannot tap the same source of funds, because that would be a barrier to entry. A barrier to entry is "any cost that a new entrant must incur that was not incurred by the incumbent." "This would preclude the incumbent from earning monopoly rents in the form of a return on investments it never actually made, but would permit the

[285] *Id.*, p. III-F-211.
[286] *Id.*
[287] *Id.*

incumbent a competitive return on the current replacement cost of all investment that it did incur."[288] Whether or not NS has received federal funding for its bridges, the SAC analysis requires DRR to incur the costs to replace the existing bridges, not the predecessor structures For bridges for which NS received federal funding to replace, it would be an entry barrier to deny DRR the same funding.

In Rebuttal, DuPont continues to assume it is eligible for federal funding under the Truman-Hobbs act for 90 percent of the replacement cost of movable bridges, particularly in light of the fact that the program received a $142 million infusion through the American Recovery and Reinvestment Act in the first year of the SARR operations

The remaining component of a movable bridge is the fixed approach spans leading to the moveable span. NS accepts DuPont's specific proposal for the superstructure types on the approach spans but rejects DuPont's pier designs and costs.[289] As discussed previously, DuPont does not agree with NS's modifications to pier designs as NS has not demonstrated that DuPont's designs are inadequate.

(2) Exceptionally Tall Bridges

NS assigned all bridges with heights exceeding 65 feet to this category NS maintained the superstructure span types proposed by DuPont for these structures but developed the substructure costs based on seven new pier design groups based on span length and pier height. NS also reduced the cost of the piers for bridges with three or more piers to reflect the reduced height of the piers closer to the ends of the bridge [290]

As noted previously, DuPont's engineers have accepted, with modifications, NS's pier heights for exceptionally tall bridges. For bridges with more than three piers, DuPont's

[288] *See* WTU, p 670.
[289] *See* NS Reply, p. III-F-212
[290] *Id*, pp. III-F-213-214

engineers have taken a conservative approach and assumed the maximum bridge height for 25 percent of the piers and 25 percent of the maximum bridge height for the remaining 75 percent of the piers.

(3) Non-Movable Bridges over Navigable Waters

NS claims that this is another group of bridges that could not be replicated using DuPont's prescribed standard piers and spans because they require horizontal clearance much greater than that afforded by DuPont's standard spans. For these bridges, NS constructed them with one long truss span for each bridge to provide the same clearance that currently exists combined with standard superstructure spans back to the ends of the bridge. NS calculated the weight of the truss spans and used the lowest truss steel price from the Value Engineering report used for vertical lift bridge costs. The approach spans were assembled and costed in the same manner as described for movable bridges.[291]

On Rebuttal, DuPont has accepted the NS's truss span length, pier heights and costs for these items for the portion of the bridge spanning the waterway. DuPont has continued to use its Opening methodology and costs for the abutments, approach span pier heights, span lengths and costs

c. Highway Overpasses

NS accepted DuPont's unit cost per square foot of bridge deck area for highway overpasses as well as DuPont's 10% cost share factor. NS, however, rejected DuPont's estimated bridge deck areas. NS obtained the actual bridge deck areas for each highway overpass on the DRR from publicly available sources.[292] NS also adjusted the costs for each highway overpass by the Means Handbook location factors

[291] *Id.* pp III-F-214-218.
[292] *Id.* pp III-F-218-219

As discussed earlier, NS's application of the Means Handbook location factors to non-Means Handbook costs is improper and DuPont rejects it.

On Rebuttal, DuPont has accepted NS's bridge deck areas and applied them to the unadjusted unit cost and 10 percent cost share factor agreed to by the parties

d. Summary

On Rebuttal, DuPont has increased its bridge costs to $2,273 million for bridges and $12 0 million for highway overpasses.

6. Signals and Communications

On Opening, DuPont's signals and communications expert, Victor Grappone, included a Positive Train Control ("PTC") signal system, a microwave tower communications systems and detectors designed to accommodate the DRR's needs.[293] NS presents several criticisms of these items.[291] NS's criticisms are addressed below.

a. Centralized Traffic Control

i. PTC Installation in 2009

NS claims that DuPont could not install PTC at the beginning of DRR operations in 2009 and would have to install PTC as an overlay to a centralized traffic control ("CTC") system. NS is incorrect.

As DuPont explained in Opening, rather than install a PTC system as an overlay to a centralized traffic control ("CTC") system, the DRR, as a least-cost most-efficient railroad, will install a PTC system that will be operational when the SARR begins operations on June 1, 2009.

[293] *See* DuPont Opening, pp III-F-38-43.
[294] *See* NS Reply, pp. III-F-219-253.

Installing PTC from the outset eliminates redundant expenditures and the total cost is less than installing a CTC system and then converting it to a different system within six years.[295]

In Reply, NS disagreed with DuPont's approach, claiming that DuPont would have to install PTC as an overlay to CTC as NS is currently doing. NS's position is that the DRR has to follow the overlay approach because, in the real-world, NS has to install PTC as an overlay. This argument is nonsensical. The DRR is not the NS and the DRR is not bound by the capital and operating approaches that NS follows. As a stand-alone entity, the DRR is allowed to make decisions regarding the optimum physical plant for all aspects of the SARR, including technological items, regardless of the real-world incumbent systems. From a theoretical standpoint, installing PTC at the outset is no different than DuPont choosing to upgrade the rail ties over a certain DRR section. Assume in the real world, an NS line being replicated by the DRR includes timber ties, and the DRR chooses to upgrade to concrete ties. By NS's logic, the DRR would need to first lay the timber ties, then later tear them out and replace them with concrete ties. Or assume that NS's offices are wired for cable internet access, but SRR chooses to install FIOS. NS would have DRR first install cable, then later replace it with DRR's preferred communications systems. The folly of NS's logic is obvious

NS claims that the DRR could not install PTC at the outset of operations because PTC technology and equipment did not exist in 2009.[296] NS is mistaken. Positive train control is not a new concept and has been around for many years. Some form of Automatic Train Protection ("ATP") has been operational in Europe for over one hundred years. The current ATP standard in Europe is the European Rail Traffic Management System ("ERTMS") which has evolved over

[295] *See* DuPont Opening, pp III-F-38-39
[296] *See* NS Reply, pp III-F-221-222.

many years of ATP experience in Europe. Many non-European countries are also converting to ERTMS.[297]

PTC systems also were in use in the U.S. prior to the 2009 start date of DRR operations Alstom's and PHW's Advanced Civil Speed Enforcement System ("ACSES") has been in daily service on Amtrak's Northeast Corridor since 2002.[298] Westinghouse Air Brake Technologies ("WABTEC") Chief Executive Officer, Al Neupaver, stated "[t]he technology is there" for PTC and cited to the fact that BNSF has been operating the systems for five years on portions of its system.[299]

Even NS was working on a PTC system prior to 2009. NS began working on its Optimized Train Control ("OTC") system, NS's version of PTC, in 2005 Validation and field testing were scheduled to take place in 2009.[300]

NS's position is incongruous. NS claims that the DRR could not implement PTC today because the technology does not exist, but then asserts that the DRR must implement PTC by 2015. NS cites to an FRA report that questions whether PTC can be fully implemented by the 2015 deadline.[301] According to NS's Vice President of Operations Planning and Support, Gerhard Thelen, NS's position now is that NS will not be able to implement PTC until the 2018-2020 timeframe.[302] NS's attempt to deflect the existence and feasibility of new PTC construction through a series of claims that its entire railroad may not be converted to a PTC/CTC overlay system by the end of 2015 does not in any way discredit the fact that PTC was available to the DRR in 2009 as noted above

[297] *See* DuPont Rebuttal e-workpaper "Wikipedia-Positive Train Control pdf"
[298] *Id.*
[299] *See* DuPont Rebuttal e-workpaper "WABTEC Management Discusses Q3 2012 Results pdf," p 9
[300] *See* BizNS, Volume 1, Issue 4, July-August, 2009 included as DuPont Rebuttal e-workpaper "BizNS pdf"
[301] *See* NS Reply, p III-F-221.
[302] *See* DuPont Rebuttal e-workpaper "Argus Rail Business 3-4-13 pdf"

Furthermore, it must be remembered that NS and the other Class I railroads have openly resisted the requirement for them to install PTC, and have lobbied Congress to consider changing the law that requires the nationwide implementation of PTC. NS's inability to implement PTC by 2015 is a function of its resistance to the requirement and the added complexity of overlaying PTC on top of NS's existing CTC system, which are problems that the DRR avoids by constructing PTC from the outset.

NS also argues that the DRR could not implement PTC because the market could not supply the required systems to the DRR because of simultaneous demand from all railroads. The DRR would have a high incentive to implement PTC in 2009 in order to avoid investment in CTC equipment that would be replaced by PTC equipment in a few years. Following the theory of stand-alone costs and the availability of unlimited resources, the DRR would not face the equipment shortages that NS is claiming is an implementation problem caused by the demand from all railroads simultaneously.[303] In addition, as noted above, the Class I railroads are currently hedging on PTC implementation, which forces suppliers to operate under great uncertainty. If a railroad the size of the DRR were to commit to system-wide implementation of PTC, the uncertainty would go away and suppliers would be free to invest the required capital to ramp up production.

NS next focuses on the issue of the radio frequency needed for PTC as an obstacle to the DRR's ability to implement PTC in 2009.[304] This would not be a problem for the DRR. Because the DRR would be implementing PTC prior to other railroads, it would not be competing with them for the 220MHz spectrum. Nor would the DRR have to compete with the

[303] In fact, the DRR would not suffer from a shortage of equipment no matter when PTC is implemented as that would be a barrier to entry.

[304] *See* NS Reply, pp. III-F-222-223.

other railroads for compatible radio equipment.[305] Furthermore, as an early entrant into the PTC arena, the DRR would be able to set the standard for other railroads seeking to implement PTC at a later date.[306]

NS also claims that the interoperability between all railroads with PTC and resource constraints associated with the scale of deployment are problems for the DRR.[307] As an early adopter of PTC, the DRR would have a significant influence over what the standard would be, similar to Amtrak's influence on the Northeast Corridor.[308] DuPont includes the cost associated with aligning the DRR's PTC to the standard adopted by other railroads. One method of estimating this cost would be what Amtrak is spending to make its Northeast Corridor ("NEC") system compliant with the current interoperability standards. According to Amtrak's Annual Report, Amtrak received a $10 million grant for a project that will create seamless interoperability on the NEC with NS, CSX and Conrail.[309] On Rebuttal, DuPont has included {{ }} for PTC development costs which includes costs for interoperability integration

NS incorrectly argues that, because the required PTC technology was not in existence in 2009, precluding its use on the DRR is not a barrier to entry.[310] This is a red herring. As demonstrated above, PTC technology was available in 2009 so DuPont is not claiming a barrier to entry with regard to PTC technology.

Forcing the DRR to construct CTC and then overlay PTC would be a barrier to entry. PTC costs should be and are included in the DRR stand-alone costs, as they were in *AEPCO*. A

[305] The DRR would not suffer from shortages of equipment or the inability to secure radio frequency or bandwidth as either of these would be a barrier to entry.

[306] The Wikipedia article suggests that Amtrak's ability to implement its ACSES system in the Northeast Corridor allowed it to set the standard for other railroads seeking to implement PTC at a later date. *See* DuPont Rebuttal e-workpaper "Wikipedia-Positive Train Control.pdf."

[307] *See* NS Reply, pp. III-F-222-224.

[308] The Wikipedia article indicates that commuter railroads are adopting the Amtrak methodology. *See* DuPont Rebuttal e-workpaper "Wikipedia-Positive Train Control.pdf."

[309] *See* DuPont Rebuttal e-workpaper "Amtrak 2011 Annual Report.pdf," p. 14.

[310] *See* NS Reply, pp. III-F-224-225.

contestable market is defined as one into which entry and exit are seamless and costless Potential entrants are assumed to face the same set of productive techniques available to the incumbent firms. The key here is "availability." The incumbent need not use the productive technique in order for a SARR to use it: it only has to be available for the incumbent to use There is no argument that PTC systems are available today, were available in 2009, and are being used by real-world railroads (including North American Class I railroads). If any real-world railroad were being constructed today. it would not begin with a CTC system and then overlay PTC. Rather, the rational new railroad entrant would rely on a PTC system from the start. and rational equipment producers would step in to meet the immediate demand, which is what DuPont's evidence reflects.

ii. Inventory of Signal Components

NS claims that DuPont's inventory of signal components is incorrect and unreliable.[311] DuPont has reviewed NS's inventory of signal components and accepted NS's inventory with the following modifications.

DuPont adjusted NS's signal component inventory to reflect DuPont's DRR configuration DuPont has eliminated signal components associated with NS's work sidings as DuPont has not included them on the DRR (as discussed in Part III-B). DuPont has reduced the signal component inventory for interchanges as DuPont has included only 76 of the 143 additional interchanges included by NS as separate interchanges.[312] Signal components associated with NS's customer access sidings have been eliminated as the DRR is not constructing them. The number of electric locks has been adjusted to reflect DuPont's number of set out tracks and 702 customer turnouts. DuPont has removed NS's electric locks for

[311] *Id* pp III-F-226-232
[312] As discussed in Part III-B, the remaining interchanges take place in yards already included by DuPont

connections of yard track to the main line because all of the yard turnouts connected to the DRR's main line are powered turnouts

DuPont has also identified a number of overstatements in the quantities used by NS for several typical signals For example, NS included an estimated 10,200 feet of cable for a double crossover location with four switches, or 2,550 feet per switch (nearly a half-mile of cable per switch). Based on the experience of DuPont's signals and communications expert, Mr. Grappone, this amount is extremely excessive On Rebuttal, this quantity has been reduced to a more reasonable 1,200 feet, or 300 feet per switch. Several other cable amounts have been similarly adjusted.[313]

DuPont has also identified NS overstatements regarding AREMA maintenance units. For track circuits (AREMA C&S Manual items E-1, E-2b & E-3), NS has overstated the units required for typical locations. As an example, an "AS1" single track automatic location would entail the equivalent of one track circuit. This is true because such locations include one-half of each of the two track circuits extending in both directions Because each track circuit is assigned two units per the AREMA C&S Manual, an AS1 typical location should carry two points as opposed to four as asserted by NS. Accordingly, AREMA unit typicals have been adjusted by DuPont on Rebuttal. In a similar manner, NS has overstated the units associated with batteries and chargers (AREMA C&S Manual items K-4). DuPont has made the proper adjustments to these counts on Rebuttal [314]

[313] *See* DuPont Rebuttal e-workpaper "DuPont C&S Estimate Rebuttal xlsx," tab "Reply Signal Typicals " DuPont's adjustments are identified with purple shading.

[314] *See* DuPont Rebuttal e-workpaper "DuPont C&S Estimate Rebuttal.xlsx," tab "AREMA Typicals " DuPont's adjustments are identified with purple shading

iii. Unit Costs for Signal Components

NS claims that DuPont omitted several items required for the DRR's signal components and used incorrect unit costs for other items.[315] Each of NS's claims is addressed below.

NS claims that DuPont omitted the costs of signal foundations. DuPont has included these costs on Rebuttal

NS claims that DuPont's materials package for its electronic lock locations did not include insulated joints. NS is incorrect as DuPont did include costs for insulated joints on Opening.[316] DuPont has included the correct number of insulated joints on Rebuttal.

NS claims that DuPont omitted track connections (near and far) for all track circuits DuPont has included these items on Rebuttal.

NS claims that DuPont omitted a number of 12 volt and 24-volt battery/charger sets. DuPont has included the correct number on Rebuttal

NS claims that DuPont did not include the correct cabling for connecting AC power between the service drop and the equipment shelter. DuPont has accepted NS's cabling on Rebuttal

NS claims DuPont did not include grounding kits for signal equipment shelters DuPont has included this item on Rebuttal.

NS claims that DuPont did not include the material and labor costs for the pipeline connections between the main line switch and electric locks or derails. NS also claims that pipeline connects are obsolete and NS instead uses a separate switch stand and signal circuitry. DuPont has accepted NS's modification in Rebuttal.

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[315] *See* NS Reply. pp. III-F-232-236

[316] *See* DuPont Opening e-workpaper "DuPont C&S Estimate errata xlsx," tab "Typicals," cells AC12 and AC13

Finally, NS claims that DuPont misstated the material costs for the Power Mainline Switch Machine 24VDC and the Manual Mainline Switch Machine. DuPont has corrected these costs in Rebuttal.

b. Positive Train Control

On Opening, DuPont relied on information provided by NS in discovery to develop the costs of the DRR's PTC system. The costs were adjusted, where appropriate, to reflect the cost of a PTC system as an initial installation rather than a conversion from an existing CTC system.[317] NS disagrees with DuPont's premise and costs.[318] DuPont addresses NS's criticisms below.

i. PTC Wayside System

Unlike DuPont, NS developed its costs for the DRR's PTC wayside system as an overlay to a CTC system. NS developed costs for a PTC integrated system to be installed at all wayside control points (including movable span bridges), wayside signals and tunnels.[319]

NS states that it included unit costs for new components and corrected outdated unit costs by DuPont. NS included PTC costs associated with three- and four-track automatic signal locations by including two PTC installations at each location. DuPont contends that only one PTC installation is required at these locations and has adjusted the DRR's costs accordingly.

NS claims that DuPont used only the lower cost for standard control points. On Opening, DuPont used the concept of interlocking hut equivalents ("IHE"). This accounted for interlocking installations of varying size and complexity and the PTC costs were scaled accordingly. On Reply, NS accounted for interlocking of varying size by applying separate costs

[317] *See* DuPont Opening, p. III-F-39.
[318] *See* NS Reply, pp. III-F-236-246.
[319] *Id.* pp. III-F-236-237.

for small interlocking/automatic signals, double track and large interlockings. On Rebuttal, DuPont has accepted this alternate method and the associated costs

NS claims that DuPont excluded necessary antenna tower costs. DuPont accepts NS's addition of 60-foot towers at each interlocking and automatic signal location. The inclusion of these towers, however, renders unnecessary the 1,343 30-foot towers included by DuPont on Opening for VHF communications. Accordingly, the 30-foot towers have been eliminated from the DRR's communication costs on Rebuttal.

Finally, NS claims that DuPont arbitrarily reduced installation labor by 75 percent. This reduction is justified because the DRR will be installing PTC as an integral part of the overall signal system from the beginning. This eliminates the labor-intensive requirement to retrofit an existing signal system as NS is currently performing.

ii. PTC IT Costs

NS provided PTC IT deployment costs in discovery which DuPont relied on in Opening. NS rejects two adjustments to PTC IT deployment costs made by DuPont [320] First, NS rejects DuPont's {{[redacted]}} reduction in total deployment costs for "UTCS adjustment per Phil."[321] This adjustment was inadvertently made in Opening and DuPont has removed this adjustment on Rebuttal

Second, NS rejects DuPont's adjustment to IT back office costs to reflect the difference in NS system PTC miles and the DRR route miles with the one exception of 802.11 buildout costs DuPont accepts NS's position on Rebuttal and only adjusts the 802.11 buildout costs on a mileage basis.

[320] *Id.* pp. III-F-237-239.
[321] *Id.* p III-F-238

iii. PTC Locomotive Costs

NS accepts DuPont's unit cost of {{ }} to outfit each DRR road locomotive with PTC capability[322] but applies it to NS's overstated locomotive count. DuPont has applied this cost to its Rebuttal count of road locomotives.

iv. PTC Development Costs

On Opening, DuPont did not include any PTC development costs On Reply, NS included {{ }} for PTC development costs[323] DuPont acknowledges that some development costs will be incurred by the DRR and has accepted NS's figure on Rebuttal.

As part of this {{ }}, NS has included {{ }} which equals a portion of NS's costs for the PTC-related subsidiaries responsible for obtaining the required communications radio spectrum for PTC operations. As the DRR would be one of the leading determinants of the PTC frequency spectrum, being the first one on the block to have a PTC system, these monies will be used for interoperability integration.

v. PTC Expenditure Schedule

On Opening, DuPont included PTC costs in 2009 at the beginning of DRR operations NS spreads PTC costs over the 2010 through 2015 time period As PTC will be in place on the DRR from the beginning of operations in 2009, costs must be included at that time.

c. Detectors

NS claims DuPont failed to include costs for slide fences and understated the required number of failed equipment detectors ("FEDs").[324]

On Rebuttal, DuPont has included the costs for slide fences. However, DuPont has modified NS's Reply spreadsheet[325] by adjusting the slide fence requirements of the DRR by

[322] *Id* p III-F-239
[323] *Id* pp III-F-239-245 and NS Reply e-workpaper "DuPont C&S Estimate errata Reply errata xlsx," tab "Reply Components & Tabulation."
[324] *Id*, pp. III-F-246-248.

removing the slide fences NS added that were not included in the slide fence inventory provided by NS in discovery [326] The correction to the DRR's slide fence inventory caused changes in NS's cost calculations plus DuPont rejected NS's unexplained 20% mark-up to the average height of the DRR's slide fences [327]

As explained in Part III-B, DuPont disagrees with NS's FED spacing and continues to use its Opening FED spacing. The number of FEDs included on Opening was slightly overstated (273 should have been 265). On Rebuttal, the number of FEDs has increased by three due to increases in double-track for a total of 268.

NS also greatly overstated the number of dragging equipment detectors ("DED"). In Opening, DuPont included one DED with every FED. On Reply, without explanation, NS included nearly three times as many DEDs as FEDs by linking the number of DED's to the count of electric locks which makes no sense. On Rebuttal, DuPont continues to include one DED with every FED.

d. Crossing Signal Equipment

NS claims that DuPont's crossing signals inventory is inaccurate and essential equipment was omitted [328] NS's criticisms are addressed below.

NS claims that DuPont omitted many crossings from lines the DRR is building and incorrectly included crossings on lines the DRR is not building NS states that it has corrected the DRR crossing inventory. DuPont accepts NS's crossing inventory on Rebuttal.

NS claims that DuPont failed to include essential equipment for the DRR's crossing signals including unidirectional equipment at locations where train signal joints are present

[325] *See* NS Reply e-workpaper "Slide Fence Inventory.xlsx."
[326] *See* DuPont Rebuttal e-workpapers "Slide Fence Inventory REBUTTAL.xlsx" and "Slide Fences (NS-DP-C-18327 to 18336) pdf"
[327] *See* DuPont Rebuttal e-workpaper "Slide Fence Inventory REBUTTAL.xlsx" Changes made by DuPont in Rebuttal are highlighted in yellow
[328] *See* NS Reply, pp III-F-248-253

within the approach to the crossing, additional front and back flashing lights at signal crossing locations which are required to provide warning for different approach directions, cantilever signals at required locations, conduit for running underground cables and the termination shunts for crossing predictor equipment, the track connection kits for termination shunts and termination shunt cover assemblies. On Rebuttal, DuPont has included these additional items.

e. Communications

NS states that it accepted DuPont's material and installation unit costs for the DRR's communications system[329] yet NS included $255 million for communications costs compared to DuPont's $251 million. A review of NS's workpapers reveals that NS indexed the costs for a few components from 2005 to 2Q09. DuPont agrees with NS's revised costs for these items.

However, DuPont determined that NS failed to make one adjustment to its communications costs. As discussed above, as part of its PTC wayside costs, NS placed 60-foot towers at the same locations DuPont had placed 30-foot towers for communications. DuPont has accepted NS's 60-foot towers making the 30-foot towers unnecessary as the VHF equipment would be mounted on the 60-foot towers. NS failed to remove the costs for the 30-foot towers from its communications costs. DuPont has removed them on Rebuttal resulting in communications investment costs of $244 million for the DRR.

f. Hump Yard Equipment

NS included $213 million for integrated switching equipment in eight (8) hump yards on the DRR.[330] As discussed in Part III-C, hump yards are not necessary for the DRR and DuPont has not included these costs.

[329] *Id.* p. III-F-253.
[330] *Id.*

g. Summary

Based on the above, DuPont's signals and communications costs have increased to $1.490 million on Rebuttal.

7. Buildings and Facilities

DuPont's buildings and facilities were detailed in its Opening Part III-F-7. Briefly summarized, DuPont included facilities at six major yards, a headquarters building, fixed fueling facilities, facilities for direct-to-locomotive ("DTL") fueling, facilities for locomotive servicing and four locomotive shops. In addition, DuPont included crew, yard and MOW buildings and various other facilities as required [331]

NS's Reply buildings and facilities costs are much higher than those developed by DuPont on Opening. NS changed the design and costs of virtually every building on the DRR. NS also added many buildings never before included in a SAC proceeding. In addition, NS greatly increased the costs for lighting and paving. DuPont addresses NS's Reply below.

a. Headquarters Building

On Opening, DuPont specified a two-story 31,803[332] square foot building to house 142 headquarters personnel (in 103 offices) and with space for additional facilities.[333] NS argues that DuPont's building size is insufficient because, according to NS, the DRR headquarters building will house 1,233 personnel. NS estimates the size of the DRR headquarters building by dividing 31,803 square feet by 142 personnel and then multiplying the result by 1,233 personnel. Using this methodology, NS estimates that the DRR headquarters building would need to be 276,192 square feet in size and five stories high.[334]

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[331] *See* DuPont Opening, pp. III-F-43-48 and supporting workpapers

[332] On Opening, DuPont inadvertently included costs for a 20,000 square foot headquarters building. DuPont has used the correct square footage figure on Rebuttal.

[333] *See* DuPont Opening, p. III-F-44 and e-workpaper "DRR Facilities Cost errata.xlsx," tab "HQ Building."

[334] *See* NS Reply, pp. III-F-255-256

As discussed in Part III-D, NS's headquarters personnel count is overstated. On Rebuttal, the DRR headquarters personnel have increased to 429.[335] DuPont has continued to use its Opening methodology to develop the size of the DRR headquarters building. Based on 429 personnel and 308 offices, the DRR headquarters building requires 93,500 square feet which would be contained in a two-story building.[336]

On Reply, NS made several modifications to DuPont's headquarters building costs. For example, NS increased the number of fire hydrants from one to three. NS also claims that DuPont excluded costs for site items such as gates, electrical transformer and pad, and parking lot striping for the 110 spaces.[337]

On Rebuttal, DuPont has accepted NS's average cost of $120 per square foot[338] and applied it to the appropriately sized headquarters building of 93,500 square feet resulting in $11.2 million for the DRR headquarters building.[339]

b. Fueling and Locomotive Servicing Facilities

i. Fixed Fueling Facilities

On Opening, DuPont included fixed fueling platforms, with eight fueling stations, at its six major yards.[340] The location and sizing was provided by DuPont's operating witness based on the needs of the DRR. On Reply, NS included fixed fueling facilities with twelve fueling stations at each of its eight hump yards and four large flat yards and fixed fueling facilities with six fueling stations at ten other yards.[341]

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[335] In preparing for Rebuttal, DuPont discovered that the 142 personnel used in Opening was incorrect. The correct personnel figure is used in Rebuttal.

[336] *See* DuPont Rebuttal e-workpaper "DRR Facilities Cost Rebuttal.xlsx," tab "HQ Building."

[337] *See* NS Reply, p. III-F-257.

[338] *See* NS Reply e-workpaper "DRR Cost Per Building Facility Reply.xlsx," tab "Headquarters."

[339] *See* DuPont Rebuttal e-workpaper "DRR Facilities Costs Rebuttal.xlsx."

[340] *See* DuPont Opening, p. III-F-44.

[341] *See* NS Reply, p. III-F-258.

NS does not criticize the location and number of DuPont's Opening fueling facilities and does not demonstrate that they are insufficient to handle the DRR's requirements. NS attempts to justify its additional fixed fueling facilities in two ways. First, NS claims to have provided sufficient facilities to accommodate fueling activities required for DRR to comply with reciprocal obligations imposed by NS interchange agreements.[342] However, NS does not explain why fixed fueling facilities are needed in lieu of direct-to-locomotive ("DTL") fueling by tanker truck. Second, NS claims to have included fixed fueling facilities at the same DRR yard locations where NS currently has them.[343] Just because NS has fixed fueling facilities at a particular location does not mean that they are required. Furthermore, the DRR is not NS. Finally, as explained in Parts III-B and III-C, NS overstated the yard sizes and the locomotive requirements of the DRR. For all of the above reasons, DuPont has continued to rely on its Opening fixed fueling facilities.

NS accepts DuPont's base cost for each locomotive fueling station as a starting point and then adds costs for what NS claims are missing components. NS adds costs for hose reels, overhead service platforms and platform mounted fuel cranes and fuel management systems. NS used DuPont's Opening cost for hose reels so clearly DuPont did include them. On Rebuttal, DuPont has added the costs for the overhead service platforms, platform mounted fuel cranes and fuel management systems.

[342] *Id.* p. III-C-87.
[343] *Id.* p. III-C-205.

ii. Fueling by Truck and Locomotive Servicing Facilities

On Opening, DTL fueling (fueling by tanker truck) was used in the DRR's yard facilities at locations other than the DRR's six main yards. DuPont also included locomotive servicing facilities at these same locations.[344]

NS accepts DuPont's approach but only for certain yards identified by NS's operating plan.[345] As discussed in Part III-C, DuPont is not accepting NS's yards and continues to include the fueling by truck and locomotive servicing facilities included on Opening.

On Opening, DuPont inadvertently omitted the costs for the facilities needed at DTL locations. On Rebuttal, DuPont has included the items specified by NS at locations where DuPont has included locomotive servicing tracks but has substituted DuPont's Opening unit costs for NS's overstated costs for paving, lighting and track pans.[346]

c. Locomotive Repair Facilities

On Opening, DuPont included four locomotive repair shops at DRR major yards in Elkhart, IN, Conway, PA, Roanoke, VA and Chattanooga, TN. DuPont based its locomotive shops on actual maintenance facilities designed by Crouch Engineering, which are in use today. DuPont also included costs for tools and equipment for each facility.[347] The DRR's locomotive shops were sized to handle the DRR's Opening locomotive count of 584 road locomotives and 80 switching locomotives for a total of 664 locomotives.

On Reply, NS accepts the four locations specified by DuPont but adds six additional locomotive shops at Bellevue, OH, Decatur, IL, Enola, PA, Birmingham, AL, Linwood, NC and

[344] *See* DuPont Opening, pp. III-F-44-45 and e-workpaper "DRR Yard Matrix errata xlsx," tab "ADDL TRACK."
[345] *See* NS Reply, p. III-F-259
[346] *See* DuPont Rebuttal e-workpaper "DRR Facilities Cost Rebuttal.xlsx," tab "DTL Fueling."
[347] *See* DuPont Opening, p. III-F-45 and e-workpapers "DRR Facilities Cost errata xlsx" and "Locomotive Shop pdf."

Macon, GA NS rejects DuPont's locomotive shop costs, claiming the facilities and equipment are inadequate to service the DRR's locomotives.[348] NS's criticisms are addressed below

First, DuPont does not agree with NS that ten major locomotive repair facilities are required on the DRR. NS does not explain why four locomotive repair facilities strategically located along the DRR are not sufficient and why ten are required In fact, NS simply states that ten repair facilities were determined "[b]ased on its Operating Plan."[349] NS clearly has so many facilities because its count of 1,441 locomotives is grossly overstated As discussed in Part III-C, the DRR's locomotive count has increased from 664 on Opening to 909 on Rebuttal Therefore, on Rebuttal, DuPont has added two additional locomotive repair facilities (at Bellevue, OH and Atlanta, GA) to the four proposed in Opening for a total of six locomotive repair facilities

On Reply, NS identified many criticisms of DuPont's locomotive repair facility size and costs.[350] DuPont has reviewed its Opening costs along with NS's criticisms and Reply costs and determined that the Opening locomotive repair facility size and costs were understated.

On Rebuttal, DuPont has accepted NS's size of 93,085 square feet for each facility and the cost per facility included by NS

As noted above, DuPont has increased the number of locomotive repair facilities on the DRR from four to six. On Rebuttal, DuPont has included $186 million for the six locomotive repair facilities on the DRR.[351]

d. Car Repair Facilities

On Opening, the DRR did not include the cost of car repair facilities because its cars are obtained under a full service lease and car repairs are the responsibility of the lessor, presumably

[348] *See* NS Reply, pp III-F-259-263.
[349] *Id*, p III-F-259
[350] *Id*, pp. III-F-260-263
[351] *See* DuPont Rebuttal e-workpaper "DRR Facilities Cost Rebuttal xlsx," tab "Major"

by a contractor. However, the DRR provided space and tracks for contractor car shops at the DRR's Conway and Atlanta yards and rip at 45 locations on the DRR. DuPont's approach is consistent with prior STB decisions.[352]

On Reply, NS ignores what the DRR provided for on Opening. NS contends that the DRR would have to construct two car repair facilities at Chattanooga, TN and Elkhart, IN to handle repairs for foreign cars moving on the DRR. NS also included rip tracks at 27 locations.[353] NS also states that the DRR's car lessor would have no obligation to repair foreign cars.[354]

NS is wrong. The car repair contractor will have two facilities on the DRR and numerous rip track locations. What NS fails to grasp is that the DRR would be reimbursed for all repairs on foreign cars. As such, the car repair contractor would repair the foreign cars, using its own facilities, and the DRR would simply pass through the monies received for car repairs from foreign railroads to the contractor. In addition, NS provides no explanation as to why the car repair facilities need to be in Chattanooga and Elkhart.

While the DRR will provide space and tracks, the facilities and equipment at these locations will be provided by the contractor (not the DRR) as all car repair costs on DRR-owned cars are covered by the full service lease. NS claims that the DRR would need to provide several items at the rip track locations.[355] The DRR has provided for lighting, compressed air, power service and paved roadways.[356] The costs for tools and parts storage and any necessary canopies would be the responsibility of the car repair contractor.

On Rebuttal, DuPont maintains its Opening position on car repair facilities.

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[352] *See* DuPont Opening, p. III-F-46 and e-workpaper "DRR Yard Matrix errata.xlsx."
[353] *See* NS Reply, pp. III-C-225-226 and III-F-263.
[354] *Id.* p. III-C-89.
[355] *Id.* p. III-F-265.
[356] *See* DuPont Opening e-workpaper "DRR Facilities Cost errata.xlsx," tabs "Minor" and "Construct Minor."

e. Crew Change Facilities

DuPont's Opening crew change facilities were simple buildings designed to meet the basic functions they perform. DuPont provided large crew facilities, 2,240 square feet, at the six major yard locations and smaller facilities, 1,400 square feet, at 61 other locations for a total of 67 buildings.[357]

Before addressing NS's specific criticisms pertaining to the crew change facilities, the number of facilities must be addressed. Although NS agreed with DuPont's crew districts,[358] NS placed many of its crew change facilities in different locations, increased the number of crew change facilities from 67 to 79 and increased the number of locations with large crew facilities. DuPont included one facility at each crew change location. NS included two large crew change facilities at each of its eight hump yards, one large facility at five large flat yards and small facilities at 58 other locations. NS never explains why two large facilities are needed at each hump yard or why large crew change facilities are needed at more locations. NS does not explain why it changed the location of the crew change facilities to cover the agreed-upon crew districts. As discussed in Part III-C, NS's yard sizes are overstated, resulting in more large yards than the DRR requires.

On Opening, DuPont placed its crew change facilities at the end points of the DRR crew districts and provided for large facilities at its major yards. On Rebuttal, DuPont has continued to include its Opening crew change facilities.

On Reply, NS accepted DuPont's proposed sizes of the crew change facilities but identified many criticisms of DuPont's facility costs.[359] DuPont has reviewed its Opening costs

[357] *See* DuPont Opening, p. III-F-46
[358] *See* NS Reply, p. III-C-220
[359] *See* NS Reply, pp. III-F-265-266

along with NS's criticisms and Reply costs and determined that the Opening crew facility costs were understated

On Rebuttal, DuPont has accepted NS's costs for the small and large crew change facilities applied to DuPont's count of each facility.

f. Yard Offices

On Opening, DuPont included 42 yard office buildings at locations where there are car inspectors, yard crews or transportation department field personnel [360] These buildings were the same size (1,400 square feet) and cost as the small crew change facilities.[361]

NS rejected DuPont's size and cost as well as the number of yard offices. NS states that the same criticisms identified for the crew change facilities apply to DuPont's yard offices. NS based its yard office sizes on existing NS facilities, building large offices at 13 hump and large flat yards and smaller offices at 25 other yards for a total of 38 buildings

As discussed in Parts III-C and III-D, DuPont has added car inspectors and yard crews at various DRR yard locations Because of this, the number of yard buildings has increased to 54 on Rebuttal. DuPont, however, does not accept NS's increased building size. NS provided no explanation as to why DuPont's yard buildings are too small and no justification for the larger buildings NS included NS's approach is to simply assert that DuPont's building size is too small because it is apparently smaller than two buildings located at different places along NS's vast system that were arbitrarily selected by NS. NS provides no evidence that these selected buildings are "typical " Furthermore, the DRR is not the NS and the DRR is not required to replicate NS's facilities

[360] *See* DuPont Opening e-workpaper "DRR Yard Matrix errata xls," tab "DRR YARDS "
[361] *See* DuPont Opening, p III-F-47.

On Rebuttal, DuPont has continued to include yard buildings that are the same size as the small crew change facility and used the Rebuttal cost of the small crew change facility.

g. Maintenance of Way Buildings (Roadway Buildings)

On Opening, DuPont included 36 MOW buildings These buildings are the same size (and cost) as the small crew change buildings but configured differently with basic facilities for the work crew and signal maintainers plus a small garage to store materials and occasionally vehicles as needed [362]

On Reply, NS states that its criticisms of the crew change facility unit costs and calculations also apply to DuPont's MOW facilities. NS claims that DuPont's MOW facility is undersized and fails to provide adequate parking for oversized MOW vehicles or storage for materials, tools and other equipment [363]

To attempt to justify its claim that DuPont's MOW facility is undersized, NS cites to an existing facility in Mount Vernon, IL, stating that it is 1,530 square feet in size and used to house MOW crews only [364] However, NS provides no support for this statement. NS goes on to state that the DRR MOW facility would need to be 3,000 to 3,500 square feet in size, again with no support. NS then settles on a size of 2,240 square feet, the same size as a large crew change facility (instead of the small crew change facility). NS uses its large crew change facility cost for the MOW building. NS also claims that outdoor storage space or warehouses, in some instances, are necessary at the MOW facility locations.

NS's increased size is arbitrary and unsupported and DuPont does not accept it. NS has not shown that its MOW facilities have extra garage and outdoor storage space. In Mr Crouch's experience, working at and designing such facilities, many do not have any garage space at all

[362] *See* DuPont Opening, p III-F-47 and e-workpaper "DRR Facilities Cost errata xlsx," tab "MOW"
[363] *See* NS Reply, III-F-267-268
[364] *Id*, p III-F-268.

nor do they have a covered space for equipment let alone a fenced storage yard or warehouse DuPont has not included these additional items on Rebuttal.[365] DuPont has, however, adjusted the MOW facility cost to reflect the Rebuttal cost of the small crew change facility

DuPont notes that NS grossly overstated the number of MOW facilities NS included MOW facilities at 26 yards[366] and 65 facilities located outside yards for a total of 91 facilities, nearly three times the number included by DuPont. As discussed in Rebuttal Exhibit III-D-2, DuPont provided for thirty-six Roadmasters on the DRR in Opening and, therefore, DuPont included one MOW facility at each Roadmaster location In Reply, NS arbitrarily increased the number of Roadmasters and exaggerated the number of MOW facilities required by the DRR On Rebuttal, DuPont maintains the same thirty-six MOW facilities. Furthermore, DuPont notes that NS significantly overstated the costs for MOW facilities by including costs for 91 facilities at DRR yards instead of 26.[367]

NS also includes costs for thirteen (13) MOW mechanic facilities to service high rail MOW vehicles, located at each of NS's eight hump yards and five large flat yards.[368] DuPont notes that MOW mechanic facilities have never before been included in a SAC proceeding. Furthermore, DuPont included an allowance for equipment repairs in its Opening MOW costs and continues to do so on Rebuttal.[369] Therefore, these repair facilities are not needed and DuPont has not included them on Rebuttal

[365] DuPont notes that NS did not include costs for any warehouses at MOW field offices. NS did include warehouses at each of its 71 yards as discussed *infra*

[366] Thirteen buildings at large yards and thirteen buildings at small yards. *See* NS Reply e-workpaper "DRR Facilities List Reply xlsx," tab "Facilities Costs," Line 28.

[367] *See* NS Reply e-workpaper "DRR Facilities List Reply.xlsx," tab "Facilities Costs." Cells L47 and M47 both include the 65 MOW field offices shown on tab "Field HQ Offices "

[368] *See* NS Reply, p III-F-270.

[369] *See* DuPont Opening e-workpaper ' Exhibit III-D-3 DRR MOW errata xls," tab "Equipment," cell E26

h. Wastewater Treatment

NS claims that the oil/water separators included by DuPont are insufficient as they can only handle ten gallons per hour of effluent. NS has included costs for upgraded oil/water separators.[370]

NS is wrong in its criticism of DuPont's oil/water separator The oil/water separator included by DuPont on Opening is capable of handling 40-50 gallons per minute,[371] not ten gallons per hour. However, in Rebuttal, DuPont has accepted NS's wastewater treatment system because of the increased locomotive repair facility size

i. Other Facilities / Site Costs

NS claims that DuPont understated the amount of paving required for the DRR facilities by failing to provide paving for parking lots for yard, shop and transportation employees. NS used aerial photos of the template yards and facilities to estimate the DRR's requirements.[372] NS has provided no evidence that paving even exists in all its yards, much less the quantities specified by NS. NS's additional pavement quantities are overstated and unrealistic DuPont included sufficient paving for yards on Opening. In the experience of DuPont's engineering witness, Mr Crouch, parking is usually on either hard packed dirt or gravel that has been spread around over time from the sub-ballast of the yard tracks and paving is not required For automotive, intermodal and bulk transfer terminals, DuPont has accepted the paving requirements identified by NS as DuPont has accepted NS's sizes for these facilities.

DuPont does not, however, accept NS's paving unit costs. Although NS did not claim that DuPont's paving unit costs were inadequate, NS included significantly higher paving unit costs. As NS has not justified its higher paving unit costs, DuPont has continued to rely on its

[370] *Id.* p III-F-271
[371] *See* DuPont Opening e-workpaper "Oil-Water Seperator pdf"
[372] *Id.* pp. III-F-272-273

Opening paving unit costs at yards and facilities with one exception DuPont has accepted NS paving costs for the portion of the intermodal facilities where containers are stored.

NS claims that DuPont's lighting costs are insufficient and the DRR's lighting requirements are understated.[373] NS included proposed lighting layouts for various facilities in its Reply workpapers. NS's proposed lighting locations are shown as yellow circles with significant amounts of overlap.[374] The lighting locations specified by NS are not the existing lighting locations for NS's existing facilities. As demonstrated below, without supporting evidence or calculations, NS more than doubled the lighting necessary for each facility. Moreover, the lighting coverage shown by NS overlaps with residential areas and property outside the proposed railroad facilities. The proposed "stadium lighting" on 100-foot tall poles is not typical for all NS facilities NS included high mast lighting poles with twelve (12) fixtures per pole. Based on Mr. Crouch's experience, most existing NS facilities have wooden pole-mounted modest, lighting fixtures, which DuPont included on Opening, and not the gold-plated "stadium lights" specified by NS for each yard and facility NS's proposed lighting layouts are unrealistic, overstated and would most likely not be approved by local agencies due to light pollution of adjoining properties.

As NS did not rely on the existing lighting at the yards and facilities that NS used as its templates for lighting requirements, DuPont researched these locations using the internet and identified the existing lighting at each template facility.[375] NS used a yard at Moraine, OH as the template for its small classification yard and proposed eleven (11) high mast lights. In reality, there are no high mast lights at this yard. NS used a yard at Fort Wayne, IN as the template for

[373] *Id.* pp. III-F-273-274
[374] *See* NS Reply e-workpaper "09 Yard Lighting and Roadway Quantities pdf"
[375] DuPont was able to see the existing lighting at these facilities using Google Earth and Bing *See* DuPont Rebuttal e-workpaper "DRR Facility Lighting Rebuttal pdf"

its medium classification yard and proposed twelve (12) high mast lights. There are no high mast lights at this yard either. NS used a yard at Sheffield, AL as the template for its large classification yard and proposed forty-four (44) high mast lights. There are only six (6) high mast lights at this yard (with eight (8) fixtures on the poles instead of twelve (12) specified by NS) and the rest of the yard is lit by single lights on timber poles. Based on the above, DuPont has not accepted NS's grossly overstated lighting requirements for yards and continued to rely on the lighting included on Opening.

NS used a yard at Greensboro, NC as the template for its small intermodal facility and proposed eight (8) high mast lights. There are no high mast lights at this yard NS used a yard in Charlotte, NC as the template for its medium intermodal facility and proposed ten (10) high mast lights. There are currently two high mast lights at this yard (one at each end) and single lights on poles for the rest of this yard. NS used an unidentified yard as the template for its large intermodal yard and proposed fifty (50) high mast lights. DuPont identified this yard using the coordinates contained in NS's workpapers and determined that the existing facility only has twenty-five (25) high mast lights. On Rebuttal, DuPont has used its Opening lighting configuration applied to the small intermodal yard with no high mast lights. For the medium intermodal yard, DuPont has included two high mast lights (one at each end) with the Opening lighting configuration used in the remaining portion of the yard.[376] For the large intermodal yard, DuPont has included twenty-five (25) high mast lights

NS failed to provide the location information for the small automotive yard used by NS as a template for which NS proposed ten (10) high mast lights. DuPont reviewed NS's diagram and determined that three (3) high mast lights provide sufficient coverage For the medium

[376] DuPont notes that NS's high mast light cost includes twelve (12) fixtures. As noted above, the actual high mast fixtures identified by DuPont include only seven (7) or eight (8) fixtures On Rebuttal, DuPont has used NS's overstated high mast cost with twelve (12) fixtures even though this is an overstatement of the requirements

automotive yard template, NS used a yard in Petersburg, VA and proposed twelve (12) high mast lights Actual count at this yard is eight (8) high mast lights. For the large automotive yard, NS used a yard at Shelbyville, KY for the template and proposed sixty-three (63) high mast lights. This yard only has sixteen (16) high mast lights combined with smaller lights On Rebuttal, DuPont has included three (3) high mast lights for the small automotive yards, eight (8) high mast lights for the medium automotive yards and sixteen (16) high mast lights for the large automotive yard combined with the lighting fixtures used by DuPont on Opening.

For the bulk terminal template, NS used a yard in Harrisburg, PA This facility has no high mast lights, only single lights on timber poles. On Rebuttal, DuPont has used its Opening lighting specifications for the bulk transfer facilities.

NS also claims that DuPont failed to include the cost for the main electrical switchgear for each large yard and locomotive shop and failed to include cabling for distribution of power.[377] DuPont inadvertently excluded these items and has included them in Rebuttal

NS claims that DuPont included only 25 bollards in major yards and 6 bollards in minor yards. NS estimates that 200 bollards are needed per yard.[378] NS's addition of 175 bollards is unrealistic, unsupported and not required. Bollards are typically used only to protect the overhead doors of a shop and, occasionally, transformers on the ground. On Rebuttal, DuPont continues to use its Opening number of bollards.

j. Guard Booths

NS claims that DuPont did not include guard booths at the entrance of any yards NS states that it provided guard booths at every intermodal yard and automotive facility with two

[377] *See* NS Reply, pp. III-F-274-275
[378] *Id.* p III-F-275

booths at large facilities and one booth at small facilities.[379] A review of NS's workpapers, however, reveals a different story. NS included two guard booths at each of its eight automotive facilities for a total of 16 guard booths.[380]

On Opening, contrary to NS's assertion, DuPont included the costs for one 25' by 25' guard booth at each automobile yard based on DuPont's yard building cost.[381]

NS does not explain why two guard booths are needed at each automotive facility and DuPont continues to include one guard booth at each automotive facility. DuPont notes, however, that NS's guard booths are more appropriately sized than DuPont's building and, given the criticisms NS has lodged against DuPont's yard building costs, DuPont has accepted NS's Reply cost for a guard booth.

k. Mechanic Repair Shops

NS included 12 mechanic repair shops to "maintain and repair yard hostlers and forklifts."[382] Shops such as this have never before been included in a SAC proceeding. NS did not explain its rationale for the number and location of these facilities.

DuPont disagrees with the NS as to the need for these facilities. For instance, a yard hostler is not a piece of equipment. Rather, it is someone who shuttles locomotives around. All of the maintenance costs for the DRR locomotives have been accounted for elsewhere. As for forklifts, NS has not specified where these forklifts would be located. As noted earlier, the repair costs for all MOW equipment is accounted for in the MOW costs. Any forklifts needed by the car repair contractor would be his responsibility to maintain and repair. Any forklifts required by

[379] *Id.* pp. III-F-275-276.
[380] *See* NS Reply e-workpaper "DRR Facilities List Reply.xlsx," tab "Facilities Costs," Column (R).
[381] *See* DuPont Opening e-workpaper "DRR Facilities Cost errata.xlsx," tab "Auto Yards," Item No. 23. It is labeled as a "yard" building but is, in fact, the guard booth.
[382] *See* NS Reply, pp. III-F-276-277.

a locomotive facility would be repaired at that facility. NS has not supported the need for any mechanic repair shops and DuPont has not included them on Rebuttal.

l. Mechanical Offices

Although not discussed in NS's Reply evidence, NS included the costs for 26 mechanical offices [383] NS provided no explanation of the purpose of these facilities. These facilities are not needed as car repair personnel report to the contractor-provided car repair facilities and locomotive repair personnel report to the locomotive repair facilities Furthermore, DuPont has placed yard offices at all locations with mechanical (car inspection) personnel [384]

m. Observation/Yard Master Towers

NS included 29 observation buildings / yard master towers. NS attempts to justify their inclusion by claiming that they are present in two NS automotive yards.[385]

DuPont disagrees with NS The mere presence of these facilities in two NS yards does not justify their need on the DRR Furthermore, in addition to the towers at the eight automotive facilities, NS included two towers at each of its eight hump yards and one tower at each of its five large flat yards with no justification whatsoever. DuPont is not building any hump yards Finally, DuPont's operating witness McDonald does not recall any such facilities on any of the railroads he worked for during his extensive career nor does he see the need for them on the DRR.

DuPont notes that these towers have never before been included in a SAC proceeding DuPont has not included them on Rebuttal as they are not necessary.

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[383] *See* NS Reply e-workpaper "DRR Facilities List Reply xlsx," tab "Facilities Costs," Line 27, Columns (J) and (K).
[384] *See* DuPont Opening, p III-F-47
[385] *See* NS Reply, pp. III-F-277-278

n. Storage and Warehouse Buildings

NS included storage and warehouse buildings at each of its 71 yards totaling over $61 million. NS included 24,000 square foot buildings costing in excess of $3 5 million each at its eight hump yards and five large flat yards. NS included much smaller 1.952 square foot buildings costing $280,000 each at its other 58 yards [386] NS claims the smaller storage buildings are for maintenance-of-way storage while the larger buildings are for maintenance-of-way and "other railroad departments and functions "

NS has not supported the need for these buildings. The mere existence of buildings at the two locations identified by NS does not provide any proof that the DRR requires these facilities NS claims the smaller buildings, included at 58 "small" yards, are for maintenance-of-way materials but, as noted above in the discussion on maintenance-of-way buildings, NS only places MOW buildings at 13 of these yards Furthermore, in that same discussion. DuPont's engineering witness Mr. Crouch states that warehouses are not normally included at MOW facilities.

For the much larger and much more expensive buildings. NS has not provided any description of what would be stored in them. DuPont has already demonstrated that they are not needed for MOW materials. Locomotive items will be stored at the locomotive repair facilities [387] Likewise, car items will be stored at the car repair contractor's facilities. Office supplies will be stored at the various DRR offices NS has not supported the need for these storage facilities on the DRR

DuPont has not included these storage facilities on Rebuttal

[386] *See* NS Reply e-workpapers "DRR Facilities List Reply.xlsx," and "DRR Cost per Building Facility Reply xls "
[387] In fact, NS's locomotive shop design, which DuPont has accepted on Rebuttal, includes four separate locations for storing locomotive repair items. *See* NS Reply e-workpaper "DRR Locomotive Shop Floor Plan pdf "

o. Miscellaneous Buildings

Although not discussed in NS's Reply evidence, NS included the costs for 42 miscellaneous buildings measuring 400 square feet – three (3) buildings at each of eight (8) hump yards, two (2) buildings at each of five (5) large flat yards and one (1) building at eight (8) large intermodal facilities.[388] NS provided no explanation of the purpose of these buildings. Therefore, DuPont has not included them on Rebuttal

p. Foundation Designs

NS claims that DuPont did not account for the piles and caissons necessary to support some buildings. NS included costs for these items with the costs for the DRR's headquarters building and major warehouse buildings.[389] As noted previously, DuPont has accepted NS's cost per square foot for the headquarters building but rejected the major warehouse buildings included by NS.

q. Signal Maintainer Buildings

NS claim's that DuPont did not provide housing for signal maintainers.[390] NS is wrong. DuPont recognized the need to house signal maintainers and included space for them in its MOW buildings.[391]

NS claims that it is standard railroad practice to provide storage areas for communications and signal maintainers apart from maintenance of way track gangs and for that reason, NS included 150 separate signal maintainer buildings [392]

DuPont disagrees with NS. NS has not shown that it currently has such facilities or supported its claim of the need for separate storage areas. Furthermore, for the cost of the signal

[388] *See* NS Reply e-workpaper "DRR Facilities List Reply xlsx," tab "Facilities Costs," Column (U)
[389] *See* NS Reply, p III-F-279.
[390] *Id*
[391] *See* DuPont Opening, p III-F-47.
[392] *See* NS Reply, p III-F-268

maintainer building, NS did not use the cost of a signal maintainer building but rather used the cost of a facility that it considered appropriate in size.[393] This is a clear indication that such facilities do not exist on NS. Finally, separate buildings for signal maintainers have not been included in any other SAC proceedings

For the foregoing reasons, DuPont has not included NS's 150 signal maintainer buildings

r. Intermodal Terminals

On Opening, DuPont did not include intermodal terminal facilities but, as explained in Part III-B, DuPont agrees that intermodal yard facilities are required at 29 of the 31 locations identified by NS and DuPont has accepted NS's sizes for the intermodal terminals included. However, as discussed above under "Other Facilities / Site Costs," NS's paving and lighting costs for these facilities are grossly overstated and have been adjusted by DuPont on Rebuttal.

s. Bulk Transfer Facilities

On Opening, DuPont did not include bulk transfer "(TBT") facilities. As explained in Part III-B, DuPont agrees that small bulk transfer facilities are required at eleven of the fourteen locations identified by NS and DuPont has accepted NS's sizes for the bulk transfer terminals included However, as with its intermodal facilities, NS overstated the site costs for these facilities

Each of these locations includes less than 2 5 miles of track, yet NS includes an average of $2 4 million in site costs for each location, the majority of which is NS's overpriced lighting As discussed above, DuPont has modified NS's lighting costs.

NS also claims to have added security fencing and gates around the entire facility but DuPont was unable to locate where NS included this cost. In any event, fencing is not needed here. These facilities are used to transfer bulk commodities and other items like plastic pellets

[393] *Id*, p. III-F-279.

from railcars to trucks These are not the sort of items that require protection from theft. Furthermore, NS has not supported its assertion that its existing bulk transfer facilities have security fencing. DuPont has not included fencing for bulk transfer terminals in Rebuttal

t. **Automotive Facilities**

On Opening, DuPont identified and included eight (8) automotive yards and included costs for these facilities [394] As discussed in Part III-B, on Reply, NS eliminated five automotive yards from DuPont's yard list, modified the three other automotive yards to different type yards and then added eight (8) automotive yards. A comparison of the automotive yards included by DuPont and NS reveals that NS included seven (7) of the same yards that DuPont did The one difference is that NS converted DuPont's Avon Lake, OH automotive yard to an industrial support yard and added an automotive yard in Chicago.

On Rebuttal, as explained in Part III-B, DuPont has accepted NS's Chicago automotive facility and removed the Avon Lake, OH automotive facility for the same total of eight (8) automotive facility locations on the DRR. DuPont has also accepted NS's sizes for these facilities. As noted above, DuPont included the costs for one guard booth per automotive facility in opening and continues to do so in Rebuttal but has accepted NS's cost for the guard booth. DuPont has modified its Opening costs for these facilities to reflect NS's sizes accepted on Rebuttal and made the lighting modifications discussed previously.

8. **Public Improvements**

While public improvements are discussed in detail below, many of the costs for such items are included in other investment categories, such as track construction, bridges and signals Differences between DuPont and NS are addressed below.

[394] *See* DuPont Opening e-workpapers "DRR Yard Matrix errata xlsx," tab "DRR YARDS," and "DRR Facilities Cost errata.xlsx," tab "Auto Yards"

a. Fences

On Opening, DuPont included fencing for its yards and automotive facilities. Fencing was not used on other portions of the DRR.[395] NS accepts DuPont fencing specifications in general, but it added fencing at "key Maintenance-of-Way and signal facilities."[396]

DuPont was unable to find where NS included fencing for MOW or signal facilities in its construction costs and, therefore, is unable to respond to NS. On Rebuttal, DuPont has continued to include fencing at the DRR yards and automotive facilities

b. Signs and Road Crossing Devices

The parties generally agree on the signs to be included. However, NS added one more category of signs, emergency notification signs at railroad crossings, which include an "800" number to call in case of emergency. DuPont accepts these signs and includes them on Rebuttal

NS rejected DuPont's installation costs for crossbucks stating that DuPont improperly relied on the Tennessee Department of Transportation's ("TDOT") costs for highway signage instead of TDOT's cost for railroad crossbuck signage NS also claims that DuPont's installation cost does not take into account additional measures required to install signage on the DRR right-of-way. NS substituted a cost for crossbuck installation based on costs from actual NS projects[397] On Rebuttal, DuPont has accepted NS's cost for crossbuck installation.

c. Grade-Separations

Graded-separated crossings are addressed in Part III-F-5.

[395] *See* DuPont Opening, p III-F-48
[396] *See* NS Reply, p III-F-280.
[397] *Id*, p. III-F-281

d. At-Grade Crossings

NS accepts DuPont's number of at-grade crossings but rejects DuPont's unit cost per track-foot of crossing.[398] On Rebuttal, DuPont accepts NS's unit cost per track-foot of crossing.

e. At-Grade Crossing Detours

NS claims that DuPont failed to include costs for roadway detours and signage while roads are closed for DRR track and crossing construction.[399] Not only is NS incorrect, the costs included by NS are a double-count.

DuPont included costs in Opening for road detours under Roadbed Preparation and NS accepted those costs.[400] It has been a long-established precedent that a stand-alone railroad only needs to include the costs for road detours on lines built subsequent to the ICC Engineering Reports.[401] NS's inclusion of additional costs for road detours is a double-count and should be rejected

f. At-Grade Crossing Vegetation Removal

NS includes costs for vegetation removal at highway at-grade rail crossings.[402] These costs are a double-count and should be rejected. Both parties included costs for clearing and grubbing in their respective roadbed preparation costs[403] and both parties included annual costs for vegetation control in their respective maintenance-of-way costs.[404]

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[398] *Id.* pp III-F-282-283.
[399] *Id.* pp. III-F-283-284
[400] *See* Part III-F-2-e-vii, *supra* *See also* NS Reply, p III-F-115
[401] *See* DuPont Opening, p III-F-23 and note 54.
[402] *See* NS Reply, pp III-F-284-285
[403] *See* Part III-F-2-a, *supra*. *See also*, NS Reply, pp III-F-51-54
[404] *See* DuPont Opening, Exhibit III-D-3, pp. 22-23 *See also* NS Reply, pp III-D-252-253.

9. Mobilization

On Opening, DuPont applied a 2 7 percent mobilization factor to all DRR road property investment accounts except land NS accepted DuPont's factor.[405] However, NS added nearly $112 million in mobilization costs for land under the guise of "real estate acquisition costs."[406] NS's costs are improper and should be rejected.

The Board has consistently held that mobilization only applies to construction costs.[407] In Simplified SAC cases, the Board has expressly stated that mobilization only covers "road preparation, track, tunnels, bridges and culverts, signals and communications, buildings and facilities, and public improvements."[408]

Despite this unequivocal precedent, NS has requested that the Board include nearly $112 million in extra mobilization costs to cover asserted "real estate acquisition costs." DuPont has already included sufficient costs to cover the acquisition of the real estate needed for the DRR (see Section III-F-1), but NS would have the Board also add a variety of supplemental costs such as title work, negotiations, expert appraisals, recording fees, and numerous other additional costs.[109] The Board should deny NS's request to inflate the mobilization figure for the DRR with supplemental costs for real estate acquisition[410].

The justification provided by NS for this departure from established precedent is that the DRR is purchasing a "massive amount of real estate" in an "incredibly short period of six

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[405] *See* NS Reply, p. III-F-285

[406] *Id* pp. III-F-285-290

[407] *See AEPCO*, p. 132 ("Mobilization involves the marshaling and movement of people, equipment, and supplies to the various construction sites and other pre-construction coordination and activities"), *FMC*, p. 818 ("Mobilization costs reflect the cost of assembling equipment, personnel and facilities at designated places so that construction may commence"); *APS*, p. 401 ("Mobilization costs cover expenses associated with moving personnel, materials, supplies, and equipment to job sites and the establishment of offices and other facilities prior to commencement of a construction project.")

[408] *See Simplified Standards*, p. 48

[409] *See* NS Reply, p. III-F-289

[410] *See APS*, pp. 402-403 (rejecting railroad attempt to add "transaction costs" to real estate valuation)

months."[411] The Board should summarily reject such a justification as an impermissible barrier to entry and contrary to basic SAC principles. As stated by the ICC, "any restriction in the supply of resources necessary to construct the SARRs in the minimum time dictated by technological feasibility represents a barrier to entry."[412] Moreover, the implicit claim that the DRR is dramatically beyond the scale of any prior SARR is not tenable. NS has proposed that the DRR should have 7,343.55 route miles,[413] which is only 39% larger than the SARR in *McCarty Farms*.[414]

NS also contends that the supplemental costs are necessary because they represent "real world" land acquisition costs that NS itself incurs when it buys land.[415] This is a classic barrier to entry that should be rejected by the Board.[416] NS has not shown, or even attempted to show, that it actually incurred these types of costs when it (or its predecessors) originally acquired the right-of-way that is being replicated by the DRR.[417] NS's attempt to include mobilization costs for land acquisition is reminiscent of the effort of certain defendants to include an assemblage factor in real estate acquisition – an effort that has been rejected by the Board unless the defendant can show that it paid such a cost.[418]

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[411] *See* NS Reply, p. III-F-286.

[412] *See Coal Trading*, p. 413. *See also WTU*, p. 471 (rejecting assertion of inflated costs because "[e]xisting railroads were built on a piecemeal basis, and were not saddled with a need to marshal, in such a short period of time, the resources required to construct a 1,400-mile rail system.")

[413] *See* NS Reply, p. III-B-6.

[414] *See McCarty Farms*, p. 490 (using 4,469.3 route miles).

[415] *See* NS Reply, pp. III-F-286-287.

[416] *See Coal Trading*, p. 413 ("Defendants' argument that they too would face these costs if they entered the market today is irrelevant to the question of whether entry barriers exist for this market. The entry process actually faced by the incumbent was quite different from that hypothesized for the new entrant.").

[417] *See McCarty Farms*, p. 506 ("Only when the incumbent carrier has incurred a sunk cost should that cost be included in the SAC analysis.")

[418] *See Duke/NS*, p. 169 (n. 97) (assemblage factor is an impermissible barrier to entry unless the defendant railroad can show that it incurred such costs for the rail line at issue), *see also WTU*, pp. 672-673 ("the cost of needed permits, licenses and environmental compliance also must be considered as a barrier when that cost was not incurred by the incumbent.")

Not only has NS failed to make any attempt to show that it incurred these supplemental real estate acquisition costs for the lines replicated by the DRR, but the predecessor railroads to NS benefited from federal land grants Consequently, it cannot be the case that the predecessors to NS incurred "particularly significant" costs "to identify and negotiate with landowners."[419] In fact, some of the NS rail lines replicated by the DRR were built via federally granted land. The NS line between Meridian, Mississippi and Chattanooga, Tennessee originated in federal land grants to the Northeast and Southwest Alabama Railroad ("NE & SW RR") and the Wills Valley Railroad ("WVRR"). These land grants were originally made by the federal government in 1856 (see Public Law 34-41, 11 Stat. 17), and then assigned to the NE & SW RR and the WVRR by the State of Alabama.[420] The rail line from Chattanooga to Meridian eventually came to be owned by the Alabama Great Southern Railroad, which was absorbed by the Southern Railway and, finally, NS itself

10. Engineering

The parties agree on the application of a 10 percent engineering additive to the total construction cost, excluding land acquisition costs.[421]

11. Contingencies

The parties agree on the application of a 10 percent contingency factor to the total construction cost, excluding land acquisition costs.[422]

[419] *See* NS Reply, p III-F-286.
[420] *See* Acts of the Sixth Biennial Session, at p 430-431, Joint Resolution of the Alabama General Assembly (January 30, 1858)
[421] *See* NS Reply, p. III-F-290.
[422] *Id*

12. Construction Schedule

NS accepts DuPont's 30-month construction period but adds costs "to account for the real world effect of lost production due to winter cold and rainfall."[423] NS's added costs are unnecessary as well as a barrier to entry and should be rejected.

Over 75% of NS's added costs are applied to grading activities.[424] The DRR's 30-month construction schedule has sufficient flexibility to accommodate a shifting of the grading activities should the need arise.[425] Under DuPont's construction schedule for the DRR, grading activities are not scheduled to begin until over 50% of the land has been acquired. If necessary, grading activities could begin sooner. Conversely, there is a three-month window at the end of the construction schedule that can be used if necessary.[426]

Under the theory of unconstrained resources, the DRR could accelerate all of the construction processes identified by NS as affected by winter (earthwork, bridges, tunnels, sub-ballast, ballast and track construction) in the non-winter months through the deployment of more personnel and equipment.

The DRR would handle rain-delayed construction in the same manner, i.e., flexibility is available in the construction schedule plus construction could be accelerated and/or additional resources deployed as necessary to allow for days when rain (or other weather events) would prevent construction work.

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[423] *Id.*

[424] *See* NS Reply e-workpaper "DRR Winter Costs by Division NS Reply.xlsx," tab "Cost Summary" where $311 million out of a total of $405 million ($344 million for winter and $61 million for weather delays) is assigned to earthwork activities.

[425] In fact, the DRR schedule is sufficiently long enough to accommodate changes in the schedule during any season, if necessary. Under the concept of unconstrained resources, the construction schedule only needs to be as long as the most demanding project. On the DRR, the most demanding project is the Lake Pontchartrain Bridge which could be completed in 26 months. This project would be unaffected by NS's winter costs and only slightly affected by NS's alleged days lost to rain events.

[426] This three-month window is to allow for operational testing but the entire railroad does not have to be complete in order to begin testing. Testing can be started on those sections that are complete and finish up as the last sections are completed.

DuPont also notes that there are several problems with NS's calculations. NS assumes average production during all months allotted to an activity As noted above, the DRR would increase construction activity, if necessary, in the non-winter months. In addition, as discussed throughout this Part III-F, NS's calculations are based on overstated quantities, overstated unit costs and unnecessary tasks (such as stripping, undercutting and over-excavation of rock)

Finally, NS's addition of winter costs has been previously rejected by the STB[427] and costs associated with weather delays have never before been presented in a SAC proceeding

NS's additional costs are unwarranted, overstated, have been rejected by the STB in the past and must be rejected here A least-cost, most efficient railroad such as the DRR would certainly make adjustments in the schedule before incurring these types of costs

13. Joint Facilities / Shared Assets

NS Reply Section III-F-13 takes the position that the DRR must pay for the construction of jointly held lines over which the DRR operates via operating agreements with the entities that own the lines NS's position is that, because NS is a part owner of the lines in question, the DRR must pay a fraction of the hypothetical construction costs of the segments equal to the NS ownership percentage of the lines.

Specifically, NS states.

> NS has a significant ownership interest in several of the foreign railroads traversed by the DRR, including the Conrail Shared Asset Areas, the Terminal Railroad Association of St Louis (TRRA), Indiana Harbor Belt (IHB), and the Belt Railway of Chicago (BRC) Because NS's rights to operate over these lines are an inextricable part of its ownership interests, the DRR could exercise such operating rights only if it acquired NS's ownership rights in those lines. Accordingly, the DRR must pay the cost of construction of NS's share of those lines, including roadbed preparation costs.[428]

[427] *See Otter Tail*, p. D-18.
[428] *See* NS Reply, p III-F-58

NS's position is wrong because the joint facility railroads are third party entities, not co-defendants. Furthermore, in the case of Conrail and IHB, the ownership interest in these third parties is held by another third party, NS Corporation, not by NS Rail, and the DRR is stepping into the shoes of NS Rail, not NS Corp. In the case of the BRC and TRRA, NS opportunistically treats these partially-owned, third-party NS Rail subsidiaries different from another partially-owned subsidiary, TTX Company, simply to achieve a result-oriented objective.

However, even if the Board were to agree with NS's assertion that the DRR is required to "acquire NS's partial ownership rights" for the lines in order to participate in the operating agreements, NS has employed an inaccurate and improper methodology to determine the amount that the DRR would pay to acquire those rights. First, the DRR's ownership cost would not be determined based on replacement construction costs, but rather on a price negotiated under the going concern assumption. Second, NS fails to include the revenue share that NS earns on the facilities as a part owner (through fees paid by users of the facilities), so NS's model forces the DRR to pay double for its use of the facilities while receiving no benefit from its ownership stake.

a. DRR Is Not Required To Construct The Facilities Of Non-Defendant Third Parties

NS's assertion that the DRR must also acquire NS's ownership interests in Conrail, IHB, the BRC, and the TRRA is predicated upon an incorrect interpretation of the Board's *AEPCO 2005* decision. That decision addressed a very different scenario than the scenario faced by the DRR.

In the *AEPCO* case, the issue movement was a BNSF-UP joint line movement, and both BNSF and UP were defendant railroads. The SARR in that case was comprised of segments from both BNSF's and UP's rail networks. The SARR opted not to build an intermediate

segment of rail that was owned by UP and over which BNSF had trackage rights. The reason the Board rejected the arrangement posited by AEPCO was that, because the rail line was wholly owned by a co-defendant, the SARR would not be bearing the full cost of serving the issue and other selected traffic without constructing the facility

The Board stated:

> Complainants...have long been permitted to hypothesize a SARR that would utilize trackage rights...where those trackage rights have replicated how the defendant railroad was actually moving the issue traffic, and where the line has belonged to a third-party, i.e., a railroad that was not a defendant in that rate case. In those cases, use of trackage rights was allowed in the SAC analysis because the third-party carrier was not responsible for providing the service and the revenue requirements of the third-party carrier were not at issue in the rate case [429]

The key phrase here is clearly "where the line has belonged to a third-party." Conrail and IHB are clearly independently operating third-parties. Also, the BRC and TRRA, while technically subsidiary companies in that they are commonly held, in part, by NS Rail, operate independently

More to the point, however, none of these railroads are co-defendants in this proceeding, they are not responsible for providing the service, and their revenue requirements are not at issue in this case. Therefore, the NS attempt to require the DRR to incur ownership costs for these joint facilities and to calculate those costs based upon replacement values is unwarranted and improper.

i. NS Rail Does Not Own Conrail Or IHB

NS argues that the DRR must assume NS's role as part owner of Conrail and IHB if DRR wishes to step into NS's shoes. However, NS Rail does not own any part of Conrail or IHB. NS Rail's parent, NS Corporation, is a part owner of Conrail and IHB. Moreover, NS Corporation

[429] *See AEPCO*, p. 10.

does not own Conrail's assets. Therefore, even if stepping into NS's shoes means acquiring an ownership interest in joint facilities owned by NS Rail. Conrail and IHB are not owned by NS Rail, which is the defendant in this proceeding and the provider of the rail service replicated by the DRR in the SAC analysis.[430]

As indicated in NS Rail's 2011 Annual Report Form R-1.

> ***
>
> Exact name of common carrier making this report: Norfolk Southern Combined Railroad Subsidiaries* (NS Rail) is comprised principally of Norfolk Southern Railway Consolidated.[431]
>
> ***
>
> *Norfolk Southern Combined Railroad Subsidiaries (NS Rail) includes the affiliated railroads under the COMMON CONTROL of Norfolk Southern Corporation (NS). The major subsidiary is Norfolk Southern Railway Company and consolidated subsidiaries (NSR).[432]
>
> ***
>
> NS is the parent holding company of NSR...
>
> Through a limited liability company, NS and CSX Corporation (CSX) jointly own Conrail Inc (Conrail), whose primary subsidiary is Consolidated Rail Corporation (CRC) NS has a 58% economic and 50% voting interest in the jointly owned entity, and CSX has the remainder of the economic and voting interests .
>
> CRC owns and operates certain properties (the Shared Assets Areas) for the joint and exclusive benefit of NSR and CSX Transportation, Inc (CSXT). The costs of operating the Shared Assets Areas are borne by NSR and CSXT based on usage In addition, NSR and CSXT pay CRC a fee for access to the Shared Assets Areas.[133]

Further proof that the CRC and IHB rail lines in question are not owned by NS Rail can be found in the very same NS Rail R-1 schedule NS points to as proof that it holds equity interest

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[430] It also would be an impermissible barrier to entry to deny the DRR access to the same production process as NS Rail merely because NS Rail's access to certain trackage rights is attributable to its parent company's ownership interest in the joint facility railroad

[431] NS 2011 Annual Report Form R-1, p 2

[432] *Id*, p. 4

[433] *Id*, p 9.

in the BRC and the TRRA. Specifically, NS points out that Schedule 310 lists the BRC (25.00%) and the TRRA (14.29%) as entities in which NS Rail holds an ownership interest [434] Conrail and IIIB are notably absent from the list of entities included on Schedule 310, because NS Rail simply does not hold an equity interest in either.

Furthermore, when NS Corporation and CSX acquired Conrail, the assets were divided into three pools assets that would become part of the NS Rail system; assets that would become part of the CSXT system; and, assets that would remain part of the Conrail System.

In a 2003 NS 8-K Report, NS explained in detail the structure of the Conrail acquisition In its presentation, NS made the following statements.

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> The transaction structure of Conrail is easily understood if you look at a map. When we (NS and CSX jointly) bought Conrail we divided up the system to three parts routes that went to CSX, routes that went to NS, and the Shared Asset Areas. The key here is that NS and CSX bought the stock of Conrail not the assets Conrail still owns these routes, and simply leases them to the owner roads. [emphasis added]

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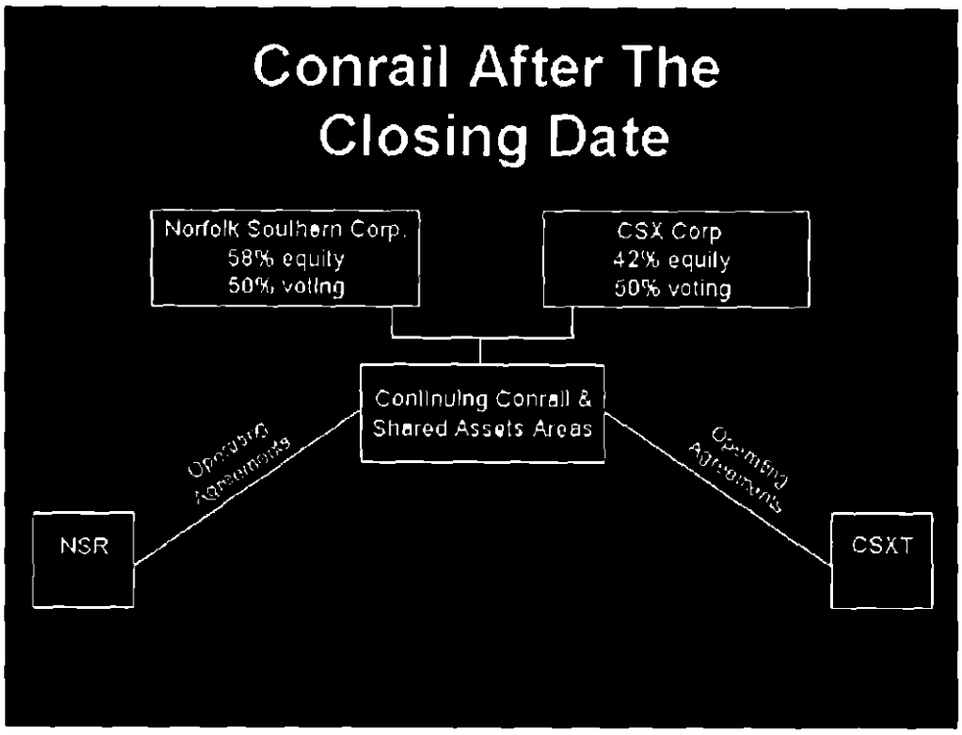
[434] *See* NS Reply, pp. III-F-312, 314



> NS and CSX have joint access to the Shared Assets Areas. We both pay fees to Conrail for the use of the Shared Assets Area, and for the switching and handling services Conrail employees provide. Using operating and lease agreements, a substantial portion of Conrail's assets were allocated to NS and CSX for our use, but the ownership of Conrail assets remains at Conrail. [emphasis added][435]

NS Corporation simply did not buy the assets of Conrail. Rather, Conrail maintained its ownership of the assets that it operates on the behalf of its lessee roads. From the acquisition date in 1998 through August 27, 2004, Conrail continued to own and operate all of the track and structures it owned and operated before the 1998 acquisition The Conrail network that was not part of the Shared Asset Areas was divided into two separate operating entities (PRR and NYC) which were run by Conrail for the benefit of NS Rail (PRR) and CSXT (NYC) PRR made up

[435] Slides and comments of John P. Rathbone, Senior Vice President and Controller, Norfolk Southern Corporation, Special Securities Analyst Meeting, Brosnan Forest, S C , February 28, 2003 (part of Norfolk Southern Corporation's Form 8-K Report and Presentation to the SEC), available online at. http://yahoo.brand.edgar-online.com/EFX_dll/EDGARpro.dll?FetchFilingHTML1?ID=2182085&SessionID=n1mvHqRGPh-FN77.

approximately 58 percent of the non-Shared Asset Areas Conrail network, and NYC made up approximately 42 percent. NS applied purchase accounting to account for the joint acquisition of Conrail. As noted by NS,

> This requires the buyers to revalue the acquired company's balance sheet to reflect the purchase price Assets and liabilities are stated at their fair market value If the purchase price exceeds the fair value of the assets and liabilities, goodwill is created However, in our case the fair value of the assets exceeded the purchase price and no goodwill was generated.[436]

When judged against Conrail's assets, NS Corporation clearly paid less than fair value to acquire Conrail Furthermore, because the DRR is stepping into the shoes of NS Rail, not NS Corporation, it does not need to assume ownership of any facility NS Rail itself does not own, including CRC and IHB.

ii. The DRR Is Not Required To Acquire The NS Rail Ownership Interest In The BRC And TRRA

With respect to the BRC and TRRA, NS claims that, because they are listed in NS Rail's R-1 Schedule 310 as entities in which NS Rail holds an equity interest, the DRR should be forced to assume the same position in order to step into NS's shoes and utilize the trackage rights terms NS uses over those lines. This NS position is highly opportunistic and result-oriented because it is inconsistent with NS's treatment of another partially-owned NS Rail subsidiary, TTX Company, in the SAC analysis.

Schedule 310 of the NS R-1 indicates that NS holds a 19 65 percent ownership interest in TTX Company, which is wholly owned by the North American Class I rail carriers and which "own|s| and manag|es| a fleet of more than 200,000 flat cars, boxcars and gondolas that move intermodal containers, automobiles, lumber, machinery, building materials, steel and other

[436] *Id*

commodities across Canada, Mexico and the United States."[437] In calculating its operating costs in Opening, DuPont classified TTX intermodal cars as railroad-owned equipment, and assumed it would lease and provide a pool of intermodal flat cars to perform this service. In Reply, NS states that DuPont's calculation of car hire costs is understated, and that, "the primary source of DuPont's understatement is an improper conversion of the car owner."[438] NS further stated that, "Review of the traffic records indicates that roughly three-quarters of the DRR's intermodal shipments moved in private equipment, consisting of more than 22,000 different flat cars."[439] NS's work paper supporting this claim shows that all of the 22,000 plus cars NS identified as private cars are owned by TTX Company.[440] To "correct" DuPont's statement of car costs related to DRR intermodal shipments, NS "applies the private car charge—not DuPont's substituted lease cost—for 69% of the DRR's intermodal flat-car miles, to reflect NS' real world experience." Here, NS properly treated the TTX Company as an independent third party, despite the fact that NS owns 19.65% of TTX Company, as clearly indicated on its 2011 R-1 Schedule 310

NS clearly and correctly recognized that DRR should not be required to acquire an ownership stake in TTX Company to step into NS's shoes and move intermodal traffic. Rather, NS applied the TTX car hire rate to the DRR intermodal traffic moving on TTX cars. This is no different conceptually from the DRR's payment of trackage rights to operate over the BRC or TRRA. Under the NS's flawed logic and methodology that it seeks to apply in Section III-F-13 with respect to the rail lines in question, DRR would need to acquire an ownership stake in TTX company comparable to that held by NS.

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[437] *See* http://www.ttx.com/AboutTTX/company-overview.aspx

[438] *See* NS Reply, p. III-D-30

[439] *See* NS Reply, p. III-D-31

[440] *See* NS Reply e-workpaper "FlatCar_Inst_Num.xlsx," tab "Results."

b. NS Has Not Properly Calculated The DRR's Ownership Costs For NS-Owned Joint Facilities

As DuPont discussed in the preceding section, NS is simply wrong to require the DRR to acquire an ownership interest in Conrail, IHB, the BRC and the TRRA. However, even if the Board were to agree with NS, NS clearly has not properly calculated what would be the DRR's ownership cost for the trackage rights used. In addition, while NS attempts to impose the costs of ownership upon the DRR, it denies the DRR certain benefits of the same ownership

c. NS Improperly Substitutes Replacement Costs For Ownership Costs

The metric NS employs to approximate the "ownership costs that NS incurred to obtain its rights" is the present day replacement costs of the physical plant that makes up the facilities Even if it were appropriate for the DRR to make a capital expenditure to acquire ownership interest in the line segments in question, including the Shared Assets Areas (which it is not), the present value construction costs of the rail lines' physical plant would not provide a reasonable approximation of the ownership acquisition costs.

NS did not acquire its ownership interest in any of the joint facilities by constructing a portion of the facilities In its discussion of the BRC agreement that NS uses to support its claims that DRR should be expected to partially construct a line that is commonly held by multiple ownership interests, NS points out that, "any railroad wishing to become a party to the agreement is required .. to purchase a capital stake in the BRC [in the form of] not less than the required number of par value shares of the capital stock of the Belt Company".[441] The par value of a security is the nominal value determined by the issuing company to be its minimum price. However, NS does not propose that the DRR be afforded the opportunity to purchase a stake in the BRC via the stock purchase channel that actually exists as explicitly outlined in the

[441] See NS Reply, pp. III-F-313-314, emphasis in original

agreement to which NS cites in support of its position Rather, NS would force the DRR to physically construct a portion of the BRC line segments it uses. Therefore, NS's Reply methodology cannot possibly be construed as an attempt to "approximate the ownership costs that NS incurred to obtain its rights."

Similarly, NS Corporation obtained its ownership stake in the Conrail Shared Asset Areas, (along with its IHB position) as part of the Conrail acquisition transaction But the purchase price for the Conrail acquisition was based on a stock buyout, not on the present-value replacement cost of the Conrail physical plant. Likewise, NS acquired its ownership rights in the TRRA "by succession to the interests of NS's predecessor railroads the Wabash Railroad Company and the Southern Railway Company, which acquired ownership interests in TRRA in 1889 and 1902, respectively."[112]

As part of the SAC analysis, the Complainant must develop construction cost estimates for the portions of the defendant railroad's system it chooses to include in its system. The footprint of the DRR system will not change whether the DRR is required to acquire ownership interest in the lines in question or not. That is, the question is not whether the DRR system should be physically expanded through further construction, but rather whether the DRR must make a capital outlay to enjoy ownership status of an entity that will exist and operate with or without the DRR. Therefore, NS's construction cost estimates are irrelevant and do not serve as a reasonable proxy for the acquisition costs one could expect to pay for a stake in a going concern NS has completely failed to provide a reasonable approximation of the actual cost to acquire ownership in the subject rail lines, even if one were required

As discussed above, DRR should not be required to acquire an ownership position in the Shared Asset Areas, as NS Rail does not itself hold an ownership stake. However, even if it

[112] *See* NS Reply, p. III-F-315

were appropriate, the ownership position should be based on the actual purchase price paid by NS Corporation. NS paid $5 8 billion, and CSX paid $4.2 billion ($10 billion total) for Conrail's roughly 10,700 route miles in 1998. This equates to $934,579 per route mile. The purchase price and ownership stake for NS and CSX was based on the relative miles over which each would operate following the acquisition. The DRR operates over 69.7 miles of the Conrail Shared Asset Areas At $934.579 per route mile. the cost to NS/CSX to acquire 69.7 miles of Conrail was $65 1 million.[443] If the DRR were to step into NS' shoes and acquire a 58 percent ownership stake in the portion of the Shared Asset Area over which it operates, that ownership stake would cost $37.8 million.[444] Restated at 2010 levels. this equates to $50 million dollars [445] This is a far cry from NS' estimate of $352.9 million in capital costs to construct the portion of the Conrail Shared Asset Area used by the DRR.

Similarly, the BRC operating agreement reads, in part:

> Whereas, each of the Railway Companies now is the owner of at least 2,600 shares. of the par value of $100 each. of the capital stock of the Belt Company and each of the Railway Companies has agreed to execute this Agreement.[446]

NS Rail owns 25 percent of BRC. as does CSX. BSNF and CN each own 16 67 percent, and UP and CP each own 8 33 percent. Based on UP and CP's minimum share status and the above whereas clause, NS owns 7.803.12 shares (25 / 8.33 x 2,600). At the par value of $100. DRR would need to pay $780.312 to step into NS' shoes as a 25% owner of BRC.[447] Alternatively, NS reported in its 2010 R-1 that its equity in the BRC at the start of 2010 was $14.991 million[448] associated with its 25% stake. The BRC encompasses 28 route miles. 16.2 of

[443] $934,579 per mile x 69 7 miles = $65,140,156.
[444] 58 percent ownership stake times $65,140,156 = $37.781,291.
[445] *See* DuPont Rebuttal e-workpaper "Acq Cost and Rev Est xlsx," tab "Conrail Acq "
[446] *See* NS Reply e-workpaper "BRC Operating Agreement pdf."
[447] *See* DuPont Rebuttal e-workpaper "Acq Cost and Rev Est xlsx," tab "BRC "
[448] 2010 NS R-1, Schedule 310A, Line 2, Column (b)

which (57 86%) are used by the DRR.[119] Accepting NS's framework in which the acquisition costs are based on the portion of the system used by DRR, the acquisition costs for DRR's stake in the BRC as of January 1, 2010 would be $8 673 million.[450] Either way, NS' estimate of $57.4 million for the capital costs to construct a portion of the BRC is clearly vastly overstated.

Similarly, CP Rail (aka SOO Line) reported in its 2010 R-1 that its equity in the IHB at the start of 2010 was $39.123 million[451] associated with its 49% stake. NS and CSX jointly own the remaining 51 percent of IHB, with NS controlling 58% of that amount, or 29 58 percent of IHB The IHB encompasses 54 route miles, 15.6 of which (28.89 percent) are used by the DRR.[452] Accepting NS's framework in which the acquisition costs are based on the portion of the system used by DRR, the acquisition costs for DRR's stake in the IHB as of January 1, 2010 would be $6 824 million.[153] NS' estimate of $62.1 million for the capital costs to construct a portion of the IHB is clearly vastly overstated

Finally, UP Railroad reported in its 2010 R-1 that its equity in the TRRA at the start of 2010 was $34.428 million[151] associated with its 42 9 percent stake NS owns 14 29% of TRRA per its Schedule 310 filing. The TRRA encompasses 60 route miles, 9.78 of which (16 3%) are used by the DRR.[455] Accepting NS's framework in which the acquisition costs are based on the portion of the system used by DRR, the acquisition costs for DRR's stake in the TRRA as of January 1, 2010 would be $1.869 million[456] NS' estimate of $19.7 million for the capital costs to construct a portion of the IHB is clearly vastly overstated.

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[419] *See* DuPont Rebuttal e-workpaper "Acq Cost and Rev Est.xlsx," tab "BRC "
[450] *Id.*
[451] 2010 SOO R-1, Schedule 310A, Line 1, Column (b)
[452] *See* DuPont Rebuttal e-workpaper "Acq Cost and Rev Est xlsx," tab "IHB "
[453] *Id.* (0.2958/0.49x.2889x$39 123M)
[154] 2010 UP R-1, Schedule 310A, Line 7, Column (b)
[455] *See* DuPont Rebuttal e-workpaper "Acq Cost and Rev Est xlsx," tab "TRRA "
[456] *Id* (0 1429/0.429x 163x$34.428M).

In summary, NS posited on Reply that the DRR would be required to construct a portion of the Shared Asset Areas and Short Lines in which NS holds an ownership stake, and over which the DRR operates, totaling 50 route miles at a cost of $492.3 million. For reasons outlined above, the DRR should not be required to acquire an ownership interest in these independently operated railroads to operate over them via trackage rights. However, should the Board believe the DRR must acquire an ownership stake in the companies to operate over them using trackage rights, a more realistic estimate of the cost to acquire ownership in (not partially construct) the lines would be $66.4 million.[457] If the Board found it necessary to do so, it could treat this capital outlay as a non-depreciable asset in the DCF model.[158]

d. NS Includes Ownership Costs But Ignores Offsetting Revenues

NS's argument rests heavily on the premise that the fees NS Rail pays to use the rail lines in question are inextricable from NS Corporation's status as a part owner of the facilities (or, in the case of the Conrail Shared Assets Areas, a part owner of the corporation that owns the facilities). But the facilities generate revenues through the collection of the very fees in question, and those revenues are distributed to the owners. Therefore, as a part owner of the facilities, NS Corporation (Conrail, IHB) or NS Rail (BRC, TRRA) recovers much of the fees it pays to use the facilities. However, while NS complains that DRR could not "exercise all of the rights and privileges that accrue to NS as a co-owner of the Partially Owned Lines without paying anything for NS's ownership interests or shouldering the NS's responsibilities as an owner."[159] NS fails to include any mechanism in its analytical framework to account for the revenues DRR would earn as a part owner of the subject facilities. Shouldering the responsibilities of an owner by way of

[457] *See* DuPont Rebuttal e-workpaper "Acq Cost and Rev Est xlsx," tab "Investment-Anl Rev."

[458] Because the investment in affiliated companies is a non-depreciable asset, a line would need to be added to the Investment SAC level to allow the costs to be added to the capital carrying charges in the same way IDC and replacement costs are added to the capital carrying charges

[459] *See* NS Reply, p. III-F-299

assuming the owner's assets entitles the owner to reap the rewards the owner earns on those assets Despite the fact that NS imposes construction costs on the DRR as a way to approximate its ownership responsibilities. NS provides no avenue for the DRR to earn revenues generated by the asset.

NS states that, "the DRR cannot step into the operating shoe and ignore the ownership shoe . the DRR has to wear either both of NS's shoes or neither of them."[460] In essence, the NS Reply model makes the DRR pay for both shoes. but only allows DRR to wear one. If the DRR must, as NS says it does. assume ownership responsibilities, then the DRR must also be rewarded with the revenues earned by the owners.

Therefore, the NS framework results in an overcharge to DRR, which is forced to assume all of the costs[461] but receive none of the benefits (i.e., revenue streams) associated with ownership

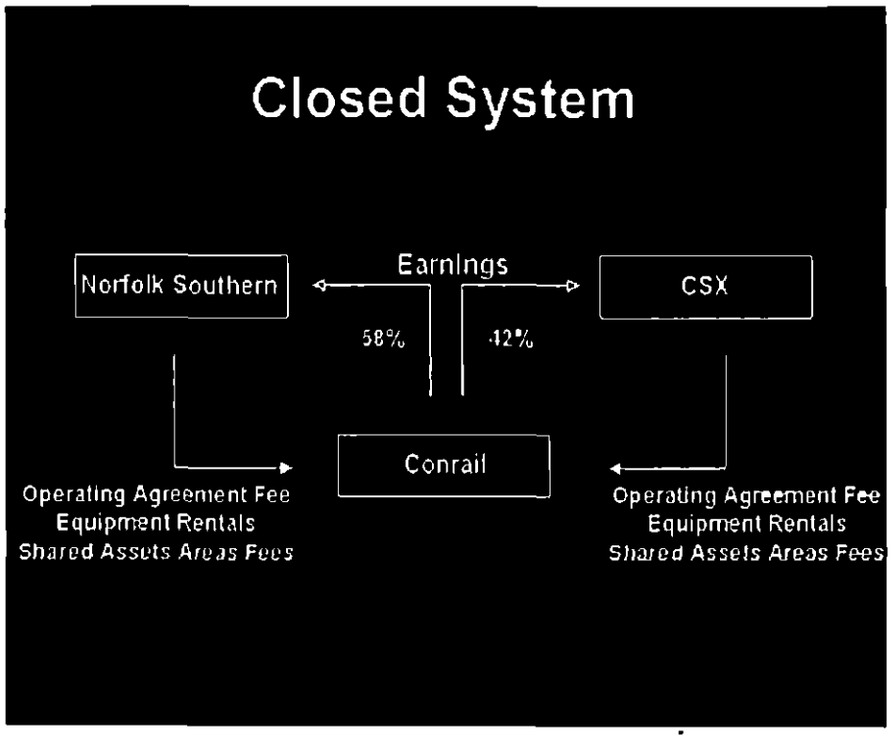
As part of its 2003 8-K report. NS made the following statements with respect to Conrail·

***

> It is important to note that the structure is, in essence. a closed system Payments to Conrail, less expenses, come back to NS and CSX through equity accounting. Three types of cost are paid to Conrail: 1) Payments for operating over Conrail's track. 2) Equipment rentals, and 3) Shared Asset service fees.

[460] *See* NS Reply, p III-F-300.

[461] Even assuming the NS cost estimates were reasonable and accurate, which, as discussed above, they are not



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The Equity method of accounting must be used for investments where the owner can significantly influence, but not control the investee

***

In our income statement the "one-line" consolidation is in "Conrail Rents and Services," and is comprised of several components. This expense line captures the essence of the relationship with Conrail. We pay rent and get service from them, and since we derive profit from our ownership, we net that profit against the costs.

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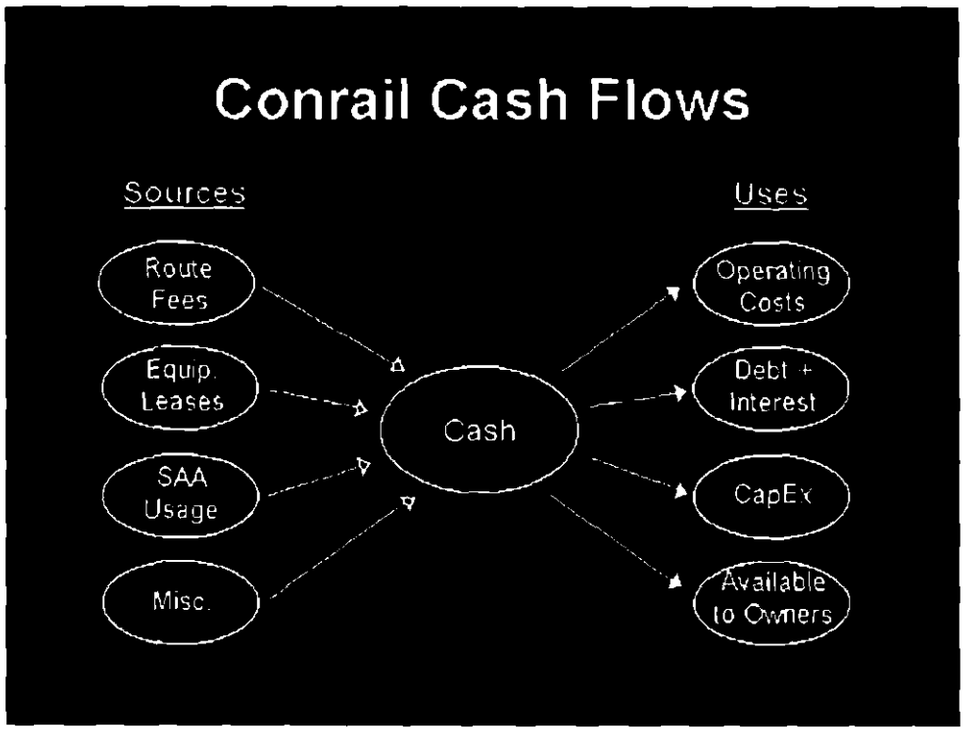
Norfolk Southern and CSX pay for Conrail Rents and Services on a monthly basis. This is Conrail's largest source of operating cash. In addition, Conrail also receives cash from interest income and some rental income.



> Conrail uses the cash for its operating expenses, interest on debt and debt repayments, and capital expenditures. Because the routes and equipment fees exceed Conrail's cash needs, this additional cash is available to NS and CSX.. Our borrowing appears as a long-term liability called "Due to Conrail" and was $513 million as of the end of the year.[462]

Along with CSXT, NS Rail is clearly paying Conrail market rates for use of Conrail's assets, as Conrail is able to generate revenues far in excess of its operating costs, with the net amount being returned to NS Corporation and CSX through equity accounting practices.

In 2004, NS Corporation and CSX restructured their joint ownership of Conrail.

> On August 27, 2004, NS, CSX and Conrail completed a reorganization of Conrail (Conrail Corporate Reorganization), which established direct ownership and control by NSR and CSXT of two former CRC subsidiaries, Pennsylvania Lines LLC (PRR) and New York Central Lines LLC (NYC), respectively. Prior to the Conrail Corporate Reorganization, NSR operated the

[462] Slides and comments of **John P. Rathbone**, Senior Vice President and Controller, Norfolk Southern Corporation, Special Securities Analyst Meeting, Brosnan Forest, S C., February 28, 2003 (part of Norfolk Southern Corporation's Form 8-K Report and Presentation to the SEC), available online at http://yahoo.brand.edgar-online.com/EFX_dll/EDGARpro.dll?FetchFilingHTML1?ID=2182085&SessionID=n1mvHqRGPh-FN77

> routes and assets of PRR and CSXT operated the routes and assets of NYC, each in accordance with operating and lease agreements. Pursuant to the Conrail Corporate Reorganization, the operating and lease agreements were terminated and PRR and NYC were merged into NSR and CSXT, respectively. The reorganization did not involve the Shared Assets Areas and did not affect the competitive rail service provided in the Shared Assets Areas. Conrail continues to own, manage and operate the Shared Assets Areas as previously approved by the Surface Transportation Board (STB).
>
> ***
>
> NS is continuing to apply the equity method of accounting to its remaining investment in Conrail in accordance with APB Opinion No. 18, "The Equity Method of Accounting for Investments in Common Stock."
>
> ***
>
> After the reorganization, NS' equity in the earnings of Conrail, net of amortization, is included in "Other income – net".[463]

NS would require the DRR to step into the shoes of NS Rail in terms of paying fees to access and operate over the Shared Asset Areas, but does not allow the DRR to step into the shoes of NS Corporation in terms of pulling cash from Conrail through equity accounting based on its owner status. If the DRR must acquire NS Corporation's ownership interest, then it also is entitled to the revenue benefits of that ownership.

As shown in NS's 2012 10-K report, it recorded equity earnings (NS's 58 percent share of Conrail's net annual income) of $26, $31, and $34 million under line item "Other income - net" in 2010, 2011, and 2012, respectively. The Conrail Shared Asset Areas on which this profit is earned consist of 1,202 route miles, of which DRR operates over 69.7 miles. If DRR is forced to acquire NS' 58% ownership stake in the 69.7 miles of the Shared Asset Areas it uses (5.8%) for $50 million, then it is also entitled to 5.8% of NS' annual income earned form Conrail. This amounts to $1.5-$2.0 million per year based on 2010-2012.[464]

In addition, BRC reported income of $9.2 million on $68.3 million in revenues in 1998. Conservatively, we estimate average annual income at half that level, $4.6 million in 1998

[463] NS 2006 10-K Report, Note 4, p. K54-56

[464] *See* DuPont Rebuttal e-workpaper "Acq Cost and Rev Est xlsx," tab "SAA Revenue."

dollars, and $6.0 million in 2010 dollars. NS owns 25 percent of BRC, or $1.5 million in 2010 income due to its ownership position. To balance the income earned with NS's framework in which the acquisition costs are based on the portion of the system used by DRR, the DRR portion of 2010 income would be $862,895.[465]

Similarly, TRRA reported income of $7 million in 2011. NS owns 14.29 percent of TRRA, so it earned $1.0 million in 2011 income due to its ownership position. To balance the income earned with NS's framework in which the acquisition costs are based on the portion of the system used by DRR, the DRR portion of 2011 income would be $163,049.[466]

Because IHB is similar in size to BRC and TRRA, and because NS's ownership stake in the three short lines, and further because the DRR's use of the three systems is proportionally similar, the average of the income earned on the BRC and TRRA provides a reasonable estimate for the DRR income associated with an ownership stake in the IHB. For the reasons discussed above, DuPont believes it would not be appropriate to require DRR to acquire an ownership interest in the portions of the independently operated Shared Asset Areas and short line railroads to operate over them via trackage rights. However, should the Board believe the DRR must acquire an ownership stake in the companies to operate over them using trackage rights, it must also recognize the incomes DRR would earn due to its ownership position. These incomes would equal $3 million in the base year.[467] If the Board found it necessary to do so, it could treat this income as an offset (reduction) to annual operating costs in the DCF model.[468]

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[465] *See* DuPont Rebuttal e-workpaper "Acq Cost and Rev Est.xlsx," tab "BRC."

[466] *See* DuPont Rebuttal e-workpaper "Acq Cost and Rev Est.xlsx," tab "TRRA."

[467] *See* DuPont Rebuttal e-workpaper "Acq Cost and Rev Est.xlsx," tab "Investment-Anl Rev."

[468] The revenues coming in from the affiliated companies would be included in the operating expense level as a credit. Because these revenues will change over time as volume changes, they would be indexed for volume changes the same way other operating expenses are indexed. This also implicitly assumes the revenues received from the affiliated companies would changes at the same rate as operating costs (the RCAF).

e. Conclusions

In Opening, DuPont calculated the trackage rights fees the DRR would pay to operate its trains over the Conrail Shared Asset Areas, IHB, BRC, and TRRA based on the trackage rights NS pays to those entities under its current operating agreements. In Reply, NS disputed DuPont's calculation of the trackage rights fees that the DRR would be required to pay under those agreements and furthermore sought to impose a new requirement for the DRR to acquire an ownership interest in those lines in order to obtain the right to operate over those lines as NS does today. As a proxy for the cost to the DRR of acquiring ownership interest in the four railroads, NS calculated the replacement construction costs for the entities' physical plant and multiplied it by the NS' alleged ownership interest in the entities.

For the reasons discussed above, NS's argument in support of a requirement for DRR to acquire ownership interest is deeply flawed. It relies on misleading assertions regarding the ownership and operating agreements among the involved parties, it considers only the costs and ignores the revenues that flow among the railroads and their owners; it uses an absurd metric as a proxy for the cost of acquiring ownership in a going concern; and it directly contradicts NS's argument and evidence related to its treatment of TTX-owned intermodal equipment. For these reasons, DuPont rejects all of NS's acquisition costs and continues to rely on the arrangements and fee structures[169] outlined in its Opening evidence.

Should the Board decide that DRR must acquire an ownership interest in the portions of the independently operated Shared Asset Areas and short line railroads to operate over them via trackage rights, it must also recognize the DRR's right to earn a return on its investment. In this case, the acquisition costs (not construction costs) would be treated as a non-depreciable asset.

[169] The issue of the correct level of the trackage rights fees is discussed in DuPont Rebuttal Part III-D.

and the revenues earned from annual operations would be treated as an offset (reduction) to annual operating costs in the DCF model

PART III-G

PUBLIC VERSION

Table of Contents

III. STAND-ALONE COST III-G-1

G. DISCOUNTED CASH FLOW ANALYSIS..... .... .III-G-1

1 Cost of Capital III-G-1

a. Updated Cost of Capital III-G-2

b Weighting of 2006 Cost of Equity... .... III-G-3

c. Equity Flotation Costs III-G-4

2. Inflation Indices..... .. ..III-G-7

3. Tax Liability..... ....III-G-10

4. Capital Cost Recovery... ....III-G-10

PUBLIC VERSION

III. STAND-ALONE COST

G. DISCOUNTED CASH FLOW ANALYSIS

In Part III-G of its Reply, NS raises various issues with respect to DuPont's SAC DCF analysis In particular, NS challenges DuPont's use of the 2006 cost of equity in its cost of capital calculations and its use of historic urban and land values to forecast inflation in future land values, stating that "DuPont's discounted cash flow. . model contains a number of invalid inputs and assumptions ranging from a flawed calculation of the future DRR cost of equity to overly aggressive assumptions regarding future inflation."[1] At the same time. NS itself seeks major alterations to the Board's established approach on such matters as equity flotation costs, inflation indices for land, treatment of tax liability, capital cost recovery, and positive train control.

DuPont responds to NS's contentions below under the following topical headings:

1. Cost of Capital
2 Inflation Indices
3. Tax Liability
4. Capital Cost Recovery

1. Cost of Capital

The DRR's cost of capital is made up of the cost of common equity, debt and preferred equity (if any). NS challenges DuPont's calculations of the cost of common equity for the DRR.

The differences between DuPont's Opening and NS's Reply DRR cost of equity calculations are shown in Table III-G-1 below.

[1] *See* NS Reply, p III-G-1

Table III-G-1
Comparison of DuPont Opening and
NS Reply DRR Cost of Equity

Year	DuPont Opening[1/]	NS Reply[2/]	Difference Col (3) – Col (2)
(1)	(2)	(3)	(4)
2006	11 13%	11.13%	0 0%
2007	12 68%	12 68%	0.0%
2008	13 17%	13.17%	0 0%
2009	12 37%	12 37%	0 0%
2010	12 99%	12 99%	0 0%
2011	12 47%	13 57%	1 10%
2012	12 47%	12 93%	0 46%
2013	12 47%	12 93%	0 46%
2014	12 47%	12.93%	0.46%
2015	12.47%	12.93%	0.46%
2016	12.47%	12 93%	0 46%
2017	12 47%	12 93%	0.46%
2018	12.47%	12.93%	0 46%
2019	12 47%	12.93%	0.46%

1/ DuPont Opening e-workpaper "Exhibit III-H-1 Errata xlsm."
2/ NS Reply e-workpaper "Exhibit III-H-1 NS Reply xlsm "

NS accepts DuPont's use of the railroad industry cost of capital as the starting point for the DRR but challenges DuPont's approach to future years, stating that "NS makes one update and two corrections to DuPont's DRR cost of capital calculations."[2] NS's update is to include the most recently available cost of capital data from the STB. NS's "corrections" are to the weighting of 2006 cost of equity and the inclusion of equity flotation costs.

a. Updated Cost of Capital

NS updated the DRR cost of capital to include the Board calculated 2011 cost of equity and cost of capital in its DCF model This is appropriate as the STB released the 2011 cost of capital determination after DuPont filed its Opening Evidence. DuPont accepts this update.

[2] *Id*

b. Weighting of 2006 Cost of Equity

NS alleges that DuPont improperly over-weighted the 2006 cost of equity in its cost of capital determination by giving full weight to the 2006 equity costs, even though the DRR construction period only extended one-month into that year Rather, NS claims DuPont should have weighted the cost of equity calculations by the number of periods in each year.

STB precedent calls for using the simple average of all the cost of equity estimates for each year dating back to the year of the SARR's initial construction, even if the construction period includes only partial years.[3] The reason the STB uses a simple average cost of equity is that, unlike debt, the cost of equity is not fixed. Debt capital is usually issued with a fixed rate of interest which will not change over the life of the debt instrument. Therefore, it is logical and consistent to calculate a weighted cost of debt since the interest rates are fixed over time. Equity is not like debt. Instead, the rate of return required on common equity is constantly changing, meaning that the cost of equity in the future is unknown The STB approximates the future cost of equity by using the simple average of the historic costs of equity, and as the Board explained in *AEP Texas*, as many years as possible should be examined to derive a more accurate average

NS's attempt to weight the cost of common equity based on time is simply a ploy to increase the cost of common equity by focusing on only those years that had relatively high costs of equity while ignoring those years that had low costs of equity. The Board desires to include as many years as possible, even partial years, precisely to minimize the type of skewed result advocated by NS NS has provided no evidence that the railroad cost of equity will stay at the currently high levels

[3] *See AEP Texas*, pp. 107-108, ("In any event, as many years as possible should be examined to derive a more accurate average (cost of equity) ")

c. Equity Flotation Costs

NS asserts that DuPont improperly omitted equity flotation costs.[4] NS acknowledges that, until 2007, the Board consistently rejected railroad attempts to include equity flotation in the cost of capital calculation, but NS contends that the Board "changed its approach" in the *AEP Texas* case.[5] However, NS's characterization of *AEP Texas* is misleading at best.

As an initial matter, simple chronology reveals that the Board did not "change[ ] its approach" in *AEP Texas*. Several years *after AEP Texas*, the Board again refused to include an equity flotation fee in the DCF calculation despite the best arguments of the defendant railroads in *AEPCO*.[6] In fact, the Board specifically stated that its "longstanding precedent" required rejection of the equity flotation fee proposed by BNSF and UP.[7] In that case, BNSF and UP made the exact same allegation NS is now making – that the Board had "changed its approach" in 2007 with *AEP Texas*.[8] The Board rejected the argument of BNSF and UP then, and the Board should similarly reject the same argument being made now by NS.

Furthermore, *AEP Texas* can be easily distinguished from the current case. In *AEP Texas*, the shipper agreed to include an equity flotation fee as part of its plan to have the SARR refinance its construction costs soon after the construction was completed.[9] The Board rejected the refinancing proposed by AEP Texas but retained the equity flotation costs since both parties agreed to its inclusion in the SAC analysis. In contrast, DuPont vehemently does not agree that an equity flotation fee is appropriate.

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4 *See* NS Reply, p. III-G-3.
5 *See* NS Reply, pp. III-G-3-4.
6 *See AEPCO*, p. 138.
7 *Id.*
8 *See* Joint Reply Evidence of BNSF and UP, p. III-G-5 (filed May 7, 2010), in *AEPCO*.
9 *See* Opening Evidence of AEP Texas, p. III-G-5 (filed Mar. 1, 2004) and Rebuttal Evidence of AEP Texas, p. III-G-5 (filed July 27, 2004), in *AEP Texas*.

Another distinction between the *AEP Texas* case and the instant case is the size of the flotation fee, which equaled only 0.13 percent in *AEP Texas*.[10] In this case, NS has proposed a fee of 2.1 percent, or *16 times* the level used in *AEP Texas*.

More broadly, if the Board were to use a flotation fee as proposed by NS, then the Board would also have to replace the railroad industry cost-of-capital in the DCF model. As the Board stated in *Wisconsin P&L*:

> A serious argument that an equity flotation cost should be included for a stand-alone railroad would require a re-examination of the use of the general rail industry cost-of-capital rate in the DCF model. Because of the complexities associated with such an endeavor, the parties to SAC cases have found it preferable to use the rail industry's cost-of-capital rate as a surrogate for that of the stand-alone railroad.[11]

NS has not proposed any replacement for the rail industry cost-of-capital in the DCF model and, consequently, the Board should reject the equity flotation fee advocated by NS.

NS argues that the STB's 2006 to 2011 costs of common equity do not contain the impact of equity flotation costs because no railroad included in the cost of capital determinations has issued common equity in recent years.[12] NS's assertion is flawed. As the STB pointed out in its *AEPCO* decision, flotation fees are already included in the Board's cost-of-capital calculation.[13]

Even if equity flotation costs were not already reflected in the cost of common equity, they still would have to be excluded from the SAC analysis because their presence would create an entry barrier inconsistent with the theory of contestable markets. An equity flotation fee is a financial transaction cost, and like any costs incurred by the SARR and not the incumbent, must be excluded from the SAC analysis. This axiom extends from the very foundation of contestable

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[10] *See AEP Texas*, slip op. p. 108. *See* also Rebuttal Evidence of AEP Texas, p. III-G-5 (filed July 27, 2004), in *AEP Texas*.

[11] *See Wisconsin P&L*, p. 1040 (n. 200).

[12] *See* NS Reply, p. III-G-13.

[13] *See AEPCO*, slip op. p. 138. Unlike all the debt issued by the railroads, common equity is effectively a perpetuity, meaning whatever costs were incurred in its issuance are still reflected in its current price, no matter how small.

market theory, which states that an entrant into the market must be able to enter the market quickly and efficiently to gain any available profits, *e g*, "hit and run entry." If the financing costs for the incumbent and the entrant are not the same, the incumbent could engage in limit pricing, which makes hit and run entry into the market impossible [14] The only way contestable markets can function is if the market entrants have the same cost of capital as the incumbent.[15]

Finally, NS's attempt to buttress its position with reference to the Initial Public Offering of Facebook must necessarily fail [16] NS has not even begun to explain why a social media website is an appropriate benchmark for the railroad industry. Underwriters receive payment for new equity issues in the form of a spread; that is, they are allowed to buy shares of stock for less than the offering price at which the shares were sold to investors These share prices are based in part on the riskiness of the underlying firm.[17] Unless the SARR and the comparable firm face the same risk, the spread will not be the same. No sophisticated investor would claim that a SARR and internet based social media provider would face the same risk. Using Facebook as a proxy for equity flotation costs for a SARR also is improper because it is well documented that, given the Facebook IPO's high notoriety, the issuance was highly oversubscribed and not indicative of a typical IPO.[18]

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[14] *See* "The Theory of Contestable Markets," Stephen Martin, Department of Economics, Purdue University, July 2000

[15] *See Id*, p. 24 "the cost of financial capital must be the same for entrants and incumbents."

[16] *See* NS Reply, p. III-G-5-6.

[17] In more risky issuances of common equity, the underwriter will usually receive some extra noncash compensation, such as warrants to buy additional common stock in the future. *See* Brealey, R. A , Myers, S C., and Allen, F., "Principles of Corporate Finance, Eighth Edition," McGraw-Hill Irwin, 2006, p. 391 ("Brealey, Myers and Allen") for a fuller description of the risks inherent in underwriting common equity IPO.

[18] *See* for example the Wall Street Journal, June 17, 2012 "'Oversubscribed' Is a Weak IPO Signal," Barons, May 21, 2012 "Facebook Loses Face - And How," and Time, May 22, 2012, "Facebook IPO Fallout Four Lessons From a Rocky Public Debut "

The Board should adhere to its "longstanding precedent"[19] and reject NS's attempt to include any equity flotation costs.

DuPont's Rebuttal DRR cost of equity calculations (shown in Table III-G-2 below) incorporate NS's update and reject both "corrections" suggested by NS.

Table III-G-2
Summary of DuPont Opening and Comparison Of
NS Reply and DuPont Rebuttal DRR Cost of Equity

Year	DuPont Opening[1/]	NS Reply[2/]	DuPont Rebuttal	Difference Col (3) – Col (4)
(1)	(2)	(3)	(4)	(5)
2006	11 13%	11 13%	11 13%	0.0%
2007	12.68%	12 68%	12 68%	0.0%
2008	13 17%	13.17%	13.17%	0 0%
2009	12 37%	12.37%	12.37%	0 0%
2010	12.99%	12.99%	12 99%	0.0%
2011	12 47%	13 57%	13.57%	0.0%
2012	12 47%	12 93%	12 65%	0 28%
2013	12 47%	12 93%	12.65%	0 28%
2014	12 47%	12 93%	12.65%	0 28%
2015	12 47%	12.93%	12 65%	0.28%
2016	12 47%	12.93%	12 65%	0 28%
2017	12 47%	12.93%	12 65%	0 28%
2018	12.47%	12 93%	12.65%	0.28%
2019	12.47%	12 93%	12.65%	0.28%

1/ DuPont Opening e-workpaper "Exhibit III-H-1 Errata xlsm "
2/ NS Reply e-workpaper "Exhibit III-H-1 NS Reply xlsm "

2. Inflation Indices

NS accepts DuPont's road property asset and operating expense indices derived from the AAR railroad chargeout prices and wage rate indexes for eastern railroads and Global Insight's Rail Cost Adjustment Factor Forecast NS updates those indices using Global Insight's September 2012 forecast [20]

[19] Other than *AEPCO*, the flotation fee has been rejected in a wide range of decisions, including *Wisconsin P&L*, p. 1040, *TMPA*, p 751, *Duke/NS*, p 123, *CP&L*, p 262, *Duke/CSXT*, p. 433, *PSCo/Xcel*, p. 659, *Otter Tail* slip op. at F-2, *WPA/Basin*, p 135

[20] The most recently available.

However, NS does not accept DuPont's inflation index for land. Table III-G-3 compares DuPont's Opening and NS's Reply land indices for each year of the study period.

Table III-G-3
Comparison of DuPont Opening and
NS Reply Land Indices

Year	Land Index: DuPont Opening[1/]	Land Index: NS Reply[2/]	Difference Col (2) – Col (3)
(1)	(2)	(3)	(4)
2006	100.0	100 0	0
2007	107 1	101 5	5 6
2008	113.6	103.9	9 7
2009	107 3	106 4	0 9
2010	107.1	108 9	-1 8
2011	112 7	111.6	1.1
2012	119.5	114 2	5.3
2013	127 2	116 9	10.3
2014	135 4	119.7	15 7
2015	144.1	122.6	21.5
2016	153.5	125 5	28.0
2017	163 5	128 5	35.0
2018	174.1	131 6	42.5
2019	182 6	134 0	48 6

1/ DuPont Opening, p III-G-4
2/ NS Reply e-workpaper "Exhibit III-H-1 NS Reply xlsm."

As shown in Table III-G-3 above, DuPont's land indices grow at a rate roughly twice those used by NS. These differences are due to NS's use of different approaches for indexing rural land, indexing urban land, and discounts

NS claims DuPont's rural land inflation is too high because the USDA is forecasting drops in future crop prices and future crop production and increases in input prices, which will lead to lower farm net income.[21] According to NS, farm land values are based on farm net income and a decline in farm net income will lead to lower farm values. At best, NS feels that farm values will increase at the rate of inflation of 2.9 percent

[21] NS included its critique of DuPont's Opening rural and urban land inflation values in its Reply e-workpaper "Inflation Indices.docx "

NS also claims that DuPont's urban land inflation is too high because the NCREIF commercial property index DuPont used in its Opening Evidence includes only premium properties that are not customarily found along railroads' right of way and is weighted towards certain large metropolitan areas through which the DRR does not move. NS argues instead that two proprietary, fee only real estate databases, which show that the growth in real estate values from 2002 through 2012 was due to speculation and GDP growth that is not likely to take place in the near future, negate the NCREIF data. Therefore, NS assumes that urban land values will increase at the same 2.39 percent as rural land values.

NS's land inflation values must be summarily disregarded. Instead of relying upon Board precedent for estimating future land values as DuPont did in its Opening evidence, NS relied on the unsupported position of its real estate consultant that land values would only increase at the general rate of inflation. As explained in DuPont's Rebuttal Exhibit III-G-1, NS's claims about the link between rural land values and farm income and about the breadth and scope of the NCREIF index are incorrect and contradicted by more recent evidence. Because NS's claims are demonstrably false and DuPont has followed the procedures accepted by the STB in prior rate cases, DuPont continues to use its land value inflation approach, updated for the release of more current indexes.

Finally, NS claims that DuPont discounted land values "back to the DRR construction period using an index that does not reflect the correct timeframe for the DRR's land acquisition."[22] NS also claims that the DRR land investment should reflect 2007 costs rather than 2009 costs. NS's position that DuPont incorrectly discounted land values and used 2009 values for land investment is wrong. DuPont's land values were set at 2009 price levels, and

[22] *See* NS Reply, p. III-II-2.

consistent with STB precedent, indexed back to the years of construction based on the actual changes in land inflation [23]

On Opening, DuPont showed that 100 percent of the DRR land would be acquired in 2007 and in its DCF model DuPont used the 2007 values of DRR land in its investment calculations. For the reasons described above, DuPont continues to use the land indices presented on Opening in this Rebuttal

3. Tax Liability

NS accepts DuPont's assumed Federal tax rate of 35 percent and its calculated composite state income tax rates for the DRR However, NS claims that "DuPont's DCF incorporates three errors affecting the calculation of DRR income tax liability "[24] The three "errors" claimed by NS are: "1) that DuPont misapplied bonus depreciation, 2) DuPont used the wrong tax life for certain DRR property assets, and 3) that DuPont did not amortize the DRR debt over a 20-year financing term " DuPont addresses each of the issues raised by NS in Part III-H below.

4. Capital Cost Recovery

NS accepts DuPont's capital recovery calculations except for the issues raised above and certain other issues NS addresses in Part III-H The other issues raised by NS in Part III-H will be addressed in DuPont's Rebuttal Part III-H

[23] *See* DuPont Rebuttal Section III-F-1, and Rebuttal e-workpaper "Exhibit III-H-1 Rebuttal xlsm," worksheet "Investment "

[24] *See* NS Reply, p. III-G-7

PART III-H

PUBLIC VERSION

Table of Contents

III. STAND-ALONE COST III-H-1

II. RESULTS OF SAC ANALYSIS.. . .. . .III-H-1

1 Results of SAC DCF Analysis III-H-1

a Cost of Capital III-H-1

b. Road Property Investment Values III-H-1

c Interest During Construction.. .... III-H-2

d Interest Schedule of Assets Purchased With Debt Capital III-H-2

e Present Value Of Replacement Cost.. . ...III-H-4

f. Tax Depreciation Schedules III-H-5

i Bonus Depreciation III-H-5

ii Asset Tax Lives... .... III-H-9

g. Average Inflation In Asset Prices III-H-9

h. Discounted Cash Flow..... ... . III-H-9

1 DRR Capital Structure... .. .. III-H-10

ii. PTC Investment III-H-13

i. Computation of Tax Liability – Taxable Income III-H-15

j. Operating Expenses III-H-15

k. Summary of SAC III-H-16

2. Maximum Rate Calculations..... .. ..III-H-17

a The NS Modifications to the MMM Analysis are Unnecessary and Improper.. .... III-H-18

i. NS May Not Lawfully Modify the MMM Analysis in an Adjudicatory Proceeding Because the Board Adopted MMM in a Formal Rulemaking... ... ... III-H-18

ii. The NS Modifications to the MMM Analysis are Unlawful III-H-18

iii. NS Improperly Treats PTC Costs as Unique to TIH Traffic III-H-22

b. DuPont Correctly Indexed Variable Costs In the MMM Model III-H-24

3 Maximum Reasonable Rates III-H-26

III. STAND-ALONE COST

II. RESULTS OF SAC ANALYSIS

In this section, DuPont addresses the concerns raised by NS in Reply regarding DuPont's DCF analysis and its maximum rate calculations

1. Results of SAC DCF Analysis

On Rebuttal, DuPont has made a limited number of changes to its DCF model in response to points raised by NS and discussed in Parts III-A through III-G above. In addition, DuPont explains numerous errors made by NS in its Reply DCF model, including, but not limited to, improper adjustments to the cost of capital used in determining the replacement value of future investments, understating the amount of accelerated depreciation available to the DRR, and misapplication of future PTC related investment costs

DuPont's Rebuttal DCF analyses are shown in Rebuttal Exhibit III-H-1. The calculations shown in each table of that Exhibit are summarized below.[1]

a. Cost of Capital

As discussed in Part III-G, DuPont updated the DRR's 2011 cost of capital to reflect the Board's 2011 Railroad Cost of Capital decision. DuPont continues to use the simple average of the DRR's construction period's cost of equity estimates and rejects NS's improper inclusion of equity flotation costs, for the reasons discussed above in Part III-G DuPont's updated cost of capital figures are set forth in Table A of DuPont's Rebuttal Exhibit III-H-1.

b. Road Property Investment Values

The calculation of road property investment costs is summarized in Table C of Rebuttal Exhibit III-H-1. On Rebuttal, DuPont incorporates its updated road property investment values addressed in Rebuttal Part III-F, where DuPont addresses NS's contentions regarding road

[1] The cost of capital (Table (A) and inflation indices (Table B) are addressed in Part III-G

property investment. In its Reply, NS accepts DuPont's DRR construction schedule, and its methodology to index annual investment values except for land investment.

As discussed in Part III-F-1, and Part III-G-2, NS's land valuation approach is biased and inconsistent with Board precedent, and its associated final land values therefore are unreliable. On Rebuttal, DuPont continues to use its Opening valuation approach, including the indexing of land values to 2007 price levels.

c. Interest During Construction

Interest During Construction ("IDC") accrues on the road property assets of the DRR. NS utilizes the same methodology as DuPont did on Opening to calculate IDC in its Reply DCF DuPont continues to use this same methodology on Rebuttal.

d. Interest Schedule of Assets Purchased With Debt Capital

In Opening, DuPont explained that it structured its interest payments on debt capital in the same fashion as the real world Class I railroads, including NS. Specifically, instead of assuming that the SARR would issue debt structured similar to a typical home mortgage loan, i e , the SARR would make quarterly payments that contained a principal repayment component and an interest component, DuPont structured the interest payments in the same fashion as the Class I railroad companies, and like other large corporations, that make coupon payments on the debt consisting of fixed interest payments. DuPont explained that this approach is consistent with how the NS structures its own debt, and also consistent with the Board's assumption that the SARR's capital structure does not change over time

NS claims that DuPont's assumption is incorrect. NS states that DuPont's assumption of the issuance of 20-year notes is incorrect and that the railroad industry cost of debt is a weighted average of notes of various length, that do not necessarily equal 20 years. NS also states that the

amortization of debt for the DRR should be similar in structure to a home mortgage to better reflect the actual payment of debt.

NS's claims are wrong for numerous reasons. First, DuPont did not state it was issuing a single 20-year debt instrument to finance the DRR's initial construction. Instead, it stated, consistent with *Major Issues* and previous Board decisions, that the debt for road property investment is assumed to be financed over 20 years DuPont also stated in Opening that the Board's assumption about the SARR issuing 20-year debt obligations may not match the actual length of debt obligations issued by the railroads in the cost of capital determination group. However, this is not a concern and need not impact the assumption of fixed interest payments As DuPont explained, the railroads' level of debt has remained fairly level since the last round of mergers in the mid 1990's This is because the railroads are issuing new debt as debt instruments mature, or as they redeem older debt issuance and replace them with newer issuances. In other words, the railroads are holding their levels of debt constant, by issuing new debt when the older debt expires or the debt is called As such, the railroads interest payments would be expected to be consistent from year to year and not declining over time

Moreover, the fact that the STB's average cost of railroad industry debt is a weighted-average of short, medium and long-term interest rates is more consistent with DuPont's determination of quarterly interest payments than with NS's argument for home-mortgage style amortization. NS assumes that the interest payments under its home-mortgage style amortization approach reflect the payment of interest on short, medium and long-term debt, and that the fall in debt interest payments over time is simply the reflection of the DRR paying-off shorter-term notes and the continued payment of interest on longer-term notes. However, if this were the case, the relative interest payments would be higher in the future because of the term-structure of

interest rates, which states longer-term bonds will have higher interest rates than shorter-term bonds.[2] In other words, the interest paid in the outer years should be relatively higher because, with the shorter-term debt paid off, the remaining long-term debt has higher relative interest payments. However, the interest rate does not change over time in the Board's DCF model This steady-state distribution is indicative of the railroad holding a steady-capital structure as new debt is issued as old debt is retired. This is exactly the assumption underlying DuPont's interest calculations.

In sum, real-world companies, including the railroads, set a target capital structure, and attempt to maintain it for many reasons, including using the power of leverage to manage earnings and to maintain cash flexibility The DRR is employing the same methodology that real-world railroads do, and holding a stable capital structure. This is consistent with the Board's DCF model, which assumes the capital structure does not change over time. To reflect this steady-state nature, the SARR must reissue debt as older debt is retired, which ultimately leads to consistent interest payments as reflected in DuPont's DCF model.

e. Present Value Of Replacement Cost

Table F shows the additional investment (on a present value basis) that the DRR would have to make if each of its assets (excluding land) was replaced indefinitely at the end of its useful life.

NS states that DuPont incorrectly used the historic average railroad industry cost of capital in developing the replacement cost of assets instead of the DRR cost of capital. NS's position is incorrect. As indicated by the STB in *AEP Texas*, the correct cost of capital to use is the historic average railroad industry cost of capital and not the SARR cost of capital.[3] And,

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[2] This ignores those rare instances where markets see inverted yield-curves.

[3] *See AEP Texas*, pp. 108-109

even though NS said that it "corrected" this issue in its DCF model, a review of NS's model shows that it used the same procedure as DuPont.

f. Tax Depreciation Schedules

NS claims that DuPont's tax depreciation schedules contain three errors: 1) DuPont incorrectly applied bonus depreciation to all assets purchased in 2008 and 2009; 2) DuPont applied bonus depreciation to replacement costs; and 3) DuPont used the wrong tax depreciation lives for certain assets.

In its Opening DCF model, DuPont took advantage of additional or "bonus" depreciation provisions enacted by Congress in 2008 and 2009 as part of federal economic stimulus legislation and continued in 2010 and 2011. In addition, DuPont's Opening DCF model utilized the same Modified Accelerated Cost Recovery System ("MACRS") depreciation schedules endorsed by the Board in all SAC cases over the prior decade.

i. Bonus Depreciation

In Opening, the DRR took advantage of additional or "bonus" depreciation provisions enacted in 2008 and 2009. These provisions were part of the Economic Stimulus Act of 2008 ("Stimulus Act") and the American Reinvestment and Recovery Act ("ARRA") of 2009. These Acts provided bonus depreciation on capital investments with MACRS recovery periods of 20 years or less. Qualifying investments are allowed a 50 percent depreciation bonus in the year that they are placed into service. Tax depreciation for the remaining 50 percent of the cost, or the remaining cost basis, is calculated using the standard MACRS schedules. Because the DCF model assumes that all assets are placed into service in the first year of the 10-year DCF period, which in this case is 2009, the majority of the DRR's investment qualifies for the bonus depreciation. Table G of Rebuttal Exhibit III-H-1 displays the amount of bonus depreciation available to the DRR in 2008 and 2009.

In its Reply, NS states that DuPont inappropriately applied bonus depreciation available under the tax laws in place during the period when the DRR was constructed. According to NS, since the bonus depreciation is a temporary measure, it is unfair to allow a SARR to claim bonus depreciation on its entire railroad when NS could not do the same and that this effectively creates a "reverse barrier to entry." To adjust for this, NS reduced the DRR's bonus depreciation to a level consistent with its own claims of bonus depreciation.

NS attempts to turn contestable market theory on its head by claiming that bonus depreciation should not be allowed because it places the DRR at an advantage relative to NS [4] According to NS, the DRR benefits from bonus depreciation because of a "simplifying stand-alone cost assumption" that unconstrained resources "allows for all of the DRR construction to occur during the limited bonus depreciation tax window...." [5] Both contentions are simply wrong and would violate contestable market theory.

First, the fact that the DRR might have an advantage relative to NS is a red-herring. The SAC concept is predicated upon developing an "optimally efficient" SARR, which means that the SARR necessarily will have many advantages over the incumbent. NS's own logic would require the SARR to use the same production techniques that NS used to build the original rail lines a century ago, rather than more efficient modern techniques. Essentially, NS argues that the SARR cannot be more efficient, or use better technology than the incumbent, which is the antithesis of SAC principles

Second, the assumption of unconstrained resources is not a "simplifying assumption." It was a necessary and essential assumption to hypothesizing a contestable rail transportation market. In earlier SAC cases, the incumbent railroads argued in the alternative that either the

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[4] *See* NS Reply, p. III-H-6.
[5] *Id*

SARR construction period should be much longer or the SARR should incur premium costs for an expedited construction schedule that would create resource constraints. The Board rejected both arguments because they imposed barriers to entry.[6] Thus, the assumption of unconstrained resources was required to eliminate a barrier to entry, not to simplify the SAC analysis

Third, according to Baumol, "[t]he crucial feature of a contestable market is its vulnerability to hit-and-run entry."[7] In order to hypothesize a contestable rail market, the Board assumes that a SARR can be constructed in the minimum amount of time dictated by technological feasibility for the most complex and time-consuming project on the SARR.[8] Therefore, "hit-and-run entry" means that the SARR must be able to enter the market within the foregoing time frame and pay "current market prices" for construction.[9] That includes bonus depreciation.

The NS argument is an attempt to have its cake and eat too. The SARR must incur "current market prices" at the time construction actually occurs. That means the SARR must pay market rates for land, material and labor, whether that be a boom or a bust market, regardless what the incumbent may have paid (unless the incumbent paid nothing, in which case the SARR also pays nothing). While NS has no problem with this fact, it would deny the SARR the benefit of favorable tax depreciation schedules available during the same time period. Tax depreciation is a temporal cost factor just like most other costs that the SARR must incur. It would be arbitrary to deny the SARR the benefit of "current market prices" for just this one factor.

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[6] *See Coal Trading*, pp. 412-413. *See also, Nevada Power*, p. 52, *McCarty Farms*, p. 484 (n. 52)

[7] *See* Baumol, William, J. "Contestable Markets: An Uprising in the Theory of Industry Structure," *The American Economic Review*, Vol. 72, No. 1, March 1982, pp. 1-15, at p. 4

[8] *See WTU*, pp. 671-672

[9] *Id.*, p. 672.

NS itself has benefited substantially from not only the current bonus depreciation laws, but from prior tax benefit laws that are not available to the DRR. Thus, the "disadvantage" that NS claims, to the extent it exists at all, is overstated

While NS acknowledges that the SARR is entitled to some bonus depreciation benefit, it attempts to limit that benefit based upon the extent to which NS itself has benefited from those provisions There is no rational basis for this limitation First, a new entrant would have far more opportunity to take advantage of bonus depreciation than an incumbent Second, NS's allocation of its own bonus depreciation to the DRR based on a simple mileage prorate is arbitrary and does not reflect the assets included in the SARR Because the mix of assets on the DRR and the NS are completely different, there is no rational basis for a mileage prorate.[10]

In addition, NS misapplied its own erroneous modification for bonus depreciation. NS assumes the bonus depreciation stems from assets with 7-year MACRS lives, however bonus depreciation is allowed for assets with MACRS lives of 20 years or less By applying the bonus depreciation only to the 7-years MACRS category, NS understated depreciation and overstated the DRR capital carrying charges.[11] For this reason, as well as its inapplicable "reverse entry barrier" claim, NS's calculation of a prorated bonus depreciation must be disregarded.

Finally, NS states that DuPont incorrectly included accelerated bonus depreciation in its calculation of asset replacement costs DuPont has reviewed NS's claim, and agrees the bonus depreciation on these assets was erroneously included, and has adjusted its Rebuttal DCF model to remove these expenses.

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[10] NS's workpapers show that 82 5 percent of NS's bonus depreciation came from investments with MACRS lives of seven (7) to twenty (20) years, but only 67 percent of the DRR's investment base constitutes assets with seven (7) to twenty (20) year MACRS. *See* Rebuttal e-workpaper "Comparisons of MACR Lives xlsx."

[11] *See* NS Reply e-workpaper "Exhibit III-H-1 NS Reply xlsm," worksheet "Tax Depreciation," cell M56

ii. Asset Tax Lives

NS also challenges DuPont's assignment of 15-year tax lives to certain assets, arguing instead that they should be treated as 20-year property [12] Specifically, NS states that investments in each of the following categories carry a MACRS 20-year tax life:

- Bridges and Trestles (Account 6),
- Fences & Roadway Signs (Account 13),
- Roadway Buildings (Account 17),
- Fuel Stations (Account 19),
- Shops and Engine Houses (Account 20)
- Public Improvements (Account 39)

However, the 15-year asset lives used by DuPont for these accounts have been used by shippers and railroads, and endorsed by the Board, since the *APS* decision in 1997. DuPont continues to utilize 15-year tax lives for these investment categories.

g. Average Inflation In Asset Prices

Table II of Rebuttal Exhibit III-H-1 computes the average annual inflation rate by which the capital recovery charge in Table I is indexed NS accepts DuPont's inflation assumptions for assets other than land. DuPont accepts NS's updates to its forecast indices, but updates the indices to reflect Global Insight's December 2012 report (the most current available) and continues to rely on its own land indices, as discussed in Part III-G-2 above.

h. Discounted Cash Flow

NS raises two issues with DuPont's DCF analysis which will be discussed below under the following topical headings:

1. DRR Capital Structure
2. PTC Investment

[12] *See* NS Reply, pp. III-H-7-8.

i. DRR Capital Structure

DuPont explained in Opening that it utilized the STB's standard capital recovery methodology, including the modification the STB made in its *AEPCO* decision to calculate the present value of unused depreciation in the terminal value calculation.[13] DuPont also explained that it found a flaw in the current methodology. The STB's DCF model explicitly assumes that the SARR's capital structure will remain constant into perpetuity.[14] This means that the amounts of common equity and debt carried on the assumed SARR's financial statements will remain the same forever However, the STB's DCF model assumes that after year 20, and until the first assets are replaced in the replacement level of the DCF model, the railroad has no debt and no tax shielding interest payments Stated differently, the model assumes, from a tax payment perspective, that the railroad is 100 percent equity financed after year 20 and before its first replacement cycle This creates an irreconcilable mismatch between the SARR's cost of capital and its cash flows. The cost of capital assumes that the SARR is carrying debt, and its associated interest payments, but the cash flows reflect no benefits from the interest tax shields

To correct for this flaw, DuPont adjusted the terminal value in the capital carrying charges to reflect the cost of capital assumption that the SARR's level of debt is held constant into perpetuity, and that interest tax shields consistent with this level of debt are accounted for in the cash flow calculation Specifically, DuPont calculated an interest tax shield in perpetuity by dividing the last full quarterly coupon payment by one plus the quarterly real cost of capital.[15]

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[13] *See AEPCO*, pp 140-141

[14] The cost of capital used to calculate the terminal value in the DCF model equals the simple average cost of capital from the first year of the SARR's construction to the most recent cost of capital issued by the STB. It also reflects the average railroad industry capital structure over the same period. Between 2006 and 2010, debt as a percentage of railroad industry capital ranged from 20 7 to 29 1 percent

[15] This is the same type of calculation used to develop the terminal capital carrying charge

This calculation aligns the cost of capital assumption of a fixed level of debt forever, with the interest payable on this debt [16]

NS claims that there is no mismatch between holding the SARR's capital structure constant in perpetuity, and amortizing debt over a 20-year period to where the railroad is effectively debt free. Moreover, NS asserts that, if there is a mismatch, the proper approach to correct it is not to assume that the railroad maintains a constant capital structure, but rather to adjust the cost of capital to reflect the change in capital structure as was done in *Coal Trading*.

NS's claim is in fact wrong both as a matter of Board precedent and basic economic principle. In Reply, NS recognized that such a disconnect exists, but NS refused to accept that a correction is needed because the disconnect is allegedly a "mainstay of the Board's DCF model since *Coal Trading* and *McCarty Farms*."[17] NS did not provide any citations to these two cases, so it is not entirely clear why NS mentioned them In *Coal Trading*, the ICC allowed the debt-equity mix to change over time as debt was paid off;[18] conversely, *McCarty Farms* involved use of a constant capital structure.[19] Crucially, however, neither case included a statement by the agency approving, let alone simply recognizing the existence of, the disconnect that DuPont described in Opening. More broadly, the simple fact that an error has existed for several years is not a legitimate justification for its continued existence An error is still an error, regardless of how long it has existed.

NS also claimed that the Board "affirmed" this disconnect in the *Major Issues* proceeding,[20] but no such affirmation occurred. In *Major Issues*, the Board simply rejected

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[16] As to not double count the impact of the interest tax shields, DuPont has adjusted the asset replacement calculations to remove the impact of the interest tax shields on replacement assets

[17] *See* NS Reply, p. III-II-9.

[18] *See Coal Trading*, pp 379-380

[19] *See McCarty Farms*, p. 522, n 123.

[20] *See* NS Reply, p III-II-9.

requests to amortize debt over the lives of the SARR assets, instead, the Board retained the use of a 20-year period to calculate interest on debt capital [21] The Board did not even address tax shielding interest payments or the SARR's debt-equity mix beyond Year 20. Consequently, the Board did not "affirm" the disconnect described by DuPont

Finally, NS has proposed a separate fix in the event the Board determines that the disconnect should be corrected. NS proposes that the Board "revert back" to the method used in *Coal Trading*, where the SARR capital structure is recalculated as the debt is amortized [22] The method used in *Coal Trading* was justifiably discarded soon after the decision was issued, and the Board should not revive it In *Nevada Power*, the ICC determined that "it is more realistic to assume that the SARR would issue new debt as old debt is amortized" because "[t]his is the procedure followed by many large corporations, including most U S. railroads, as a way of reducing the overall cost of capital."[23]

Moreover, NS's approach of amortizing debt and equity as the ICC did in *Coal Trading* is completely inconsistent with finance practice and theory, and must be disregarded. As any competent financial analyst will tell you, a firm's cost of equity will change with changes in leverage This is famously known as Modigliani and Miller's ("MM") Proposition 2, which states that the expected return on the common stock of a levered firm increases in proportion to the debt-equity ratio.[24] This means a higher debt-to-equity ratio leads to a higher required return on equity, because of the higher risk involved for equity-holders in a company with debt The converse of this is also true. In other words, as the amount of debt held by a company falls, the

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[21] *See Major Issues*, slip op. 65.
[22] *See* NS Reply, p. III-H-10.
[23] *See Nevada Power*, p 319.
[24] *See* Brealey, Myers and Allen at page 453 for a fuller explanation of MM's Proposition 2

required return on the equity falls because of the lower risk involved for equity-holders in a company without any debt

In its alternative DCF model where it amortizes debt over time, NS totally ignores this fundamental economic principle. NS incorrectly assumes that, as the DRR's capital structure changes with the declining amounts of debt held by the DRR, the cost of debt and equity will not change Instead, the DRR's cost of capital increases as common equity takes on a larger percentage of the capital structure as debt is retired. NS's position is completely contradictory to basic financial economics, which states the cost of equity will decline with the drop in the proportion of debt

The only proper way to show a constant capital structure in perpetuity, as the STB has assumed in its DCF model, is to assume a constant level of debt over the SARR's infinite life DuPont's adjustment to the DCF model aligns the disconnect inherent in the current version of the STB's model

ii. PTC Investment

NS claims that it is incorrect to assume that PTC infrastructure will be installed during the SARR's construction period since PTC standards and equipment have yet to be finalized in the real world. Instead, the appropriate way to account for PTC cost in the DCF model is to include the investment in the years that the investment is expected to occur. According to NS, this means PTC investment will be installed beginning in 2009 and extend through 2015, when PTC must be implemented by current law

There are several flaws with NS's inclusion of PTC investment in the DCF model First, as discussed in section III-F-6 above, NS incorrectly assumes that real-world railroads will have PTC installed by 2015 The FRA, in a 2012 report to Congress, has indicated that PTC will not likely be operational by 2015, and has not indicated a date by which it would be fully

implemented The same sentiments were echoed by NS Vice President Gerhard Thelen in oral testimony before the National Transportation Safety Board ("NTSB"). According to Mr Thelen, "[b]ased on where we [NS] stand today, if everything goes well, we are looking at a 2018-2020 timeframe [when PTC ban be fully installed]."[25] By requiring the DRR to incur PTC costs that itself has not yet incurred or is expected to fully incur prior to 2018, NS has created an impermissible barrier to entry for the DRR.

This situation is distinguishable from *AEPCO* in which the Board stated.

> [W]e must follow existing law, and existing law requires that these systems be in place by December 2015. We have no reason in this 10-year DCF analysis to exclude costs that are required by Federal law because of the possibility that the law might change in the future or tax breaks that do not currently exist may be enacted.[26]

DuPont has asserted very different arguments from those made by *AEPCO* In this case, DuPont has shown that both the FRA and NS itself have stated publicly that the Congressional deadline cannot and will not be met. This evidence was unavailable during the *AEPCO* case Therefore, the DRR cannot be required to install PTC before NS is able to do so itself.

Second, also as discussed in section III-F-6, PTC technology was in fact available and being used by railroads in 2009. NS's evidence does not truly concern the availability of PTC technology in 2009, but rather the technology and costs associated with the integration of PTC across all railroads by 2015.

Third, NS's determination of the cash flows required to recover PTC related costs is also flawed. In calculating the tax depreciation for the PTC investment for the years 2010 through 2013, NS failed to account for the bonus depreciation available on PTC assets in those years.[27]

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[25] *See* "Safety Agency Scrutinizes Train Control Progress," *Argus Rail Business*, March 4, 2013, p. 5

[26] *See AEPCO*, p. 34

[27] *See* NS Reply e-workpaper "Exhibit III-H-1 NS Reply.xlsm," worksheet "PTC" which shows no accelerated depreciation for those years

Not including the accelerated depreciation overstates the capital carrying costs required for PTC. In addition, the PTC investment values NS included in the PTC calculation level are higher than the PTC investment values included in its construction estimates.[28] This once again leads to higher capital carrying charges for PTC investment.

Based on these facts, DuPont has continued to use its Opening approach to account for PTC investment costs

i. Computation of Tax Liability – Taxable Income

NS accepts DuPont's assumed Federal tax rate of 35 percent and its calculated composite state income tax rates for the DRR

j. Operating Expenses

Table K displays the operating expenses incurred in each year of the DCF period In Opening, DuPont explained that certain DRR operating expenses were adjusted annually based on the annual change in DRR ton-miles because the affected expenses rely upon the level of traffic volume.[29] This adjustment affected train and engine personnel expenses, locomotive related expenses, loss and damage expenses, trackage rights fees, and intermodal lift costs.

On Reply, NS criticized DuPont for using ton-miles "instead of the Board's standard use of tons" to adjust the operating expenses of the DRR.[30] Although asserting that use of tons is standard for adjusting operating expenses, NS then inexplicably states that car-miles is the appropriate metric to use for such an adjustment.[31] NS provides no citation to any Board

[28] *See* NS Reply e-workpaper "Exhibit III-II-1 NS Reply.xlsm," worksheet "PTC," which shows investment at $694 million and the "Construction" worksheet that shows investment at $681 million.
[29] *See* DuPont Opening, p III-II-11.
[30] *See* NS Reply, p. III-II-11
[31] *See* NS Reply, p. III-II-11 "NS ..indexes DRR operating expenses based on annual changes in car miles"

decision to support its claim about the "standard" way to adjust operating expenses, but precedent does suggest that operating expenses have been adjusted via tons in the past.[32]

The Board should reject NS's chaotic and internally inconsistent position. NS has not explained why it did not follow the "standard" that it claims exists Even more to the point, if tons are the standard, then DuPont's use of ton-miles is much closer to the standard than the car-miles used by NS.

The only support NS provides for its (ultimate) position is that car-miles "provide a more accurate metric than ton-miles for adjusting operating expenses for changes in volume for a SARR with such a diverse traffic base that has very different forecasted volume growth."[33] In particular, NS believes that use of ton-miles overweights changes to coal traffic and under weights changes to intermodal traffic However, car-miles is an insufficient metric because it only includes one factor, mileage, while ignoring the relationship between shipment weight and operating expenses.[34] Ton-miles are the appropriate factor for adjustment of operating expenses DuPont continues to adjust operating expenses using the change in ton-miles year to year

k. Summary of SAC

DuPont's calculation in Rebuttal of total SAC for the DRR is presented in Table L of Rebuttal Exhibit III-II-1 and summarized with NS's Reply in Table III-II-1 below.

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[32] *See, e.g., PSCo/Xcel*, p. 618 - "As tons increase (or decrease) in future years, the DCF model automatically increases (or decreases) specific operating expenses . in proportion to the percentage change in tonnage "

[33] *See* NS Reply at III-II-11-12.

[34] *Cf PSCo/Xcel*, p. 618 - calibrating SARR operating expenses by "tonnage and distance" to account for Jeffrey Energy Center traffic

Table III-H-1
Summary of NS Reply and DuPont Rebuttal SAC Results for the DRR
($ in millions)

	NS Reply[1/]			DuPont Rebuttal[2/]		
Year	SAC	SARR Revenue	Overpayments (Shortfall)	SAC	SARR Revenue	Overpayments (Shortfall)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
6/09-12/09	$4.733 3	$2.851 7	($1.881.6)	$2.742 3	$3.109 7	$367.3
2010	8.712.4	5.611 2	(2.101 1)	5.358 0	6.152 8	794.8
2011	9.310.5	6.074.8	(3.253 7)	5.780.8	6.718 2	937.5
2012	9.614.8	6.561.6	(3.053.2)	5.965 1	7.238 1	1.273.0
2013	9.981 4	7.024.4	(2.957.0)	6.166.1	7.721.8	1.555.7
2014	10.315.9	7.444 6	(2.871.2)	6.439 2	8.349.7	1.910 6
2015	10.760 8	7.825 8	(2.935.0)	6.693 9	8.916 5	2.222.6
2016	11.176 5	8.353 0	(2.823 5)	7.053.7	9.713.2	2.659 5
2017	11.619 1	8.930 9	(2.688 2)	7.462.4	10.642.3	3.179 9
2018	12.077.1	9.547 4	(2.529.8)	7.902.3	11.660.5	3.758 2
1/19-5/19	5.202 0	4.254 4	(947 7)	3.462.5	5.320 1	1.857.6

[1/] NS Reply 12/12/12 Errata, p. III-H-12
[2/] DuPont Rebuttal e-workpaper "Exhibit III-H-1 Rebuttal.xlsm"

As shown in Table III-H-1 above, contrary to NS's calculation of shortfalls in every year, the DRR revenues exceed the stand alone costs in each year of the study period. Where stand-alone revenues are shown to exceed costs, rates for the members of the traffic group must be adjusted to bring revenues and SAC into equilibrium.

2. Maximum Rate Calculations

In *Major Issues*, the Board adopted MMM as its rate prescription approach for use in proceedings under the *Coal Rate Guidelines*.[35] Consistent with that decision, DuPont has used the MMM as required under the Board's *Major Issues* decision to bring SAC and stand-alone revenues into equilibrium. NS claims that DuPont's MMM calculations include three "errors." Each of these issues is addressed below.

[35] *See Major Issues*, pp. 14-23

a. The NS Modifications to the MMM Analysis are Unnecessary and Improper

NS proposes to modify the MMM analysis in order to "properly allocate the unique variable costs of TIH transportation solely to the DRR's TIH movements."[36] Such modifications are not just unnecessary and inappropriate, they reflect the height of hypocrisy in NS's Reply Evidence.

i. NS May Not Lawfully Modify the MMM Analysis in an Adjudicatory Proceeding Because the Board Adopted MMM in a Formal Rulemaking

The NS argument for modifying the MMM analysis to account for TIH risks is tremendously hypocritical. The Board adopted the MMM analysis through notice and comment rulemaking in *Major Issues*. This is the same rulemaking in which the Board adopted the ATC methodology for allocating cross-over traffic revenue After spending 40 pages of its Reply Evidence arguing that the Board improperly adopted Modified ATC in an adjudicatory proceeding rather than a formal rulemaking,[37] NS brazenly insists that the Board should modify the MMM analysis in this adjudicatory proceeding. If NS is correct that the Board could not modify ATC except in a formal rulemaking, then the same logic would prohibit it from modifying the MMM analysis

ii. The NS Modifications to the MMM Analysis are Unlawful

The NS modifications to the MMM analysis are unsupported and contrary to precedent. The one case that NS cites for support is inapposite, while decisions that NS ignores prohibit its proposed modifications

[36] *See* NS Reply, pp III-II-13-17 and 19-31
[37] *See* NS Reply, pp III-A-83-124

First, NS inaccurately contends that its modifications to the MMM analysis are supported by the Board's decision in *AEPCO*.[38] The issue addressed by the Board in that decision, however, is very different from the issue posed by NS.

In *AEPCO*, the Board expressed concern over the differences between how the SARR handled the same traffic as the defendant, which resulted in different costs for the SARR and the defendant.

> In the proceeding before us, the Board is concerned with how the parties have developed the variable costs for the traffic movements on the SARR submitted by AEPCO. Here, most of AEPCO's traffic group moves in trainload service, but most of the variable costs calculated for that group are costed assuming it is moved in carload and multi-car service.[39]

Therefore, the Board directed the parties to submit revised variable cost calculations that reflected the actual operating characteristics of the movements on the SARR, as opposed to the defendant. When dealing with the TIH traffic in this case, however, NS has not identified any TIH-related cost or handling differences between the SARR and the defendant. Therefore, the issue identified by the Board in *AEPCO* does not arise in the context of TIH handling costs.

Second, the NS modifications constitute movement-specific adjustments to URCS, which are prohibited by Board precedent and inconsistent with the purpose of MMM. Although NS describes its modification as a "two-step MMM approach," it is in fact making an improper implicit adjustment to the variable costs for TIH traffic.[40] The Board has previously rejected such efforts to make adjustments to the variable costs used to develop maximum R/VC ratios in the MMM model. In *WFA/Basin*, BNSF, the defendant railroad in the case, argued that there

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[38] *See* NS Reply, p. III-H-13

[39] *See AEPCO* June 24, 2011 decision, p. 2.

[40] NS's adjustment can also be viewed as a prediction of what NS would charge for TIH shipments if the STB allows the railroads to isolate PTC related costs and assign all of these costs to TIH shipments. For example, if the railroad were to assign all of the PTC related costs to TIH shipments, the variable costs for these shipments would increase and the R/VC ratios used to determine the shipments' jurisdictional threshold would decline. This would allow the railroad to increase the rates charged for TIH shipments without concern that the rate could be challenged as unreasonable.

was a flaw in the MMM model that provided short-haul movements with greater relative rate reductions than long-haul movements.[41] Because of this alleged flaw, BNSF asserted it needed to adjust the variable costs used in the MMM process to account for differing amounts of contributions for short and long-haul traffic. As NS does here, BNSF also attempted to hide its adjustment to variable costs by stating that it was only adjusting a movement's contribution and not its variable cost However, a movement's contribution is simply the difference between the movement's rate and its variable costs Because a movement's rate is fixed within any particular year in the MMM model, to adjust the contribution requires an adjustment to the variable cost portion of the equation.

In *WFA/Basin*, the STB summarily rejected BNSF's uncalled for adjustment to the variable costs used in the MMM model, reasoning that there was no flaw in the MMM model that required such an adjustment As the Board explained, MMM is designed to calculate the maximum mark-up over variable cost that a carrier can charge any movement in the traffic group.[42] In other words, the SAC analysis calculates the total revenue that the defendant may reasonably charge for all of the traffic in the traffic group. Once it has determined how big that pie is, MMM figures out how to cut the pie into individual sized pieces· one piece for each shipper in the traffic group This piece of the pie reflects the part of the total SAC costs that each shipper is responsible for covering. The Board determined that movements with higher R/VC ratios, no matter the reason why, deserve greater relief than those with smaller ratios. Whether

[41] BNSF asserted that short-haul shippers are given an inappropriately large rate reduction under MMM, while long-haul shippers are less likely to receive rate reductions, even if their rates are high relative to other long-haul shippers. BNSF stated that, because it cannot allocate loading slots at the mines to shippers offering the highest contribution, it incurs an opportunity cost when a low-contribution movement displaces a high-contribution movement for access to the PRB Because the variable costs of short-haul movements are significantly less than the variable costs of long-haul movements, BNSF argued that a higher R/VC ratio is necessary on short-haul movements to generate a dollar contribution that is comparable to that generated on long haul movements See BNSF Third Supplemental Reply in *WFA/Basin* (Public Edition) filed July 14, 2008 at page III.H-9.

[42] *See WFA/Basin* February 2009, at p. 8.

such an imbalance in R/VC ratios is attributable to differences in distance, commodities carried or some other factors, the Board did not find any fundamental flaw with the general principle in MMM that relief should be provided to those shippers making the highest contribution over variable cost

In this case, NS is attempting a similar adjustment to that in *WFA/Basin* whereby TIH shipments would be precluded from relief based on an alleged flaw in the MMM approach NS alleges that the MMM process is flawed because it assigns PTC related costs to non-TIH shipments that do not receive any benefit from PTC (DuPont addresses this incorrect assumption below). NS has not proven that the MMM process incorrectly allocates SAC to the various DRR customers. Instead, it makes an unfounded allegation based on an unproven assumption.

Moreover, even if NS were correct that the variable costs for TIH shipments should be adjusted to allocate PTC related costs to only TIH movements, equity would require that other movements' variable costs be adjusted to better allocate costs specific for those movements The Board has long recognized that its Phase III URCS model understates costs to some shippers, while overstating costs to others If the STB were to go down the slippery slope of allowing movement specific adjustments in calculating variable costs for the MMM model, it must for equity sake allow movement specific adjustments for all movements To not allow such adjustments for all movements would skew the revenue and cost relationships between different shipments on which MMM relies [43]

[43] This is also the same reason why NS's assertion that movement specific cost adjustments for SAC purposes but not market dominance purposes is incorrect Under NS's approach, a movement could exceed the 180% jurisdictional threshold level for market dominance purposes, but have an R/VC ratio well below the JT level for SAC purposes Such an approach is nonsensical, and could open the process to gaming from all parties involved

iii. NS Improperly Treats PTC Costs as Unique to TIH Traffic

Despite its lengthy discussion of the need to attribute TIH-specific costs to just TIH traffic in the MMM analysis, NS ultimately identifies only one such cost that it attempts to allocate to TIH traffic That cost is PTC But PTC is not unique to TIH traffic and, therefore, even if any modification to the MMM analysis were appropriate, PTC does not qualify for the NS's modified MMM approach

The NS narrative does not explain why PTC costs are unique to TIH traffic For that reason alone, its evidence is unsupported and should be rejected, because the party seeking a deviation from precedent has the burden of proof.[44]

The only reason that DuPont can surmise for NS's identification of PTC costs as unique to TIH traffic is based upon a common railroad industry refrain that, but for TIH traffic, PTC installation would not be required That refrain, however, is not accurate

The Rail Safety Improvement Act of 2008 requires the installation of PTC on main line over which TIH material is transported [45] The Act defines a "main line" as "a segment or route of railroad tracks over which 5,000,000 or more gross tons of railroad traffic is transported annually. .."[46] Thus, with respect to TIH traffic, there are two prerequisites before the PTC mandate applies to a rail line. There must be both (a) the presence of TIH traffic and (b) at least 5,000,000 gross tons of total traffic Neither scenario by itself would require PTC. Because the presence of a substantial volume of non-TIH traffic also is a pre-requisite to the PTC mandate, it is inaccurate to contend that PTC would not be required but for the presence of TIH traffic.

Furthermore, even if the presence of TIH traffic were the sole basis for requiring PTC, the benefits of PTC are not limited to just TIH traffic. This is especially true for the DRR

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[44] *See, e g , PSCo/Xcel*, p 644, *Otter Tail*, slip op 4, *WFA I*, slip op. 53-54, 68-69.
[45] 49 U S C § 20157(a)(1).
[46] 49 U S C. § 20157(i)(2)

because PTC replaces CTC as the complete communications and signaling system for the SARR, as opposed to the overlay system that NS will install. However, even an overlay system would provide substantial benefits to non-TIH traffic.

In 2004, ZETA-TECH, a nationally known railroad consulting firm,[47] prepared a report for the FRA that quantified the business benefits of PTC.[48] ZETA-TECH identified and quantified direct and indirect business benefits in the following six (6) distinct categories:

1. Line capacity enhancements;
2. Dispatching efficiency gains,
3. Work order issue flexibility,
4. Locomotive diagnostics;
5. Fuel savings; and
6. Shipper benefits

ZETA-TECH estimated that annual business benefits resulting from PTC implementation would be in the range of $2.2 to $3.8 billion (in 2001 dollars).[49] The first five categories of business benefits are direct benefits to the railroads (e.g., reduced track investment, better equipment utilization, reduced fuel consumption), although they also would provide indirect benefits to shippers (*e.g.*, better equipment utilization which could lead to reduced equipment lease and maintenance costs)

Line capacity enhancements result from closer train spacing and more precisely-planned train meets. Dispatching efficiency gains result from dispatcher improved (real-time) train location information. ZETA-TECH posited that this location information also would allow

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[47] Zeta-Tech lists as its clients all of the Class I railroads, including NS. *See* http://www.zetatech.com/map/clients.html.

[48] Zeta-Tech Associates "*Quantification of the Business Benefits of Positive Train Control*" prepared for the Federal Railroad Administration, March 15, 2004.

[49] As noted in the report, the business benefits calculated by ZETA-TECH were exclusive of and additive to the railroad safety benefits of PTC. *See* 2004 ZETA-TECH Report, p. 108.

dispatchers to pace trains between meets to optimize fuel consumption. ZETA-TECH also believed that the ability to issue work orders to train crews in real-time and to automatically receive diagnostic data from linked-up locomotives would provide efficiencies [50]

The sixth category of business benefits – "shipper benefits" – refers to total logistics cost reductions assuming improved service and static rates. This very specifically represents the value of improved transit times and transit time reliability to logistics networks When shippers realize better transit times and reliability, they are able to reduce inventory carrying costs, reduce or consolidate warehouse and distribution facilities and operations, and free up capital for other investments Importantly, this benefit is *not* a result of cost or rate changes; rather it is strictly a result of service level changes.

There can be little dispute that these direct railroad related PTC benefits, if realized, would impact all shipment types, including TIH and non-TIH shipments. Given that all rail movements could benefit from the gains brought about by the installation of PTC, there is no reason to pile all of the PTC-related costs onto TIH shipments.

b. DuPont Correctly Indexed Variable Costs In the MMM Model

NS argues that DuPont incorrectly used a "ginned-up" STB URCS variable cost index to adjust the MMM variable costs Instead, NS believes that the RCAF-A should be used to adjust MMM variable costs as required by *Major Issues* and used in other STB cases, including *AEPCO*.

As explained by DuPont in Opening, the URCS index is a better index to use to adjust variable costs than the RCAF-A since it more accurately reflects changes in variable costs incurred by the railroad. NS has not provided any proof that the RCAF-A better reflects changes in URCS variable costs than the URCS index the STB uses to index Phase III costs.

[50] FRA later removed this class of benefits from its restatement of the ZETA-TECH study results

The Board determined in *OG&E* that the standard URCS indexing approach would produce the most accurate results in developing future variable costs for rate prescription purposes, and directed its use.[51] Obviously it would be inappropriate to use two (2) different indices to accomplish the same, singular purpose, i.e., to forecast variable costs

The use of a forecasted NS-specific URCS index also is better suited to the goals of the MMM approach than the application of the more general RCAF-A index. The STB indicated in *WFA/Basin II* that it is the accurate presentation of the defendant railroad's variable costs which is key to the MMM's ability to maintain differential pricing required by the defendant carrier.

> In sum, for MMM to correctly calculate the degree of differential pricing needed by the defendant railroad to recover the total SAC costs over the DCF analysis period, we need to properly forecast the defendant carrier's variable costs.[52]

If the key is developing accurate estimates of the defendant carrier's future variable costs, using a carrier-specific URCS index provides a more accurate approach than application of the industry-wide RCAF-A. An URCS index takes into consideration the specific weighting of cost components unique to a specific railroad, while the RCAF-A bases its cost weighting on inputs from all Class I railroads The most accurate way to calculate a defendant carrier's future variable costs is to use an index specific to that carrier.[53]

NS also claims that DuPont incorrectly indexed costs from 2009 to 2010 base year levels in its MMM model. DuPont has reviewed NS's claim and agrees the costs were improperly indexed, and has corrected the indexing in its Rebuttal MMM model.[54]

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[51] *See OG&E*, p. 11

[52] See *WFA/Basin II*, p. 30

[53] DuPont has updated its NS URCS index forecast in its Rebuttal restatement to incorporate actual AAR indexes through 2012, updated labor, material and supplies and fuel changes from Global Insight's December 2012 forecast, and actual 2012 PPI-All Commodity values.

[54] In addition, while updating the index, DuPont found that it inadvertently indexed its 2009 costs to mid-year levels even though the DRR begins operations at mid-year 2009. In Rebuttal, it has corrected the indexing to reflect 3Q 2009 costs

3. Maximum Reasonable Rates

The SAC analysis summarized in Parts III-A through III-G and the accompanying Rebuttal Exhibits, and displayed in Rebuttal Exhibit III-H-1, demonstrates that over the 10-year DCF period the revenues generated by the DRR exceed its total capital and operating costs. Table III-H-2 below shows the measure of excess revenue over SAC in each year of the DCF period for this case.

Table III-H-2
Summary of DuPont Rebuttal DCF Results for the DRR – June 2009 to May 2019
($ in millions)

Year	Annual Stand-Alone Requirement	Stand-Alone Revenues	Overpayments (Shortfall)	PV Difference	Cumulative PV Difference
(1)	(2)	(3)	(4)	(5)	(6)
6/09-12/09	$2,742 3	$3,109.7	$367.3	$358.3	$358 3
2010	5,358 0	6,152 8	794.8	693.5	1,051.9
2011	5,780.8	6,718 2	937.5	726.9	1,778 8
2012	5,965 1	7,238.1	1,273.0	900 1	2,678 9
2013	6,166 1	7,721 8	1,555.7	988.8	3,667 7
2014	6,439.2	8,349.7	1,910.6	1,091 5	4,759 2
2015	6,693 9	8,916.5	2,222.6	1,141.3	5,900 5
2016	7,053.7	9,713.2	2,659.5	1,227 5	7,128.1
2017	7,462.4	10,642.3	3,179.9	1,319 3	8,447.3
2018	7,902.3	11,660 5	3,758.2	1,401 5	9,848.8
1/19-5/19	3,462 5	5,320 1	1,857 6	656 7	10,505 6

Source DuPont Rebuttal e-workpaper "Exhibit III-H-1 Rebuttal xlsm "

Application of MMM yields the following maximum R/VC ratios for each year of the DCF model

Table III-H-3
Rebuttal MMM Results

Year	Maximum R/VC
(1)	(2)
6/09-12/09	195 8%
2010	172.5%
2011	167 1%
2012	151 7%
2013	141 4%
2014	136.3%

2015	133 2%
2016	126.6%
2017	121 6%
2018	117.4%
1/19-5/19	112.7%

Source: Rebuttal Exhibit III-H-2

As indicated in Table III-H-3, the maximum R/VC ranges from 112 7% percent to 195 8% percent over the 10-year DCF period.

The maximum lawful rates for the DuPont traffic equal the greater of the jurisdictional threshold or the MMM maximum rates. Rebuttal Exhibits III-H-3 through III-H-14 compare NS's rates at 2Q09 through 1Q12, respectively, to the jurisdictional threshold and the MMM maximum rates The issue NS rates are greater than both the jurisdictional threshold and the MMM rates for all movements and all time periods.

PART IV

PART IV

WITNESS QUALIFICATIONS AND VERIFICATIONS

This Part contains the Statements of Qualifications and Verifications of the witnesses who are responsible for the Narrative portions of DuPont's Rebuttal Evidence (and the exhibits and workpapers referred to therein) identified with respect to each witness.

Travis Bond IV-2
Michael Faciszewski IV-3
Jeff Jirak IV-4
James Kanicky IV-5
Paul Kostrzewski IV-6
Brad Kulesza IV-7
John Leuszler IV-8
Mark McLendon IV-9
Edward L. Morris, Jr IV-10
Leslie Muir IV-11
Mary Pileggi IV-12
Suneet Ranganath IV-13
Greg Rupert IV-14
Katie Snyder IV-15
Richard H. McDonald IV-16
Harvey A. Crouch, P. E. IV-17
Thomas D. Crowley IV-18
Philip H. Burris IV-19
Charles A. Stedman IV-20
Michael E. Lillis IV-21
Daniel L. Fapp IV-22
Robert D. Mulholland IV-23
Timothy D Crowley IV-24
Sean D. Nolan IV-25
William W. Humphrey IV-26
Richard R. Harps, MAI, CRE IV-27
John G. Pinto, CRE IV-28
Elizabeth W. Vandermause, MAI IV-29
Daniel C. Vandermause IV-30
Joseph A Kruzich IV-31
Victor F. Grappone IV-32
Gary V. Hunter IV-33

TRAVIS BOND – VERIFICATION

I, Travis Bond, verify under penalty of perjury that I am the same Travis Bond whose Statement of Qualifications is in Part IV of the Opening Evidence narrative of E.I. du Pont de Nemours and Company ("DuPont") in STB Docket No. 42125, I have read the portions of DuPont's Rebuttal Evidence that I have cosponsored (Part II-B-2· Polyethylene), I know the contents thereof, and the same are true and correct based on my knowledge, information, and belief. Further, I certify that I am qualified and authorized to file this statement.

Travis Bond
Global Supply Chain Manager

Executed on MAR 18 2013

MICHAEL FACISZEWSKI VERIFICATION

I, Michael Faciszewski, verify under penalty of perjury that I am the same Michael Faciszewski whose Statement of Qualifications is in Part IV of the Opening Evidence narrative of E.I. du Pont de Nemours and Company ("DuPont") in STB Docket No. 42125, I have read the portions of DuPont's Rebuttal Evidence that I have cosponsored (Part II-B-2: Lime), I know the contents thereof, and the same are true and correct based on my knowledge, information, and belief. Further, I certify that I am qualified and authorized to file this statement

Michael Faciszewski
Contract Manufacturing Manager

Executed on Apr. 08, 2013

JEFF JIRAK – VERIFICATION

I, Jeff Jirak, verify under penalty of perjury that I am the same Jeff Jirak whose Statement of Qualifications is in Part IV of the Opening Evidence narrative of E.I du Pont de Nemours and Company ("DuPont") in STB Docket No 42125, I have read the portions of DuPont's Rebuttal Evidence that I have cosponsored (Part II-B-2: Anhydrous Methylamines, Aqueous Methylamines, Dimethyl Formamide, and Dimethyl Sulfate), I know the contents thereof, and the same are true and correct based on my knowledge, information, and belief. Further, I certify that I am qualified and authorized to file this statement.

Jeff Jirak
Global Business Manager Methylamines

Executed on 3/11/2023

JAMES KANICKY – VERIFICATION

I, James Kanicky, verify under penalty of perjury that I am the same James Kanicky whose Statement of Qualifications is in Part IV of the Opening Evidence narrative of E.I. du Pont de Nemours and Company ("DuPont") in STB Docket No. 42125, I have read the portions of DuPont's Rebuttal Evidence that I have cosponsored (Part II-B, Sand Zircon), I know the contents thereof, and the same are true and correct based on my knowledge, information, and belief. Further, I certify that I am qualified and authorized to file this statement.

James Kanicky
Ore Products Business Manager

Executed on April 5, 2013

PAUL KOSTRZEWSKI – VERIFICATION

I, Paul Kostrzewski, verify under penalty of perjury that I am the same Paul Kostrzewski whose Statement of Qualifications is in Part IV of the Opening Evidence narrative of E.I. du Pont de Nemours and Company ("DuPont") in STB Docket No. 42125, I have read the portions of DuPont's Rebuttal Evidence that I have cosponsored (Part II-B-2· Petroleum Coke), I know the contents thereof, and the same are true and correct based on my knowledge, information, and belief. Further, I certify that I am qualified and authorized to file this statement.

Paul Kostrzewski
Senior Buyer—Petroleum Coke

Executed on 4/5/13

BRAD KULESZA – VERIFICATION

I, Brad Kulesza, verify under penalty of perjury that I am the same Brad Kulesza whose Statement of Qualifications is in Part IV of the Opening Evidence narrative of E.I du Pont de Nemours and Company ("DuPont") in STB Docket No. 42125, I have read the portions of DuPont's Rebuttal Evidence that I have cosponsored (Part II-B-2: Muriatic Acid), I know the contents thereof, and the same are true and correct based on my knowledge, information, and belief. Further, I certify that I am qualified and authorized to file this statement.

Brad E Kulesza

Brad Kulesza
Operations Business Leader

Executed on 4/5/2013

JOHN LEUSZLER – VERIFICATION

I, John Leuszler, verify under penalty of perjury that I am the same John Leuszler whose Statement of Qualifications is in Part IV of the Opening Evidence narrative of E.I. du Pont de Nemours and Company ("DuPont") in STB Docket No. 42125, I have read the portions of DuPont's Rebuttal Evidence that I have cosponsored (Part II-B-2: Dimethyl Ether), I know the contents thereof, and the same are true and correct based on my knowledge, information, and belief Further, I certify that I am qualified and authorized to file this statement.

John Leuszler
U.S. Account Manager

Executed on 3/10/2013

MARK MCLENDON – VERIFICATION

I, Mark McLendon, verify under penalty of perjury that I am the same Mark McLendon whose Statement of Qualifications is in Part IV of the Opening Evidence narrative of E.I du Pont de Nemours and Company ("DuPont") in STB Docket No 42125, I have read the portions of DuPont's Rebuttal Evidence that I have cosponsored (Part II-B-2. Waste Flammable Liquid), I know the contents thereof, and the same are true and correct based on my knowledge, information, and belief. Further, I certify that I am qualified and authorized to file this statement.

Mark McLendon
Supply Chain Manager / Master Scheduler

Executed on 4/8/2013

EDWARD L. MORRIS, JR. – VERIFICATION

I, Edward L. Morris, Jr., verify under penalty of perjury that I am the same Edward L Morris, Jr. whose Statement of Qualifications is in Part IV of the Opening Evidence narrative of E.I. du Pont de Nemours and Company ("DuPont") in STB Docket No 42125, I have read the portions of DuPont's Rebuttal Evidence that I have cosponsored (Part II-B-2· Fuming Sulfuric Acid, Sulfuric Acid, Spent Sulfuric Acid, and Sulfur Trioxide), I know the contents thereof, and the same are true and correct based on my knowledge, information, and belief Further, I certify that I am qualified and authorized to file this statement.

Edward L. Morris, Jr.
Operations Business Leader—Sulfur Products

Executed on 4/2/2013

LESLIE MUIR – VERIFICATION

I, Leslie Muir, verify under penalty of perjury that I am the same Leslie Muir whose Statement of Qualifications is in Part IV of the Opening Evidence narrative of E.I. du Pont de Nemours and Company ("DuPont") in STB Docket No. 42125, I have read the portions of DuPont's Rebuttal Evidence that I have cosponsored (Part II-B-2: Titanium Dioxide), I know the contents thereof, and the same are true and correct based on my knowledge, information, and belief. Further, I certify that I am qualified and authorized to file this statement.

Leslie A. Muir

Leslie Muir
Modal Leader, Bulk and Package Truck (formerly North America Logistics Planner—DuPont Titanium Technologies)

Executed on 3-7-2013

MARY L. PILEGGI – VERIFICATION

I, Mary L Pileggi, verify under penalty of perjury that I am the same Mary L Pileggi whose Statement of Qualifications is in Part IV of the Opening Evidence narrative of E.I. du Pont de Nemours and Company ("DuPont") in STB Docket No. 42125, I have read the portions of DuPont's Rebuttal Evidence that I have cosponsored (Parts I and II-B), I know the contents thereof, and the same are true and correct based on my knowledge, information, and belief Further, I certify that I am qualified and authorized to file this statement.

Mary Pileggi

Mary L. Pileggi
Sourcing & Logistics Manager
(Formerly Logistics Manager-NA Region)

Executed on 4/2/13

SUNEET RANGANATH – VERIFICATION

I, Suneet Ranganath, verify under penalty of perjury that I am the same Suneet Ranganath whose Statement of Qualifications is in Part IV of the Opening Evidence narrative of E I. du Pont de Nemours and Company ("DuPont") in STB Docket No. 42125, I have read the portions of DuPont's Rebuttal Evidence that I have cosponsored (Part II-B-2. Potassium Caustic and Sodium Caustic), I know the contents thereof, and the same are true and correct based on my knowledge, information, and belief Further, I certify that I am qualified and authorized to file this statement.

Suneet Ranganath
Sourcing Manager—Ag & Nutrition

Executed on 7-March-2013

GREG RUPERT – VERIFICATION

I, Greg Rupert, verify under penalty of perjury that I am the same Greg Rupert whose Statement of Qualifications is in Part IV of the Opening Evidence narrative of E.I. du Pont de Nemours and Company ("DuPont") in STB Docket No 42125. I have read the portions of DuPont's Rebuttal Evidence that I have cosponsored (Part II-B-2 Sodium Methylate), I know the contents thereof, and the same are true and correct based on my knowledge, information, and belief. Further, I certify that I am qualified and authorized to file this statement.

Greg Rupert
Senior Process Engineer

Executed on 4/5/2013

KATIE SNYDER – VERIFICATION

I, Katie Snyder, verify under penalty of perjury that I am the same Katie Snyder whose Statement of Qualifications is in Part IV of the Opening Evidence narrative of E.I du Pont de Nemours and Company ("DuPont") in STB Docket No. 42125, I have read the portions of DuPont's Rebuttal Evidence that I have cosponsored (Part II-B-2. Oil Aniline), I know the contents thereof, and the same are true and correct based on my knowledge, information, and belief. Further, I certify that I am qualified and authorized to file this statement.

Katie Snyder
Katie Snyder,
Business Manager Aniline

Executed on 3-14-13

I, Richard H. McDonald, verify under penalty of perjury that I am the same Richard H. McDonald whose Statement of Qualifications appears in Part IV of the Narrative portion of DuPont's Opening Evidence in this proceeding, that I am sponsoring the portion of DuPont's Rebuttal Evidence that relates to the DRR operating plan (Part III-C); and co-sponsoring the development of the operating personnel and the G&A personnel required to manage the DRR (Part III-D); that I know the contents thereof, and that the same are true and correct. Further, I certify that I am qualified and authorized to file this statement.

Richard H. McDonald

Executed on April 6, 2013

I, Harvey A Crouch, verify under penalty of perjury that I am the same Harvey A Crouch whose Statement of Qualifications appears in Part IV of the Narrative portion of DuPont's Opening Evidence in this proceeding; that I am sponsoring the portions of DuPont's Rebuttal Evidence that relate to the DRR maintenance-of-way plan and expenses (Part III-D); and the DRR's construction costs (Part III-F); that I know the contents thereof, and that the same are true and correct Further, I certify that I am qualified and authorized to file this statement

Harvey A. Crouch

Harvey A Crouch

Executed on April 4, 2013

I, Thomas D. Crowley, verify under penalty of perjury that I am the same Thomas D. Crowley whose Statement of Qualifications appears in Part IV of the Narrative portion of DuPont's Opening Evidence in this proceeding, that I am co-sponsoring the portions of the Rebuttal Evidence that relate to quantitative market dominance (Part II-A), that relate to qualitative market dominance (Part II-B); the SARR traffic group, including volumes and revenues (Part III-A), the development of the discounted cash flow model (Part III-G); and the calculation of SAC results (Part III-H); that I know the contents thereof, and that the same are true and correct. Further, I certify that I am qualified and authorized to file this statement.

Thomas D Crowley

Executed on April 12, 2013

I, Philip H. Burris, verify under penalty of perjury that I am the same Philip H Burris whose Statement of Qualifications appears in Part IV of the Narrative portion of DuPont's Opening Evidence in this proceeding, that I am sponsoring the portions of the Rebuttal Evidence that relate to the development of operating statistics based on the output of the RTC model and the operating plan (Part III-C), including the development of train crew personnel requirements, equipment lease, maintenance and servicing costs, operating unit costs and compensation levels for all the DRR transportation and operating (including engineering) employees, non-operating (General and Administrative) personnel, and training and recruiting costs (Part III-D), non-road property investment (Part III-E) and the identification of land to be acquired through easements and the associated costs of that land (Part III-F), that I know the contents thereof, and that the same are true and correct. Further, I certify that I am qualified and authorized to file this statement.

Philip H. Burris

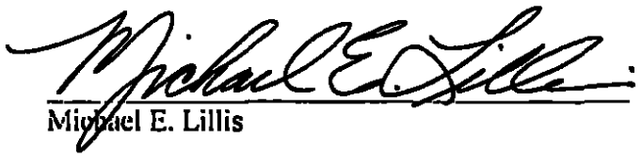
Executed on April 12, 2013

I, Charles A Stedman, verify under penalty of perjury that I am the same Charles A. Stedman whose Statement of Qualifications appears in Part IV of the Narrative portion of DuPont's Opening Evidence in this proceeding; that I am sponsoring the portions of the Rebuttal Evidence that relate to the calculation of SARR route miles (Part III-B) and co-sponsoring the roadbed preparation/earthworks component of the road property investment cost of the SARR, exclusive of culverts, roadbed specifications and yard drainage (Part III-F); that I know the contents thereof, and that the same are true and correct. Further, I certify that I am qualified and authorized to file this statement.

Charles A Stedman

Executed on April 12, 2013

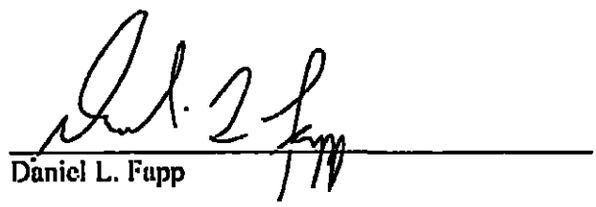
I, Michael E. Lillis, verify under penalty of perjury that I am the same Michael E Lillis whose Statement of Qualifications appears in Part IV of the Narrative portion of DuPont's Opening Evidence in this proceeding; that I am co-sponsoring the portions of the Rebuttal Evidence that relate to the SARR traffic group. including volumes and revenues (Part III-A); that I know the contents thereof, and that the same are true and correct. Further, I certify that I am qualified and authorized to file this statement.



Michael E. Lillis

Executed on April 12, 2013

I, Daniel L. Fapp, verify under penalty of perjury that I am the same Daniel L. Fapp whose Statement of Qualifications appears in Part IV of the Narrative portion of DuPont's Opening Evidence in this proceeding; that I am co-sponsoring the portions of the Rebuttal Evidence that relate to RTC modeling component (Part III-C); the development of the discounted cash flow model (Part III-G); and the calculation of SAC results (Part III-H); that I know the contents thereof, and that the same are true and correct. Further, I certify that I am qualified and authorized to file this statement.



Daniel L. Fapp

Executed on April 12, 2013

I, Robert D. Mulholland, verify under penalty of perjury that I am the same Robert D Mulholland whose Statement of Qualifications appears in Part IV of the Narrative portion of DuPont's Opening Evidence in this proceeding; that I am co-sponsoring the portions of the Rebuttal Evidence that relate to the SARR traffic group (Part III-A), and that relate to DuPont's critique of MultiRail (Part III-C), that I know the contents thereof, and that the same are true and correct. Further, I certify that I am qualified and authorized to file this statement

Robert D Mulholland

Executed on April 12, 2013

I, Timothy D. Crowley, verify under penalty of perjury that I am the same Timothy D. Crowley whose Statement of Qualifications appears in Part IV of the Narrative portion of DuPont's Opening Evidence in this proceeding, that I am co-sponsoring the portions of the Rebuttal Evidence that relate to quantitative market dominance (Part II-A), that relate to qualitative market dominance (Part II-B), and that relate to DuPont's critique of MultiRail (Part III-C); that I know the contents thereof, and that the same are true and correct. Further, I certify that I am qualified and authorized to file this statement

Timothy D Crowley

Executed on April 12, 2013

I, Sean D. Nolan, verify under penalty of perjury that I am the same Sean D Nolan whose Statement of Qualifications appears in Part IV of the Narrative portion of DuPont's Opening Evidence in this proceeding, that I am co-sponsoring the portions of the Rebuttal Evidence that relate to forecasting volumes and revenues (Part III-A); that I know the contents thereof, and that the same are true and correct. Further, I certify that I am qualified and authorized to file this statement.

Sean D Nolan

Executed on April 12, 2013

I, William W. Humphrey, verify under penalty of perjury that I am the same William W. Humphrey whose Statement of Qualifications appears in Part IV of the Narrative portion of DuPont's Opening Evidence in this proceeding; that I am co-sponsoring the portions of the Rebuttal Evidence that relate to the simulation of the SARR's operations using the Rail Traffic Controller Model (Part III-C), that I know the contents thereof, and that the same are true and correct. Further, I certify that I am qualified and authorized to file this statement

William W. Humphrey

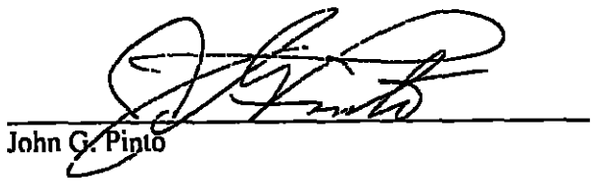
Executed on April 12, 2013

I, Richard R Harps, verify under penalty of perjury that I am the same Richard R Harps whose Statement of Qualifications appears in Part IV of the Narrative portion of DuPont's Opening Evidence in this proceeding; that I am co-sponsoring the portions of the Rebuttal Evidence that relate to land valuation (Part III-F); that I know the contents thereof, and that the same are true and correct. Further, I certify that I am qualified and authorized to file this statement

Richard R Harps

Executed on April 4, 2013

I, John G Pinto, verify under penalty of perjury that I am the same John G. Pinto whose Statement of Qualifications appears in Part IV of the Narrative portion of DuPont's Opening Evidence in this proceeding; that I am co-sponsoring the portions of the Rebuttal Evidence that relate to land valuation (Part III-F); that I know the contents thereof, and that the same are true and correct. Further, I certify that I am qualified and authorized to file this statement.



John G. Pinto

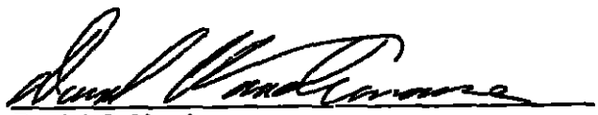
Executed on April 5, 2013

I, Elizabeth W. Vandermause, verify under penalty of perjury that I am the same Elizabeth W. Vandermause whose Statement of Qualifications appears in Part IV of the Narrative portion of DuPont's Opening Evidence in this proceeding; that I am co-sponsoring the portions of the Rebuttal Evidence that relate to land valuation (Part III-F); that I know the contents thereof, and that the same are true and correct Further, I certify that I am qualified and authorized to file this statement

Elizabeth W. Vandermause

Executed on April 4, 2013

I, Daniel C Vandermause, verify under penalty of perjury that I am the same Daniel C. Vandermause whose Statement of Qualifications appears in Part IV of the Narrative portion of DuPont's Opening Evidence in this proceeding, that I am co-sponsoring the portions of the Rebuttal Evidence that relate to land valuation (Part III-F); that I know the contents thereof, and that the same are true and correct Further, I certify that I am qualified and authorized to file this statement.



Daniel C. Vandermause

Executed on April 4th 2013

I, Joseph A Kruzich, verify under penalty of perjury that I am the same Joseph A Kruzich whose Statement of Qualifications appears in Part IV of the Narrative portion of DuPont's Opening Evidence in this proceeding, that I am sponsoring the portions of the Rebuttal Evidence that relate to the DRR's information technology capital (hardware) and personnel requirements (Part III-D); that I know the contents thereof, and that the same are true and correct Further, I certify that I am qualified and authorized to file this statement

Joseph A Kruzich

Executed on April 4, 2013

I, Victor F Grappone, verify under penalty of perjury that I am the same Victor F. Grappone whose Statement of Qualifications appears in Part IV of the Narrative portion of DuPont's Opening Evidence in this proceeding; that I am sponsoring the portions of the Rebuttal Evidence that relate to the DRR's signal and communications systems (Part III-B and Part III-F) and co-sponsoring the portion of the DRR's maintenance-of-way plan dealing with Communications and Signals Department personnel (Part III-D); that I know the contents thereof, and that the same are true and correct. Further, I certify that I am qualified and authorized to files this statement.

Victor F. Grappone

Executed on April 4, 2013

GARY V. HUNTER

Mr. Hunter is the Chairman and Chief Executive Office of Railroad Industries Incorporated ("RII"), a full-service transportation and rail consulting firm that assists a wide variety of railroad and other clients with planning and development projects involving all aspects of management and operations. His business address is 1575 Delucchi Lane, Reno, NV, 89502. Mr. Hunter is co-sponsoring the portions of DuPont's Rebuttal Evidence that relate to the DRR's General and Administrative ("G&A") personnel and expenses (Part III-D).

Mr. Hunter founded RII in 1983. Since that time he has conducted branch line analyses and equipment utilization analyses; developed operating plans, conducted market development, transportation costing, and intermodal analyses; engaged in merger studies; developed short line railroads, and performed financial analyses for various railroad clients.

Prior to founding RII, Mr Hunter was employed by the Arkansas Midland Railroad. He served as Arkansas Midland's General Manager from 1993 to 1994 As General Manager, Mr. Hunter was responsible for the short line's overall operation, including its 131 miles of track, 37 employees, and 21,000 annual carloads Numerous departments, such as the maintenance-of-way, maintenance-of-equipment, operations, marketing and agency departments (essentially all departments involved in performing G&A functions), reported to Mr. Hunter. Additionally, Mr. Hunter was responsible for all purchasing activities and real estate transactions.

Prior to joining Arkansas Midland, Mr. Hunter was a consultant for Transportation Marketing Services, Inc. from 1987 to 1989 As a consultant, Mr Hunter was responsible for achieving the firm's revenue and profit objectives, as directed by the President. His duties included market development, strategic planning, equipment analysis, physical distribution analysis, branch line acquisition analysis, competitive analysis, market research, contract rate negotiations, sales development, operations analysis, financial analysis, and business plan development. Additionally, Mr Hunter prepared testimony, traffic and revenue projections

diversion estimates, and traffic flow analyses for the Anschutz Corporation and Rio Grande Industries in their acquisition of the Southern Pacific Transportation Company ("SP") He also assisted Philip Anschutz in developing the staffing plan (both operating and G&A) for the combined SP and Denver & Rio Grande Western systems after their merger.

From 1981 to 1987, Mr. Hunter worked in the SP's Marketing Service Department, Intermodal Department, and Market Planning Department. In the Marketing Services Department, Mr Hunter was responsible for achieving revenue and profit objectives as directed by the Assistant Vice President – Marketing Services He developed agreements with other railroads; cultivated a network of short-haul TOFC trains, and evaluated the competitive environment and implications for the corporation. In the Intermodal Department, Mr Hunter was responsible for special studies on all aspects of domestic and international TOFC and container traffic as directed by the Assistant Vice President-Intermodal. He engaged in contract development and negotiations, cost development and analysis, and market and pricing development and analysis In the Market Planning Department, Mr. Hunter was responsible for the market development and pricing of the aggregate, cement and other bulk commodities. His duties included forecasting and analyzing product markets aimed at expanding market share, reducing operating costs, and increasing profit margin. Additional responsibilities included contract negotiations, cost analysis and development, and equipment allocation and acquisition decisions. Mr. Hunter also became Group Manager of marketing programs, in which capacity he was responsible for special projects, feasibility studies, merger work, branch line analysis, and worked closely with the marketing organization.

In 1976, Mr. Hunter joined the Western Pacific Railroad's Transportation Department where he worked until 1981. Jobs included Assistant Trainmaster and Trainmaster, and he also was the Operating Department's Budget Officer. His responsibilities at Western Pacific included projecting and monitoring an annual system operating budget of $70 million; conducting in-

depth analyses of operating expenses; coordinating with line managers to determine individual terminal and districts with overall system forecasts, presenting budget variances to the Vice President-Operations and providing guidelines and requirements for programming departmental reports.

Mr. Hunter received his Bachelor of Arts degree in Business, Transportation, and Real Estate from San Francisco State University in 1976. He received his Master's Degree in Business Administration ("MBA") from San Francisco State University in 1979 and was selected as MBA "Alumnus of the Year" in 1980.

I, Gary V. Hunter, verify under penalty of perjury that I have read the portions of E.I. du Pont de Nemours and Company's Rebuttal Evidence that I am sponsoring, as described in the foregoing Statement of Qualifications, that I know the contents thereof, and that the same are true and correct based on my knowledge, information, and belief. Further, I certify that I am qualified and authorized to files this statement

Gary V. Hunter

Executed on April 3, 2013

PUBLIC VERSION

BEFORE THE
SURFACE TRANSPORTATION BOARD

E.I DUPONT DE NEMOURS & COMPANY Complainant v. NORFOLK SOUTHERN RAILWAY COMPANY Defendant	)	Docket No. NOR 42125

REBUTTAL EVIDENCE AND ARGUMENT OF

E.I. DU PONT DE NEMOURS AND COMPANY

Volume IV: Exhibits

ENTERED
Office of Proceedings
APR 15 2013
Public Record

Jeffrey O. Moreno
Sandra A. Brown
Nicholas J. DiMichael
Jason D. Tutrone
Thompson Hine LLP
1919 M Street, N.W., Suite 700
Washington, D.C. 20036
(202) 331-8800

Counsel for E I. du Pont de Nemours and Company

April 15, 2013

Filing Contains Color Images

CASE GLOSSARY

AEP Texas 2006	*AEP Texas Northern Company v. BNSF Railway*, STB Docket No 41191 (Sub-No. 1) (STB served November 8, 2006)
AEP Texas	*AEP Texas Northern Company v. BNSF Railway*, STB Docket No. 41191 (Sub-No. 1) (STB served September 10, 2007)
AEPCO	*Arizona Electric Power Cooperative, Inc v. BNSF Railway Company and Union Pacific Railroad Company*, STB Docket No. 42113 (STB served November 22, 2011)
Aluminum	*Aluminum Association v. Akron, Canton & Youngstown Railroad*, 367 I.C C. 475 (1983)
APS	*Arizona Public Service Company and Pacificorp V The Atchison, Topeka and Santa Fe Ry.*, 2 STB 367 (1997)
Arizona	*Arizona Public Service Co v United States*, 742 F.2d 644 (D C. Cir. 1984)
Bottleneck I	*Central Power & Light Co. v Southern Pacific Transportation Co*, 1 S.T.B 1059 (1996)
Bottleneck II	*Central Power & Light Co v Southern Pacific Transportation Co.*, 2 S.T B. 235 (1997)
Coal Rate Guidelines or Guidelines	*Coal Rate Guidelines Nationwide*, 1 I.C.C 2d 520 (1985), aff'd sub nom *Consolidated Rail Corp v United States*, 812 F.2d 1444 (3rd Cir. 1987)
Coal Trading Corp.	*Coal Trading Corp. v The Baltimore & Ohio R R., et al.*, 6 I.C C 2d 361 (1990)
CP&L	*Carolina Power & Light Co v Norfolk Southern Railway*, 7 S T.B. 235 (2003)
Dayton P&L	*Dayton Power & Light Co v Louisville & Nash. R R.*, 1 I.C.C.2d 375, 382 (1985)
DMIR I	*Minn. Power, Inc. v. Duluth, Missabe & Iron Range Ry*, 4 S.T.B. 64 (1999)

DMIR II	*Minn Power, Inc. v Duluth, Missabe & Iron Range Ry*, 4 S T.B. 288 (1999)
Duke/CSXT	*Duke Energy Corp v. CSX Transportation Inc.*, 7 S.T.B. 402 (2004)
Duke/NS	*Duke Energy Corp. v Norfolk Southern Railway*, 7 S T.B. 89 (2003)
FMC	*FMC Wyo Corp v Union Pacific Railroad Company*, 4 STB 699 (2000)
General Procedures	*General Procedures for Presenting Evidence in Stand-Alone Cost Rate Cases*, STB Ex Parte No. 347 (Sub-No. 3) (STB served March 12, 2001
IPA	*Intermountain Power Agency v Union Pacific Railroad Company*, STB Docket No. 42127, UP Reply Evidence (Public), filed November 10, 2011
Major Issues	*Major Issues in Rail Rate Cases*, STB Ex Parte No. 657 (Sub-No. 1) (STB served October 30, 2006)
M&G	*M&G Polymers USA, LLC v CSX Transportation, Inc*, STB Docket No 42123 (Filed November 13, 2012)
M&G Decision	*M&G Polymers USA, LLC v. CSX Transportation, Inc.*, STB Docket No. 42123 (served Sept. 27, 2012)
Market Dominance Determinations	*Mkt. Dominance Determinations & Consideration of Prod. Competition*, 365 I.C.C. 118 (1981)
McCarty Farms	*McCarty Farms v Burlington N, Inc*, 3 I.C C.2d 822 (1987)
Nevada Power	*Bituminous Coal – Hiawatha, Utah to Moapa, Nevada*, 6 I.C C 2d 1 (1989)
Nevada Power II	*Bituminous Coal – Hiawatha, Utah to Moapa, Nevada*, 10 I.C.C.2d 259 (1994)
OG&E	*Oklahoma Gas & Electric Co., v Union Pacific Railroad Company*, STB Docket No 42111 (STB served July 24, 2009)

Otter Tail	*Otter Tail Power Co. v BNSF Ry.*, STB Docket No. 42071 (STB served January 27, 2006)
PSCo/Xcel	*Public Service Co. of Colorado d/b/a Xcel Energy v. Burlington Northern and Santa Fe Railway*, 7 S.T.B. 589 (2004)
PSCo/Xcel II	*Public Service Co of Colorado d/b/a Xcel Energy v. Burlington Northern and Santa Fe Railway*, STB Docket No 42057 (STB served Jan. 19, 2005)
Rate Regulation Reforms or Ex Parte 715	*Rate Regulation Reforms*, STB Ex Parte No 715 (STB served July 25, 2012)
Seminole	*Seminole Electric Cooperative, Inc. v. CSX Transportation, Inc.*, STB Docket No. 42110 (Rebuttal Evidence Filed April 15, 2010)
TMPA	*Texas Municipal Power Agency v Burlington Northern and Santa Fe Railway*, 6 STB 573 (2003)
WFA/Basin	*Western Fuels Ass'n, Inc and Basin Electric Power Coop. v. BNSF Railway*, STB Docket No. 42088 (STB served September 10, 2007)
WFA/Basin II	*Western Fuels Ass'n, Inc. and Basin Electric Power Coop v BNSF Railway*, STB Docket No. 42088 (STB served February 18, 2009)
Wisconsin P&L	*Wisconsin Power and Light Co., v. Union Pacific Railroad* 5 STB 955 (2001)
West Texas 638 Utilities	*West Texas Utilities Co v. Burlington Northern Railroad*, 1 STB (1996). *aff'd sub nom. Burlington Northern Railroad v. STB*, 114 F 3d 206 (D.C. Cir. 1997)

ACRONYMS

The following acronyms are used

AAR	Association of American Railroads
AASHTO	American Association of State Highway Officials
ACSES	Advanced Civil Speed Enforcement System
AEI	Automatic Equipment Identification
AEO	EIA's Annual Energy Outlook Forecast
AGR	Alabama and Gulf Coast Railway
All-LF	All-Inclusive Less Fuel Index, published by AAR
AREMA	American Railway Engineering and Maintenance-of-Way Association
ARRA	American Reinvestment and Recovery Act of 2009
ATC	Average Total Cost
ATF	Across-the-Fence
ATP	Automatic Train Protection
ATV	All-Terrain Vehicle
B&B	Bridge and Building
BCFD	Billion Cubic Feet per Day
BNSF	Burlington Northern Santa Fe Railway Company
BRC	Belt Railway Company of Chicago
C&S	Communications and Signals
CAGR	Compound Annual Growth Rate
CFS	2007 Commodity Flow Survey
CCRSI	CoStar Repeat Sales Indices
CERA	Central Railroad of Illinois
CMP	Constrained Market Pricing
cmp	Corrugated Aluminized Metal Pipe
CN	Canadian National Railway
CNW	Chicago & NorthWestern
COBRA	Consolidated Omnibus Budget Reconciliation Act
Conrail	Conrail Shared Asset Area
CP	Canadian Pacific Railway
CPI	Consumer Price Index
CSXT	CSX Transportation, Inc.
CTC	Centralized Traffic Control
CWR	Continuous Welded Rail
CY	Cubic Yards
DCF	Discounted Cash Flow
DFE	Difluoroethane
DMA	Dimethylamine Anhydrous
DME	Dimethyl Ether
DMF	Dimethyl Formamide
DMS	Dimethyl Sulfate
DOT	Department of Transportation
DP	Distributed Power

DRR	DuPont Stand-Alone Railroad
DTL	Direct to Locomotive Fueling
EDI	Electronic Data Interchange
EEO	Equal Employment Opportunity
EIA	Energy Information Administration
EOTD	End of Train Device
ERTMS	European Rail Traffic Management System
FED	Failed-Equipment Detector
FHWA	Federal Highway Administration
FRA	Federal Railroad Administration
FSC	Fuel Surcharges
G&A	General and Administrative
GDLK	Grand Elk Railroad
GDP-IPD	Gross Domestic Product – Implicit Price Deflator
GWR	Gross Weight on Rail
HCl	Hydrochloric Acid (a/k/a Muriatic Acid)
HDF	On-Highway Diesel Fuel Index
HR	Human Resources
HTF	Highway Trust Fund
I&I	Inter and Intra-Train Switching
ICC	Interstate Commerce Commission
IDC	Interest During Construction
IDS/IPS	Intrusion Detection System/Intrusion Prevention System
IHB	Indiana Harbor Belt Railroad Company
ISS	Interline Settlement System
IT	Information Technology
KCS	Kansas City Southern Lines
LAN	Local Area Network
LPM	Limit Price Methodology
MACRS	Modified Accelerated Cost Recovery System
MCPPI	Moody's Commercial Property Price Index
MGT	Million Gross Tons
MIT	Massachusetts Institute of Technology
MGT	Million Gross Tons
MLO	Manager of Locomotive Operations
MMF	Monomethyl Formamide
MMA	Monomethylamine Anhydrous
MMM	Maximum Markup Methodology
MOW	Maintenance of Way
MTO	Manager of Train Operations
NBER	Nittany & Bald Eagle Railroad
NCREIF	National Council of Real Estate Investment Fiduciaries
NDGPS	Nationwide Differential GPS
NEC	Amtrak's Northeast Corridor
NPI	NCREIF Property Index
NS	Norfolk Southern Railway Company

NT/PC	Network Personal Computer
O/D	Origin/Destination
OATC	Original ATC
OS	Operating Station
OSHA	Occupational Safety and Health Administration
PDO	Bio-Propanediol
Pet Coke	Calcined Petroleum Coke
PPI	Producer Price Index
PRB	Powder River Basin, Wyoming
PTC	Positive Train Control
R/VC	Revenue to Variable Cost
RCAF-A	Rail Cost Adjustment Factor, adjusted for productivity
RCAF-U	Rail Cost Adjustment Factor, unadjusted for productivity
RMI	A GE Transportation Company
RMS	RMI's Revenue Management Services System
ROW	Right of Way
RSIA	Rail Safety Improvement Act of 2010
RTC	Rail Traffic Controller Model
SAC	Stand-Alone Cost
SARR	Stand-Alone Railroad
SEC	Securities Exchange Commission
SO3	Sulfur Trioxide
SPLC	Standard Point Location Code
STB	Surface Transportation Board
STCC	Standard Transportation Commodity Code
STEO	Short-Term Energy Outlook
T&E	Train and Engine
TCS	Triple Crown Services
TDIS	Thoroughbred Direct Intermodal Services
TiCl4	Titanium Tetrachloride
TiO2	Titanium Dioxide
TMA	Trimethylamine Anhydrous
TMS	RMI's Transportation Management Services System
TRN	NS Train Event Train Symbol
TRRA	Terminal Railroad Association of St. Louis
UP	Union Pacific Railroad
UPS	Uninterruptible Power Supply
URCS	Uniform Railroad Costing System
USDA	United States Department of Agriculture
WABTEC	Westinghouse Air Brake Technologies
WAN	Wide Area Network
WFL	Waste, Flammable Liquid
WNYP	Western New York & Pennsylvania Railroad
WTI	West Texas Intermediate

MASTER TABLE OF CONTENTS

I. COUNSEL'S ARGUMENT AND SUMMARY OF EVIDENCE I-1

A. OVERVIEW AND SUMMARY I-1

B. THE EVIDENCE SHOWS THAT NS POSSESSES MARKET DOMINANCE OVER EACH OF THE ISSUE MOVEMENTS I-7

1 Quantitative Market Dominance I-7

2. Qualitative Market Dominance I-8

a. NS has proposed an over-simplistic two-part test of market dominance that would produce absurd results. I-13

1) The NS standard ignores three of the five specifically-enumerated market dominance factors. I-14

2) The NS market dominance standard would produce absurd results I-15

b NS fundamentally misrepresents and misinterprets both DuPont's Opening Evidence and the Board's market dominance precedent I-17

1) DuPont has taken a far more holistic approach in its market dominance evidence than NS I-18

2) DuPont has properly defined "effective competition." I-24

3) NS has misapplied the principle that a competing mode need not be capable of handling all of the issue traffic I-27

c Trucks compete for short distance hauls, low volumes, expedited shipments, and when there is no rail service. I-31

1) NS emphasizes DuPont's truck shipment history without considering whether the circumstances of those shipments are comparable to the issue movements. I-32

2) NS incorrectly asserts that DuPont's leverage over motor carriers is evidence of effective competition. I-35

d. NS's own evidence confirms the limits of truck transportation. I-38

e. The magnitude of NS rate increases over just two years, from 2009 to 2011, exemplifies its market dominance. I-42

f. Customer and supplier requirements for rail service preclude the use of alternatives to rail transportation I-45

g The Board must apply its DMIR holding to this case. I-48

1) The statute requires the Board to consider whether effective competition exists for the transportation to which the challenged rate applies I-48

a) NS selectively quotes from the statute and legislative history. I-49

b) The Board must enforce the plain meaning of the statute. I-52

c) Segregation of market dominance and rate reasonableness is not supported by the statute. I-56

d) The Board cannot consider the contract service and rate because they are outside its jurisdiction I-58

2) NS's claims about the "real-world" impact of competition are based on hyperbole and ignore "real-world" implementation problems I-59

a) The NS position is contrary to precedent I-59

b) NS's proposal would be impractical and cause confusion.. ..... I-63

3) Precedent supports DuPont's position... ..... I-66

a) The precedent cited by NS does not support its position I-66

b) The attempt to distinguish DMIR is unpersuasive. I-69

h. The Limit Price Methodology confirms the extent of NS's market dominance.. I-71

1) The Board's adoption of the LPM is procedurally sound..... I-73

2) The LPM supplements, but does not replace, a traditional market dominance analysis. I-76

C. THE EVIDENCE SHOWS THAT THE CHALLENGED RATES ARE UNREASONABLY HIGH..... I-79

1 The Proper Scope of Rebuttal Evidence... ..... I-80

2. Traffic and Revenues (Part III.A)... ..... I-82

a The DRR traffic group..... I-83

b. Forecasted traffic volumes..... I-89

c. Stand-alone revenue... ..... I-89

1) Modified-ATC. I-89

a) NS is incorrect as a matter of law that the Board must apply Original ATC to this case I-90

b) Modified ATC is superior to both Original and Alternate ATC.... ..... I-94

2) Forecasted Revenues. I-95

3. SAC Railroad System (Part III B) I-96

4 Operating Plan (Part III C). I-97

a. DuPont has submitted a feasible operating plan I-99

1) DuPont's Operating Plan and Real-World Operations. I-100

2) Alleged "Missing Trains" and Local Service I-102

3) Rerouted Traffic I-103

4) Yard Service..... I-104

5) Reciprocal Obligations With Other Carriers I-105

6) TIH shipments I-106

7) DuPont's RTC simulation I-106

8) Other operating matters... ..... I-106

b NS use of Multirail is unsupported, and is otherwise infeasible and unrealistic, and therefore the Board should not accept NS's operating plan. I-107

1) The Board should reject NS's operating plan evidence, because NS has presented it without the MultiRail program I-107

2) Because NS has failed to support its operating plan, the Board should accept DuPont's operating plan, with the corrections DuPont has made on Rebuttal. I-108

3) NS presentation of its operating plan evidence without MultiRail prevents the Board from restating it. I-113

4) Any attempt to evaluate NS's MultiRail evidence without the MultiRail program will unnecessarily delay this proceeding and be prejudicial to DuPont. I-114

c. The NS RTC simulation is filled with errors I-117

5. Operating Expenses (Part III D) I-118

a. Locomotive lease costs I-119

b. Locomotive maintenance expense I-120

c Fuel consumption I-121

d Operating personnel I-121

e. General and administrative I-122

f Maintenance of way I-126

g Insurance I-127

h Ad valorem tax I-127

6. Non-Road Property Investment (Part III.E) I-128

7 Road Property Investment (Part III.F) I-128

a Land I-129

b Roadbed Preparation I-131

c. PTC Installation I-132

d. Partially-Owned Lines I-133

8 DCF Analysis (Part III G) I-134

a Cost of capital I-134

b Inflation indices for land I-137

9. Results of SAC Analysis (Part III H) I-138

a Interest schedule on debt I-138

b. Bonus depreciation I-139

c. DRR capital structure I-140

d. Index of operating expenses I-142

e. MMM calculations I-143

D. CONCLUSION I-146

II. MARKET DOMINANCE II-A-1

A QUANTITATIVE MARKET DOMINANCE II-A-1

1. Traffic and Operating Characteristics II-A-1

a. Loaded Miles II-A-1

b Tons per Car II-A-4

2 Variable Cost Calculations II-A-5

3. R/VC Ratios II-A-6

B QUALITATIVE MARKET DOMINANCE II-B-1

1 Intramodal Competition II-B-3

2. Intermodal Competition II-B-6

a. Acid, Sulfuric II-B-7

1) Red Lion (Reybold) Origin Shipments II-B-13

2) Bellwood Origin Shipments II-B-27

3) Bayway (Morses Mill) Origin Shipments II-B-31

4) Miami Fort Origin Shipments II-B-32

b. Acid, Spent Sulfuric II-B-34

c Acid, Fuming Sulfuric (Oleum) II-B-37

d. Acid, Muriatic II-B-42

e. Aniline Oil II-B-46

f. Caustic, Potassium (Caustic Potash) II-B-54

g Caustic, Sodium (Caustic Soda) II-B-57

h Dimethyl Ether II-B-72

i. Dimethyl Formamide II-B-84

j. Dimethyl Sulfate II-B-87

k. Lime II-B-90

l. Methylamines, Anhydrous II-B-94

m Methylamines, Aqueous II-B-123

n Petroleum Coke II-B-132

o Polyethylene II-B-141

p. Sodium Methylate II-B-149

q. Sulfur Trioxide (SO3) II-B-153

r Titanium Dioxide II-B-156

s Waste Flammable Liquid II-B-200
t. Zircon Sand II-B-202
3. The Limit Price Methodology is lawful and economically sound. II-B-206
a. Overview of the LPM II-B-207
b. The LPM should only be used to presume the absence of effective competition II-B-209
c. The Board should substitute R/VC>180 for RSAM II-B-215
d. The LPM establishes a presumption of market dominance for 77 of the 99 contested movements. II-B-216

III. STAND-ALONE COST III-A-1
A. STAND-ALONE TRAFFIC AND REVENUES III-A-1
1. Stand-Alone Traffic Group III-A-2
a. Non-NS TCS Traffic Segments III-A-2
b. Leapfrog Traffic III-A-3
i Leapfrog Traffic Moves In The Real World, Including On NS III-A-5
ii The DRR Network Is Based On Real-World Operations And Traffic Flows III-A-22
2. Forecasted Traffic Volumes III-A-27
a Weighting Factors III-A-29
b. Coal Forecast III-A-30
i NS's Internal Forecast For Coal III-A-30
ii Single Rate of Change For All Coal III-A-32
iii Shifting Tonnage From Capped Plants III-A-33
iv. Treatment of Coke, Pet Coke and Iron Ore III-A-34
b. Other (Non-Coal) Commodity Forecasts III-A-34
c. Compound Annual Growth Rate III-A-34
d Rebuttal Traffic III-A-35
3 Stand-Alone Revenues III-A-36
a ATC SQL Coding III-A-37
i. NS's Technical Correction Is Inadequate III-A-39
ii. DuPont's Technical Correction Is Consistent and Fully Supported III-A-43
b. Modified ATC vs. Original ATC III-A-43
i NS Has Not Justified The Application Of Original ATC To This Case III-A-44

ii. It Would Be Arbitrary And Capricious For The Board To Apply The Discredited Original ATC Methodology III-A-44
iii. Modified ATC Is Superior To Both Original And Alternate ATC III-A-44
(1) Modified ATC is Still Superior to Original ATC for the Reasons Articulated By The Board in WFA/Basin III-A-45
(a) Original ATC's Critical Flaws III-A-47
(b) Alternate ATC's Shortcomings III-A-49
(2) Alternate ATC Artificially Caps R/VC Ratios on High-Density Rail Segments III-A-52
c. TCS/TDIS Revenue Adjustments III-A-56
d Handling Line Payments III-A-61
e. Non-NS TCS Traffic III-A-64
f. Switching Payments III-A-65
g. Rebuttal Restatement III-A-66
4. Forecasted Revenues III-A-67
a. Coal Revenue Calculations III-A-68
b. Development of 2011 TCS Revenue III-A-70
c. Fuel Indices III-A-71
i. Fuel "Cost" Index III-A-72
ii Fuel "Price" Index III-A-72
d Rebuttal Revenue III-A-73
B. STAND-ALONE RAILROAD SYSTEM III-B-1
1 Routes and Mileage III-B-1
a Main Lines III-B-2
i Partially Owned Lines III-B-2
ii. Chicago, IL Extension III-B-3
iii Additional Lead Track III-B-3
b. Branch Lines III-B-3
c. Rebuttal Route Miles III-B-3
2. Track Miles And Weight Of Track III-B-4
a. Main Line Track III-B-5
i. Single Main III-B-5
ii. Other Main III-B-5
b. Branch Line Track III-B-6
c. Other III-B-6

1. Helper Pocket and Setout Track III-B-6
1 Customer Access Sidings.. ..... III-B-6
d Yard And Interchange Track III-B-8
e Rebuttal DRR Track Miles III-B-8
3 Yard And Interchange Track III-B-9
a Yards. III-B-13
i Intermodal Facilities III-B-16
ii Automotive Facilities III-B-16
iii Transload Facilities III-B-17
b. Interchange Track III-B-17
c. Rebuttal DRR Yards III-B-18
4 Joint Facilities III-B-18
5 Signals And Communications System III-B-19
6. Turnouts, FEDs And AEI Scanners III-B-19
C. STAND-ALONE RAILROAD OPERATING PLAN III-C-1
1. DuPont's Operating Plan is Feasible III-C-3
a DuPont's Operating Plan Is Based On NS's Own Operations III-C-4
i. DuPont Used NS's Own Operations As The Template For its Operating Plan III-C-4
(1) The DRR Provides Local Train Service III-C-7
(2) DuPont Did Not Develop a Trainload Operating Plan III-C-8
(3) The DRR Uses The Same Car Classification and Blocking Plans As NS's Real World Operations III-C-10
(4) DuPont Provided The Facilities To Operate Road and Local Trains III-C-10
(5) DuPont Provided Sufficient Time For Local Trains To Pick-Up and Set-Out Cars III-C-11
(6) DuPont Provided The Special Services To Meet The Needs of DRR Shippers III-C-12
ii. DuPont's Operating Plan Was Prepared By Experts With Many Years Of Railroad Operating Experience III-C-12
b. Any Limitations On DuPont's Operating Plan Are A Result Of NS's Failure To Provide Accurate Data III-C-14
i NS Cannot Run Away From Its Own Flawed Data III-C-14
ii. NS Acknowledges The Flaws In Its Own Data III-C-15
(1) Train and Car Event Data Cannot Be Accurately Combined III-C-16

(2) NS Had To Resort To Opinions To Develop Dwell Times Because They Could Not Be Identified From NS Data III-C-20
iii DuPont included All Trains NS's Data Indicated Moved Over The DRR.. III-C-22
(1) Train Event Data Shows More Trains On SARR Than Car Event Data III-C-23
(2) NS Included Trains That Are Not In The Car Event Data III-C-26
c. DuPont's Operating Plan Accounts For Reciprocal Operations III-C-27
i Pre-Blocking Cars Forwarded to Connecting Carriers III-C-28
ii. Handled Run Through Power III-C-29
iii. Distributive Power III-C-30
iv Fueling and Inspecting Locomotives III-C-31
v. Running Repairs To Foreign Railcars III-C-32
d. DuPont's Operating Plan Properly Handles TIH Shipments III-C-33
i. The DRR Can Track TIH Shipments III-C-34
ii. DRR Trains Carrying TIH Shipments Are Limited To 50 MPH III-C-34
iii. The DRR Has The Appropriate Personnel To Handle TIH Shipments III-C-34
e. DuPont Has Reasonably And Properly Included Cross-Over Traffic In "Leapfrog" Service III-C-35
f. DuPont Has Accounted For Traffic On Line Segments Impacted by Rerouted Trains III-C-50
2. DuPont's RTC Simulation Proves The Feasibility Of The DRR Operating Plan III-C-53
a. DuPont's Modeling Of NS's Own Operations Proves Its Feasibility III-C-53
b. DuPont Used Correct Grade Information III-C-54
i. DuPont Relied On The Grade Information Included In NS's RTC Models Provided In Discovery III-C-55
ii. Rebuttal RTC Grades III-C-56
c. Track Outages III-C-56
i. NS Train Movement Data Shows Train Moving Over Line Segments NS Claims Were Shutdown Due To Outages III-C-56
ii Rebuttal RTC Outages III-C-57
d. Amtrak Northeast Corridor III-C-58
e. Foreign Railroad Crossings III-C-58
f DuPont's Modeling of The Chicago Area III-C-59
g. Light Engine and Hi-Rail Movements III-C-60
h. DuPont Incorporated In-Route Consist Stops and Changes III-C-61

i The DRR Provides The Same Or Better Service Quality Than NS III-C-62

3 NS's MultiRail-Based Operating Plan is Unnecessary and Erroneous, and It Complicates the SAC Analysis while Providing no Advantage Over DuPont's Tried and Tested Model III-C-65

a. Substituting Modeled SARR Routing And Operations For Actual Routing And Operations Is Unnecessary III-C-67

b. Substituting Modeled SARR Routing and Operations for Actual Routing and Operations Distorts the SAC Analysis III-C-71

c NS Uses A Model That Is Superior To MultiRail In Developing its Real-World Operating Plan III-C-84

d. NS's MultiRail-Based Modeling Exercise Fails To Consider Downstream Impacts On Both DRR Traffic And Other Non-Selected NS Traffic. III-C-85

e NS's MultiRail-Based Modeling Exercise Fails To Account For All Selected DRR Traffic III-C-88

f NS's MultiRail-Based Modeling Exercise Relies on Simple Mathematical Algorithms Rather than Real-World Operations III-C-92

g NS's MultiRail-Based Modeling Exercise Is Riddled With Faulty And Unalterable Inputs And Assumptions That Render Its Outputs And All Downstream SAC Analyses Invalid... .... III-C-96

4 NS's RTC Model Of The DRR Is Filled With Errors.. . ... III-C-108

a. NS Incorrectly Modeled Foreign Railroad Trains III-C-108

b NS Improperly Modeled Random Outages III-C-111

c. NS Improperly Input RTC Trains..... . ... III-C-112

d. NS RTC Network Does Not Reflect Its Investment III-C-117

5. DuPont Response to NS's Criticisms of DuPont's Operating Plan III-C-120

a. Yard and Facilities.... .... III-C-120

i Yards... . . . . III-C-120

(1) Yard Switching and Classification Tracks... .. .. III-C-121

(a) NS Yard Classification Car Counts are Unsupported III-C-122

(b) NS Yard Classification Car Counts are Unrealistic III-C-123

(c) NS Hump Yard Classification Track Miles are Significantly Overstated III-C-125

(2) Determination of DRR Yard Classification Tracks in Rebuttal III-C-126

ii. Intermodal Facilities.... .... III-C-128

iii Automotive Facilites III-C-128

iv Transload Facilities III-C-129

b. Yard Activity III-C-129

i. Locomotive Inspections and Fueling III-C-129
ii. Railcar inspections..... III-C-130
c. Train Sizes and Equipment III-C-130
i Train Size III-C-130
ii Locomotives..... III-C-131
(1) Road Locomotives..... III-C-132
(a) Locomotive Dwell in Yards..... III-C-133
(b) Peaking Factor III-C-136
(c) Spare Margin. III-C-138
(2) Local Trains. III-C-138
(3) Helper Locomotives III-C-138
(4) Switch Locomotives III-C-139
d. Crew Districts and Requirements III-C-140
i Road Crews III-C-140
ii. Yard Crews III-C-140
iii Helper Crews III-C-140
D OPERATING EXPENSES III-D-1
1. Locomotives III-D-3
a. Acquisition III-D-3
i. Locomotive Types III-D-3
ii Locomotive Lease Costs III-D-5
iii. Number of Locomotives III-D-9
b Locomotive Maintenance Expense III-D-10
c Locomotive Servicing (Fuel, Sand and Lubrication). III-D-11
i. Fuel Cost III-D-11
ii Fuel Consumption III-D-12
iii Sand and Lubrication III-D-13
2. Railcars III-D-14
a. Leasing III-D-14
i. RTC Transit Times III-D-15
ii. Dwell Time in Yards III-D-15
iii. Intermodal Car Costs III-D-16
b. Railcar Maintenance III-D-18
c Private Car Allowances... ..... III-D-19

3. Operating Personnel III-D-19
a Number of T&E Personnel III-D-19
i In Rebuttal DuPont Includes All Required Trains on the DRR System III-D-20
ii Directional Imbalances On the DRR III-D-20
iii. DRR Re-Crew Rate... ..... III-D-23
iv. DuPont Includes All Necessary Helper Service III-D-24
v. Yard Crews III-D-24
b. T&E Personnel Compensation III-D-26
i. T&E Wages III-D-26
ii. Fringe Benefits III-D-27
iii. Hotel and Taxi Expense III-D-29
c. Non-Train Operating Personnel III-D-30
i Transportation Department III-D-31
(1) Operations Planning and Joint Facilities III-D-31
(2) Operations Control III-D-32
(3) Dispatch III-D-33
(4) Crew Management and Crew Calling III-D-34
(5) Terminal Operations III-D-35
(6) Locomotive Operations III-D-36
(7) Intermodal and Automotive Terminals III-D-37
ii. Mechanical Department III-D-38
(1) EOTD Manager III-D-38
(2) Managers – Maintenance Planning III-D-39
(3) Car Inspection III-D-39
iii. Operations Support Department III-D-42
(1) Operations Service and Support (OSS) III-D-42
(2) Service Design and Measurement III-D-43
(3) Equipment Planning and Distribution III-D-44
(4) Damage Prevention and Freight Claims III-D-44
d Non-Train Operating Personnel Compensation III-D-45
i. Vice Presidents III-D-45
ii. Fringe Benefits III-D-45
e. Materials, Supplies and Equipment III-D-46
4. General and Administrative III-D-46

a Staffing Requirements III-D-47
i. Executive Department.. ..... III-D-48
ii. Board of Directors..... III-D-49
iii. Marketing & Customer Service Department III-D-49
iv. Finance & Accounting Department III-D-49
v. Law and Administration Department..... III-D-50
vi Information Technology III-D-50
b. Compensation III-D-51
c. Material, Supplies, and Equipment..... III-D-51
d. Other III-D-51
i. IT Systems III-D-51
e. Other Out-Sourced Functions III-D-52
f. Start-up and Training Costs III-D-53
g. Bad Debt III-D-53
5 Maintenance-of-Way..... III-D-53
6. Leased Facilities..... III-D-56
a Misapplied Fees III-D-57
i. Car Counts III-D-57
ii. Terminal Railroad of St. Louis III-D-58
iii Conrail Shared Asset Areas III-D-59
iv. Belt Railway Company of Chicago III-D-60
b Improperly Routed Traffic. III-D-61
c. Construction of Chicago Area Track III-D-62
d. AMTRAK Segments III-D-62
e. Mathematical Error III-D-63
7. Loss and Damage III-D-63
8. Insurance III-D-63
9. Ad Valorem Tax..... III-D-65
10. Other III-D-68
a. Intermodal Lift and Ramp Cost III-D-68
i. Clerical Staff and Utilities III-D-69
ii. Elizabeth, New Jersey III-D-69
iii. Chicago Cross-town Drays III-D-70
iv. Additional Personnel..... III-D-70

b. Automotive Handling Cost III-D-70
c Costs Incurred by Residual NS for New DRR-NS Interchanges III-D-71
d. Calculation of Annual Operating Expense III-D-72
E NON-ROAD PROPERTY INVESTMENT III-E-1
F ROAD PROPERTY INVESTMENT III-F-1
1 Land III-F-4
a Review of Norfolk Southern's Land Valuation III-F-5
b. Rebuttal Of NS Review Of DuPont Appraisal Summary III-F-11
c Rebuttal of NS Appraiser's Review Summary III-F-13
d Easements III-F-14
2. Roadbed Preparation III-F-15
a. Clearing and Grubbing III-F-29
i Quantities of Clearing And Grubbing III-F-29
ii. Clearing and Grubbing Unit Costs III-F-29
b Earthwork III-F-31
i. Earthwork Quantities III-F-31
(1) DRR Line Segments III-F-31
(2) DRR Yards III-F-33
(3) Total Earthwork Quantities III-F-34
ii. Earthwork Unit Costs III-F-35
(1) Common Excavation III-F-35
(2) Common Excavation – Adverse III-F-36
(3) Loose Rock Excavation III-F-39
(4) Loose Rock Excavation – Adverse III-F-40
(5) Solid Rock Excavation III-F-40
(6) Solid Rock Excavation – Adverse III-F-42
(7) Embankment/Borrow III-F-42
(8) Other Earthwork Quantities and Unit Costs III-F-43
(a) Stripping III-F-43
(b) Undercutting III-F-44
(c) Over-Excavation III-F-47
(d) Fine Grading III-F-48
(e) Swell III-F-49
(9) Subgrade Preparation III-F-51

(10) Land for Waste Excavation III-F-55
c. Drainage III-F-57
i Lateral Drainage III-F-57
ii Yard Drainage III-F-57
d Culverts III-F-58
i Culvert Unit Costs III-F-58
ii Culvert Installation Plans III-F-59
iii Culvert Quantities III-F-60
e. Other III-F-61
i. Sideslopes III-F-61
ii. Ditches III-F-61
iii Retaining Walls III-F-61
(1) Increased Roadbed Width III-F-62
(2) Masonry Walls III-F-64
(3) Timber and Tie Walls III-F-66
(4) Piles III-F-66
(5) Foundation Excavation III-F-67
(6) Unit Costs III-F-67
iv. Rip Rap III-F-68
v. Relocating and Protecting Utilities III-F-68
vi Seeding/Topsoil Placement III-F-68
vii. Water for Compaction III-F-68
viii. Surfacing for Detour Roads III-F-68
ix Environmental Compliance III-F-68
x. Lighting for Night Work III-F-69
xi. Dust Control Work III-F-70
3 Track Construction III-F-70
a Geotextiles III-F-72
b. Ballast and Sub-ballast III-F-73
i Ballast and Sub-ballast Quantities III-F-73
ii. Ballast and Sub-ballast Unit Costs III-F-76
c. Ties III-F-80
d Track (Rail) III-F-81
i. Specifications III-F-81

ii. Rail Pricing III-F-81
iii. Field Welds III-F-82
iv. Insulated Joints III-F-83
v. Switches III-F-83
c Other III-F-84
i. Rail Lubricators III-F-84
ii Plates, Spikes and Anchors III-F-84
iii Derails and Wheel Stops III-F-84
iv. Crossing Diamonds III-F-85
v. Materials Transportation III-F-85
vi. Track Labor and Equipment III-F-85
4 Tunnels III-F-86
5 Bridges III-F-86
a Bridge Inventory III-F-87
b Bridge Design and Cost Overview III-F-90
i. Cost Overview III-F-91
ii. Bridge Design III-F-92
(1) Superstructure Design (Spans) III-F-92
(2) Substructure Design (Piers and Abutments) III-F-93
iii. Type I Bridges III-F-94
iv. Type II Bridges III-F-95
v. Type III Bridges III-F-95
vi Type IV Bridges III-F-97
vii Bridges with Multiple Span Types III-F-97
viii. Special Bridges III-F-98
(1) Movable Bridges III-F-98
(2) Exceptionally Tall Bridges III-F-106
(3) Non-Movable Bridges over Navigable Waters III-F-107
c. Highway Overpasses III-F-107
d. Summary III-F-108
6 Signals and Communications III-F-108
a. Centralized Traffic Control III-F-108
i. PTC Installation in 2009 ..... III-F-108
ii. Inventory of Signal Components III-F-113

iii. Unit Costs for Signal Components III-F-115
b. Positive Train Control. III-F-116
i. PTC Wayside System III-F-116
ii. PTC IT Costs..... III-F-117
iii. PTC Locomotive Costs III-F-118
iv. PTC Development Costs. III-F-118
v. PTC Expenditure Schedule III-F-118
c. Detectors III-F-118
d Crossing Signal Equipment..... III-F-119
e. Communications III-F-120
f. Hump Yard Equipment III-F-120
g Summary III-F-121
7. Buildings and Facilities... ..... III-F-121
a. Headquarters Building III-F-121
b Fueling and Locomotive Servicing Facilities III-F-122
i Fixed Fueling Facilities III-F-122
ii. Fueling by Truck and Locomotive Servicing Facilities..... III-F-124
c. Locomotive Repair Facilities III-F-124
d Car Repair Facilities III-F-125
e. Crew Change Facilities III-F-127
f. Yard Offices..... III-F-128
g. Maintenance of Way Buildings (Roadway Buildings) III-F-129
h. Wastewater Treatment III-F-131
i. Other Facilities / Site Costs III-F-131
j. Guard Booths III-F-134
k Mechanic Repair Shops III-F-135
l Mechanical Offices III-F-136
m Observation/Yard Master Towers III-F-136
n. Storage and Warehouse Buildings III-F-137
o. Miscellaneous Buildings..... III-F-138
p. Foundation Designs III-F-138
q Signal Maintainer Buildings III-F-138
r. Intermodal Terminals..... III-F-139
s. Bulk Transfer Facilities III-F-139

t. Automotive Facilities.. .... III-F-140
8. Public Improvements..... .... III-F-140
a Fences III-F-141
b. Signs and Road Crossing Devices III-F-141
c. Grade-Separations III-F-141
d At-Grade Crossings. III-F-142
e At-Grade Crossing Detours... . ... III-F-142
f. At-Grade Crossing Vegetation Removal III-F-142
9. Mobilization III-F-143
10. Engineering III-F-145
11 Contingencies III-F-145
12. Construction Schedule.. .... III-F-146
13 Joint Facilities / Shared Assets.. ... ... III-F-147
a. DRR Is Not Required To Construct The Facilities Of Non-Defendant Third Parties III-F-148
i. NS Rail Does Not Own Conrail Or IHB..... . ... III-F-149
ii The DRR Is Not Required To Acquire The NS Rail Ownership Interest In The BRC And TRRA III-F-153
b NS Has Not Properly Calculated The DRR's Ownership Costs For NS-Owned Joint Facilities III-F-155
c NS Improperly Substitutes Replacement Costs For Ownership Costs... III-F-155
d NS Includes Ownership Costs But Ignores Offsetting Revenues..... III-F-159
e Conclusions... .... III-F-165
G. DISCOUNTED CASH FLOW ANALYSIS III-G-1
1. Cost of Capital. III-G-1
a Updated Cost of Capital III-G-2
b. Weighting of 2006 Cost of Equity III-G-3
c. Equity Flotation Costs III-G-4
2. Inflation Indices..... . .. .III-G-7
3. Tax Liability.. ... . III-G-10
4. Capital Cost Recovery III-G-10
H. RESULTS OF SAC ANALYSIS III-H-1
1. Results of SAC DCF Analysis III-H-1
a Cost of Capital III-H-1
b. Road Property Investment Values III-H-1

c Interest During Construction..... ... . .III-H-2
d Interest Schedule of Assets Purchased With Debt Capital III-H-2
e. Present Value Of Replacement Cost.... ....III-H-4
f. Tax Depreciation Schedules III-H-5
i Bonus Depreciation. III-H-5
ii. Asset Tax Lives III-H-9
g. Average Inflation In Asset Prices III-H-9
h Discounted Cash Flow... .. ..III-H-9
i. DRR Capital Structure.... ... .III-H-10
ii. PTC Investment III-H-13
i. Computation of Tax Liability – Taxable Income III-H-15
j Operating Expenses III-H-15
k. Summary of SAC... ....III-H-16
2. Maximum Rate Calculations.. .. . .III-H-17
a. The NS Modifications to the MMM Analysis are Unnecessary and Improper..... .. ..III-H-18
i. NS May Not Lawfully Modify the MMM Analysis in an Adjudicatory Proceeding Because the Board Adopted MMM in a Formal Rulemaking III-H-18
ii The NS Modifications to the MMM Analysis are Unlawful. III-H-18
iii. NS Improperly Treats PTC Costs as Unique to TIH Traffic. III-H-22
b. DuPont Correctly Indexed Variable Costs In the MMM Model III-H-24
3. Maximum Reasonable Rates... .... III-H-26

EXHIBITS

REBUTTAL EXHIBIT II-A

1. Variable Cost, Jurisdictional Threshold, Tariff Rate and Revenue/Variable Cost Ratios Per Car for DuPont Movements – 2Q09

2. Variable Cost, Jurisdictional Threshold, Tariff Rate and Revenue/Variable Cost Ratios Per Car for DuPont Movements – 3Q09

3 Variable Cost, Jurisdictional Threshold, Tariff Rate and Revenue/Variable Cost Ratios Per Car for DuPont Movements – 4Q09

4. Variable Cost, Jurisdictional Threshold, Tariff Rate and Revenue/Variable Cost Ratios Per Car for DuPont Movements – 1Q10

5. Variable Cost, Jurisdictional Threshold, Tariff Rate and Revenue/Variable Cost Ratios Per Car for DuPont Movements – 2Q10

6. Variable Cost, Jurisdictional Threshold, Tariff Rate and Revenue/Variable Cost Ratios Per Car for DuPont Movements – 3Q10

7. Variable Cost, Jurisdictional Threshold, Tariff Rate and Revenue/Variable Cost Ratios Per Car for DuPont Movements – 4Q10

8. Variable Cost, Jurisdictional Threshold, Tariff Rate and Revenue/Variable Cost Ratios Per Car for DuPont Movements – 1Q11

9. Variable Cost, Jurisdictional Threshold, Tariff Rate and Revenue/Variable Cost Ratios Per Car for DuPont Movements – 2Q11

10. Variable Cost, Jurisdictional Threshold, Tariff Rate and Revenue/Variable Cost Ratios Per Car for DuPont Movements – 3Q11

11 Variable Cost, Jurisdictional Threshold, Tariff Rate and Revenue/Variable Cost Ratios Per Car for DuPont Movements – 4Q11

12 Variable Cost, Jurisdictional Threshold, Tariff Rate and Revenue/Variable Cost Ratios Per Car for DuPont Movements – 1Q12

13. DuPont Rebuttal Miles Calculations

14 Summary of DuPont's Rebuttal Tons Per Car Calculations

15 Summary of Traffic and Operating Characteristics for DuPont Movements

16 Summary of Tariff Rates for DuPont Movements 2Q09 - 1Q12

17. Summary of Outlier Miles Excluded

REBUTTAL EXHIBIT II-B

1 Comparison of Changes in NS Costs and RCAF – 1997 TO 2009

Attachment No. 1 - Summary of Changes in NS Variable Costs and Contract Adjustment Mechanism –1997 to 2009

2. REDACTED (HIGHLY CONFIDENTIAL)

REBUTTAL EXHIBIT III-A

1. Cross-Over Traffic

2. Demonstration of DuPont and NS TCS/TDIS Intermodal Traffic Revenue Calculation Methodologies and Development of Adjustment Indices Required to Correct DuPont Opening Overstatement and NS Reply Understatement

3. Comparison of DuPont and NS Revenue Calculation for TCS Moves

REBUTTAL EXHIBIT III-C

1. Data Sufficiency Rebuttal

Attachment No. 1 - REDACTED (HIGHLY CONFIDENTIAL)

Attachment No. 2 - REDACTED (HIGHLY CONFIDENTIAL)

Attachment No. 3 – REDACTED (HIGHLY CONFIDENTIAL)

2. A Visual Representation of 65% of the Grade Errors Claimed by NS (0 5% or less)

REBUTTAL EXHIBIT III-D

1. General and Administrative Expense

2. Maintenance Of Way

Appendix A – Rebuttal to NS Reply Comments

Appendix B – MOW Rebuttal – Additional Supporting Information

REBUTTAL EXHIBIT III-F

1 DRR Road Property Investment

2 Rebuttal Report and Appraisal Review of Retrospective Appraisal of Land for E I. DuPont de Nemours and Company (DuPont) Stand Alone Railroad (SARR) in 20 Eastern States

REBUTTAL EXHIBIT III-G

1 Land Inflation Values

REBUTTAL EXHIBIT III-H

1. Summary of SAC Results

2 Maximum Markup Methodology R/VC Ratios

3. Comparison of NS Tariff Rates and STB Maximum Rates Per Car for DuPont Movements - - 2Q09

4 Comparison of NS Tariff Rates and STB Maximum Rates Per Car for DuPont Movements - - 3Q09

5. Comparison of NS Tariff Rates and STB Maximum Rates Per Car for DuPont Movements - - 4Q09

6. Comparison of NS Tariff Rates and STB Maximum Rates Per Car for DuPont Movements - - 1Q10

7. Comparison of NS Tariff Rates and STB Maximum Rates Per Car for DuPont Movements - - 2Q10

8. Comparison of NS Tariff Rates and STB Maximum Rates Per Car for DuPont Movements - - 3Q10

9. Comparison of NS Tariff Rates and STB Maximum Rates Per Car for DuPont Movements - - 4Q10

10. Comparison of NS Tariff Rates and STB Maximum Rates Per Car for DuPont Movements - - 1Q11

11. Comparison of NS Tariff Rates and STB Maximum Rates Per Car for DuPont Movements - - 2Q11

12 Comparison of NS Tariff Rates and STB Maximum Rates Per Car for DuPont Movements - - 3Q11

13. Comparison of NS Tariff Rates and STB Maximum Rates Per Car for DuPont Movements - - 4Q11

14 Comparison of NS Tariff Rates and STB Maximum Rates Per Car for DuPont Movements - - 1Q12

PART II-A

TAB 1

Variable Cost, Jurisdictional Threshold, Tariff Rate and
Revenue/Variable Cost Ratios Per Car for DuPont Movements - 2009

	Origin		Destination							2Q2009		
	City	ST	City	ST	Railroad(s)	Commodity	Phase III Cost Base Year 2009	Index to 2009	Phase III Cost 1/	Jurisdictional Threshold 2/	Tariff Rate 3/	Revenue/Variable Cost Ratio 4/
	(1)		(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Exhibit A - Local Moves												
1	Removed											
2	Bayway	NJ	Waynesville	NC	NS	2813315	$2,272	0.9867	$2,242	$4,035	xxx	xxx
3	Belle	WV	Danville	IL	NS	2813980	$1,656	0.9867	$1,634	$2,942	xxx	xxx
4	Removed											
5	Removed											
6	Removed											
7	Removed											
8	Removed											
9	Belle	WV	Wyandotte	MI	NS	2813934	$1,238	0.9867	$1,222	$2,199	xxx	xxx
10	Charleston	TN	Edgemoor	DE	NS	2812815	$2,253	0.9867	$2,223	$4,001	xxx	xxx
11	Edgemoor	DE	Chicago	IL	NS	2816130	$2,251	0.9867	$2,221	$3,998	xxx	xxx
12	Edgemoor	DE	Chillicothe	OH	NS	2816130	$2,192	0.9867	$2,163	$3,894	xxx	xxx
13	Edgemoor	DE	Mahrt	AL	NS	2816130	$2,895	0.9867	$2,857	$5,142	xxx	xxx
14	Edgemoor	DE	Riverwood Intl	GA	NS	2816130	$2,627	0.9867	$2,592	$4,666	xxx	xxx
15	Edgemoor	DE	Wabash	IN	NS	2816130	$2,304	0.9867	$2,274	$4,092	xxx	xxx
16	Lemoyne	AL	Gaut	SC	NS	4810560	$2,363	0.9867	$2,332	$4,197	xxx	xxx
17	Loudon	TN	Strathmann	LA	NS	2818512	$1,926	0.9867	$1,900	$3,421	xxx	xxx
18	Louisville	KY	Decatur	IL	NS	2819450	$1,238	0.9867	$1,222	$2,199	xxx	xxx
19	Louisville	KY	Lafayette	IN	NS	2819450	$1,548	0.9867	$1,528	$2,750	xxx	xxx
20	Removed											
21	Removed											
22	McIntosh	AL	Lemoyne	AL	NS	2812220	$494	0.9867	$487	$877	xxx	xxx
23	Reybold	DE	Detroit	MI	NS	2819315	$1,804	0.9867	$1,780	$3,204	xxx	xxx
24	Reybold	DE	Fort Mill	SC	NS	2819315	$1,808	0.9867	$1,784	$3,212	xxx	xxx
25	Reybold	DE	Morrisville	PA	NS	2819315	$572	0.9867	$564	$1,016	xxx	xxx
Exhibit B - Joint Moves												
1	Belle	WV	Anaheim	CA	NS CHGO UP	2813980	$1,546	0.9867	$1,525	$2,746	$7,715	506%
2	Belle	WV	Bayport	TX	NS ESTL-UP	2818620	$1,940	0.9867	$1,914	$3,446	$4,537	237%
3	Removed											
4	Belle	WV	Brownsville	TX	NS ESTL-UP	2818221	$1,920	0.9867	$1,895	$3,410	$4,537	239%
5	Belle	WV	Burley	ID	NS-CHGO-UP	2813934	$1,546	0.9867	$1,525	$2,746	$7,715	506%
6	Belle	WV	Cadet	MO	NS-KCITY-UP	2813934	$2,403	0.9867	$2,371	$4,268	$9,563	403%
7	Removed											
8	Belle	WV	Channelview	TX	NS ESTL-UP	2818130	$1,779	0.9867	$1,756	$3,160	$4,537	258%
9	Belle	WV	City of Commerce	CA	NS STRTR BNSF	2818221	$1,677	0.9867	$1,654	$2,978	$8,561	517%
10	Belle	WV	Conroe	TX	NS ESTL-BNSF	2813934	$1,915	0.9867	$1,890	$3,402	$8,093	428%
11	Belle	WV	Corsicana	TX	NS ESTL-UP	2813934	$1,819	0.9867	$1,795	$3,231	$8,093	451%
12	Removed											
13	Belle	WV	East Billings	MT	NS-CHGO-BNSF	2818130	$1,526	0.9867	$1,506	$2,710	$5,132	341%
14	Belle	WV	Ethyl	AR	NS ESTL-UP-MCNEIL LNW	2813934	$1,834	0.9867	$1,810	$3,258	$8,093	447%
15	Belle	WV	Finley	WA	NS-CHGO-BNSF	2813934	$1,546	0.9867	$1,526	$2,746	$7,715	506%
16	Removed											
17	Belle	WV	Freeport	TX	NS ESTL-UP	2818130	$1,694	0.9867	$1,671	$3,008	$4,537	271%
18	Belle	WV	Garyville	LA	NS-NEWOR-CN	2813934	$2,756	0.9867	$2,719	$4,894	$10,560	388%
19	Belle	WV	Gramar	LA	NS NEWOR-CN	2813934	$2,523	0.9867	$2,490	$4,481	$10,560	424%
20	Belle	WV	Janesville	WI	NS-CHGO-UP	2818131	$1,518	0.9867	$1,498	$2,696	$7,715	515%
21	Belle	WV	Laredo	TX	NS-ESTL-UP	2818221	$1,920	0.9867	$1,895	$3,410	$4,537	239%
22	Belle	WV	Laredo	TX	NS-ESTL-UP	2818131	$1,920	0.9867	$1,895	$3,410	$8,093	427%
23	Belle	WV	Lorenzo	IL	NS-CHGO-BNSF	2813980	$1,529	0.9867	$1,509	$2,716	$7,715	511%
24	Belle	WV	Los Angeles	CA	NS STRTR BNSF	2813934	$1,722	0.9867	$1,699	$3,059	$6,649	391%
25	Belle	WV	Los Angeles	CA	NS-CHGO-UP	2818130	$1,535	0.9867	$1,515	$2,727	$5,132	339%
26	Removed											
27	Belle	WV	Malledale	IL	NS-CHGO-CN	2818131	$1,520	0.9867	$1,500	$2,699	$7,715	514%
28	Removed											
29	Belle	WV	Saint Paul	MN	NS CHGO-BNSF	2818221	$1,681	0.9867	$1,659	$2,986	$5,132	309%
30	Belle	WV	San Dimas	CA	NS-CHGO-UP	2813980	$1,653	0.9867	$1,631	$2,935	$7,715	473%
31	Removed											
32	Belle	WV	St Gabriel	LA	NS-NEWOR-CN	2813934	$2,739	0.9867	$2,702	$4,864	$10,560	391%
33	Belle	WV	St Joseph	MO	NS KCITY-UP	2818130	$2,396	0.9867	$2,365	$4,256	$6,465	273%
34	Removed											
35	Belle	WV	Strang	TX	NS ESTL-UP	2818221	$1,992	0.9867	$1,966	$3,539	$4,537	231%
36	Belle	WV	Strang	TX	NS-ESTL-BNSF	2813934	$1,643	0.9867	$1,622	$2,919	$8,093	499%
37	Belle	WV	Strang	TX	NS ESTL-UP	2819183	$1,765	0.9867	$1,741	$3,134	$4,157	239%
38	Removed											
39	Belle	WV	Texas City	TX	NS ESTL-UP	2813934	$1,834	0.9867	$1,810	$3,257	$8,093	447%
40	Belle	WV	Verona	MO	NS ESTL-BNSF	2813934	$1,902	0.9867	$1,877	$3,378	$8,093	431%
41	Belle	WV	West Memphis	AR	NS KCITY-UP	2813934	$2,394	0.9867	$2,363	$4,253	$9,563	405%
42	Belle	WV	Winfield Spur	LA	NS-MERID-KCS	2813980	$2,316	0.9867	$2,286	$4,114	$8,939	391%
43	Belle	WV	Wichita	KS	NS-ESTL-BNSF	2813934	$1,942	0.9867	$1,916	$3,448	$8,093	422%
44	Bloomington	TX	Greenville	SC	UP-NEWOR-NS	2821142	$1,658	0.9867	$1,636	$2,944	$5,713	349%
45	Bloomington	TX	Washington, Warren	NJ	UP-ESTL-NS	2821142	$2,307	0.9867	$2,276	$4,097	$9,013	396%
46	Removed											
47	Charleston, Bradley	TN	Woodstock	TN	NS MEMPH CN	2812220	$1,039	0.9867	$1,045	$1,880	$1,911	183%
48	Cresap	WV	Edgemoor	DE	CSXT-HAGTN-NS	2991315	$647	0.9867	$639	$1,149	$2,341	367%
49	Dowling	TX	Fort Mill	SC	KCS MERID-NS	2813112	$1,750	0.9867	$1,727	$3,108	$4,450	258%
50	Edgemoor	DE	Garland	TX	NS-MERID-KCS	2816130	$2,824	0.9867	$2,787	$5,016	$6,246	224%
51	Edgemoor	DE	Green	MI	NS-CHGO-CN	2816130	$2,158	0.9867	$2,129	$3,832	$5,689	267%
52	Edgemoor	DE	Laredo	TX	NS ESTL-UP	2816130	$2,502	0.9867	$2,468	$4,443	$6,093	247%
53	Edgemoor	DE	Madawaska	ME	NS ROUFT-CN	2816130	$1,290	0.9867	$1,273	$2,292	$3,530	277%
54	Edgemoor	DE	Pasadena	TX	NS ESTL-UP	2819971	$2,451	0.9867	$2,418	$4,352	$10,747	444%
55	Edgemoor	DE	Port Huron	MI	NS-DUTT-CN	2816130	$1,679	0.9867	$1,657	$2,982	$4,880	295%
56	Edgemoor	DE	Portland	ME	NS-MCV-PAS-AYERM-ST	2816130	$1,287	0.9867	$1,270	$2,287	$3,149	248%
57	Edgemoor	DE	Portland	OR	NS-CHGO-BNSF	2816130	$2,180	0.9867	$2,151	$3,872	$5,689	264%
58	Edgemoor	DE	Quonesec	MI	NS-CHGO-CN	2816130	$2,158	0.9867	$2,129	$3,832	$5,689	267%
59	Edgemoor	DE	Riley	ME	NS-MCV PAS-AYERM ST	2816130	$1,291	0.9867	$1,274	$2,294	$3,149	247%
60	Edgemoor	DE	Rumford	ME	NS MCV-PAS-AYERM-ST	2816130	$1,287	0.9867	$1,270	$2,286	$3,149	248%
61	Removed											
62	Edgemoor	DE	Shawmut	ME	NS-MCV-PAS AYERM-ST	2816130	$1,289	0.9867	$1,272	$2,289	$3,149	248%

Variable Cost, Jurisdictional Threshold, Tariff Rate and
Revenue/Variable Cost Ratios Per Car for DuPont Movements - 2009

	Origin City (1)	ST	Destination City (2)	ST	Railroad(s) (3)	Commodity (4)	Phase III Cost Rate Year 2009 (5)	1Q2009 Index to 2Q09 (6)	Phase III Cost 1/ (7)	Jurisdictional Threshold 2/ (8)	Tariff Rate 3/ (9)	Revenue/Variable Cost Ratio 4/ (10)
63	Edgemoor	DE	Seeley	CA	NS-CHGO-UP	2816130	$2,184	0.9867	$2,155	$3 879	$5,689	264%
64	Edgemoor	DE	Seeley	CA	NS-STRTR-BNSF	2816130	$2,350	0.9867	$2,318	$4,173	$5,101	220%
65	Edgemoor	DE	St Paul	MN	NS-CHGO-UP	2816130	$2,181	0.9867	$2,152	$3,874	$5 689	264%
66	Removed											
67	Edgemoor	DE	West Monroe	LA	NS-MERID-KCS	2816130	$2,831	0.9867	$2,793	$5,027	$6,246	224%
68	Edgemoor	DE	Wheeling	IL	NS-CHGO-CN	2816130	$2,171	0 9867	$2,142	$3,855	$5,689	266%
69	Enid	OK	Edgemoor	DE	BNSF ESTL-NS	2991315	$2,482	0.9867	$2,449	$4,408	$5,364	219%
70	Removed											
71	Gregory	TX	Dragon	MS	UP-NEWOR NS	2813984	$500	0 9867	$493	$888	$2,373	481%
72	Removed											
73	Gregory	TX	Royce	NJ	UP-ESTL-NS	2813984	$2,639	0 9867	$2,604	$4,687	$10,173	389%
74	Removed											
75	Lemont	IL	Edgemoor	DE	BNSF-CHGO-NS	2991315	$2,081	0.9867	$2,054	$3,697	$4,608	224%
76	Lemoyne	AL	Artesia	MS	NS-MERID-KCS	4810360	$1 241	0.9867	$1 225	$2,205	$3,350	290%
77	McIntosh	AL	Burnside	LA	NS-MOBIL-CN	2819330	$316	0 9867	$312	$561	$1 092	351%
78	McIntosh	AL	Delisle	MS	NS-MOBIL-CN HATBG KCS	2812815	$320	0 9867	$315	$568	$2,184	693%
79	McIntosh	AL	Delisle	MS	NS-MOBIL-CN-HATBG-KCS	2812220	$325	0 9867	$321	$577	$1 993	622%
80	McIntosh	AL	Orange	TX	NS NEWOR-UP	2812220	$1,567	0 9867	$1,546	$2,784	$3,658	237%
81	McIntosh	AL	Woodstock	TN	NS-MOBIL-CN	2812220	$325	0.9867	$320	$576	$1,993	622%
82	Orange	TX	Greenville	SC	UP-NEWOR NS	2821142	$2,025	0 9867	$1,998	$3,596	$3,713	186%
83	Orange	TX	Washington, Warren	NJ	UP-ESTL-NS	2821142	$2,159	0.9867	$2,130	$3,834	$9 013	423%
84	Pascagoula	MS	Fort Mill	SC	MSE-MOBIL-NS	2815112	$2,040	0 9867	$2,013	$3,623	$4 068	202%
85	Pascagoula	MS	Lemoyne	AL	MSF MOBIL-NS	2815112	$276	0 9867	$273	$491	$1,092	401%
86	Strang	TX	Lemoyne	AI	UP-NEWOR-NS	2812350	$1 742	0 9867	$1,719	$3,095	$4,003	233%
87	Beauharnois	PQ	Edgemoor	DE	CSXT-BUFF-NS	2812815	$1,409	0 9867	$1,391	$2,503	xxx	xxx
88	Removed											
89	Belle	WV	Gainesville	GA	NS-CINTI-CSXT	2813980	$1,418	0 9867	$1 399	$2,519	xxx	xxx
90	Belle	WV	Port Bienville	MS	NS-ATLA CSXT-ANSLE-PBVR	2813934	$2,384	0 9867	$2,353	$4 235	xxx	xxx
91	Belle	WV	Theodore	AL	NS-CINTI-CSXT	2813934	$1 409	0 9867	$1,391	$2,503	xxx	xxx
92	Bellwood	VA	Dallas	GA	CSXT-PTRSB NS	2819315	$2,205	0 9867	$2,176	$3,917	xxx	xxx
93	Bellwood	VA	Fort Mill	SC	CSXT CHLTE-NS	2819315	$563	0.9867	$555	$1,000	xxx	xxx
94	Bellwood	VA	Rockwell	NC	CSXT-PTRSB-NS	2819315	$944	0 9867	$932	$1,677	xxx	xxx
95	Removed											
96	Danville	VA	Amphill	VA	NS PTRSB-CSXT	3274110	$626	0 9867	$617	$1,111	xxx	xxx
97	Edgemoor	DE	New Johnsonville	TN	NS-CINTI-CSXT	2816130	$2,066	0 9867	$2,039	$3,670	xxx	xxx
98	Enid	OK	Edgemoor	DE	BNSF ESTL-NS	2991315	$3,043	0.9867	$3,003	$5,404	xxx	xxx
99	Loudon	TN	Orangers	NC	NS-CHATT-CSXT	2818512	$563	0 9867	$555	$999	xxx	xxx
100	Loudon	TN	Orangers	NC	NS-CHATI-CSXT	2818512	$431	0 9867	$425	$765	xxx	xxx
101	Miami Fort	OH	Dallas	GA	CSXT-CINTI-NS	2819315	$1,499	0 9867	$1,479	$2,662	xxx	xxx
102	Miami Fort	OH	Gracewood	GA	CSXT-CHATT NS	2819325	$1,353	0.9867	$1,335	$2,403	xxx	xxx
103	Miami Fort	OH	McIntosh	AL	CSXT CHATT NS	2819340	$955	0 9867	$942	$1,696	xxx	xxx
104	Removed											
105	Removed											
106	Miami Fort	OH	Pepper	VA	CSXT-CINTI-NS	2819345	$2,006	0 9867	$1,979	$3,562	xxx	xxx
107	Natrium	WV	Belle	WV	CSXT-CINTI-NS	2812220	$1,452	0 9867	$1,433	$2,579	xxx	xxx
108	Natrium	WV	Danville	VA	CSXT-LYNCH NS	2812220	$375	0.9867	$370	$665	xxx	xxx
109	New Johnsonville	TN	Chapman	PA	CSXT-CINTI-NS	2816130	$2 051	0 9867	$2,023	$3,642	xxx	xxx
110	Removed											
111	New Johnsonville	TN	Monroe	GA	CSXT-CHATT-NS	2816130	$657	0 9867	$649	$1 167	xxx	xxx
112	Niagara Falls	NY	Belle	WV	CSXT-CLMBO-NS	2812220	$727	0 9867	$717	$1 291	xxx	xxx
113	Niagara Falls	NY	Edgemoor	DE	CSXT-BUFF NS	2812815	$1 422	0 9867	$1 403	$2,526	xxx	xxx
114	Niagara Falls	NY	Edgemoor	DE	CSXT BUFT-NS	2812220	$1,448	0 9867	$1,429	$2,573	xxx	xxx
115	Pascagoula	MS	Fort Mill	SC	CSXT-ATLA-NS	2815112	$1,167	0 9867	$1,152	$2,073	xxx	xxx
116	Starke	FI	Huntsville	AL	CSXT-DCTUR NS	1441325	$281	0 9867	$278	$500	xxx	xxx
117	Starke	FL	Huntsville	AL	CSXT-DCTUR-NS	1441325	$449	0 9867	$443	$815	xxx	xxx
118	Wurtland	KY	Fort Mill	SC	CSXT CHLTE-NS	2819315	$565	0.9867	$558	$1,004	xxx	xxx
119	Wurtland	KY	McIntosh	AL	CSXT BHAM NS	2819315	$764	0 9867	$754	$1,358	xxx	xxx
120	Belle	WV	Divine	IL	NS PINE-CN	2813980	$1,456	0 9867	$1,436	$2,586	xxx	xxx
121	Belle	WV	Mapleton	IL	NS-LUGPT-IPW	2813934	$1,295	0 9867	$1,277	$2,299	xxx	xxx
122	Burnside	LA	Gracewood	GA	CN-NEWOR-NS	2819325	$1,874	0 9867	$1,849	$3,328	xxx	xxx
123	Lemont	IL	Edgemoor	DE	BNSF-CHGO NS	2991315	$2,604	0 9867	$2,569	$4,623	xxx	xxx
124	New Johnsonville	TN	McDonough	GA	CSXT-CHATT NS	2816130	$921	0 9867	$909	$1,636	$2,951	325%
125	Charleston	TN	Woodstock	TN	NS-MEMPH-CN	2812410	$1 045	0 9867	$1,031	$1,856	xxx	xxx
126	Reybold	DE	Albuquerque	NM	NS-STRTR-BNSF	2819315	$2 248	0 9867	$2 218	$3,993	xxx	xxx
127	Reybold	DE	Baltimore	MD	NS BALBV-CSXT	2819315	$383	0 9867	$378	$680	xxx	xxx
128	Reybold	DE	Blair	NE	NS-CHGO-UP	2819315	$2,087	0 9867	$2,059	$3,706	xxx	xxx
129	Reybold	DE	Brewton	AL	NS BHAM-CSXT	2819315	$2,358	0 9867	$2,327	$4 188	xxx	xxx
130	Reybold	DE	Castle Hayne	NC	NS CHLTE-CSXT	2819315	$1 636	0 9867	$1,614	$2 906	xxx	xxx
131	Reybold	DE	Clifton	AZ	NS-KCITY-UP	2819315	$3 000	0 9867	$2,960	$5,328	xxx	xxx
132	Reybold	DE	Corson	SD	NS-CHGO-BNSF	2819315	$2,086	0.9867	$2,058	$3,705	xxx	xxx
133	Removed											
134	Reybold	DE	Ferguson	MS	NS-MEMPHIS-CN	2819315	$2,724	0.9867	$2,688	$4,838	xxx	xxx
135	Reybold	DE	Hastings	NE	NS-CHGO-BNSF	2819315	$2 086	0 9867	$2,058	$3,705	xxx	xxx
136	Reybold	DE	Indianapolis	IN	NS-CINTI-CSXT	2819315	$1 881	0 9867	$1,856	$3,340	xxx	xxx
137	Reybold	DE	Omaha	NE	NS-CHGO UP	2819315	$2,086	0 9867	$2,059	$3,706	xxx	xxx
138	Reybold	DE	Orange	TX	NS-ESTL-BNSF	2819315	$2,491	0.9867	$2,458	$4,424	xxx	xxx
139	Reybold	DE	Phoenix	AZ	NS STRTR-BNSF	2819315	$2,248	0.9867	$2,218	$3 992	xxx	xxx
140	Reybold	DE	Sioux City	IA	NS-CHGO-BNSF	2819315	$2,086	0 9867	$2,058	$3 705	xxx	xxx
141	Reybold	DE	Toledo	OH	NS-TOLED-CSXT	2819315	$2,033	0 9867	$2,006	$3,610	xxx	xxx
142	Reybold	DE	Washington	WV	NS-HAGTN-CSXT	2819315	$629	0 9867	$620	$1,117	xxx	xxx

1/ Column (5) x Column (6)
2/ Column (7) x 1 8
3/ Tariff Rate from Rebuttal Exhibit II-A-16
4/ Column (9)/Column (7)

TAB 2

Variable Cost, Jurisdictional Threshold, Tariff Rate and
Revenue/Variable Cost Ratios Per Car for DuPont Movements - 3Q09

	Origin City (1)	ST	Destination City (2)	ST	Railroad(s) (3)	Commodity (4)	Phase III Cost Base Year 2002 (5)	Index to 3Q09 (6)	Phase III Cost 1/ (7)	3Q2009 Jurisdictional Threshold 2/ (8)	Tariff Rate 3/ (9)	Revenue/Variable Cost Ratio 4/ (10)
Exhibit A - Loyal Movers												
1	Removed											
2	Bayway	NJ	Waynesville	NC	NS	2819315	$2,272	1.0077	$2,289	$4,121	xxx	xxx
3	Belle	WV	Danville	IL	NS	2813980	$1,656	1.0077	$1,669	$3,004	xxx	xxx
4	Removed											
5	Removed											
6	Removed											
7	Removed											
8	Removed											
9	Belle	WV	Wyandotte	MI	NS	2813934	$1,238	1.0077	$1,248	$2,246	xxx	xxx
10	Charleston	TN	Edgemoor	DE	NS	2812815	$2,253	1.0077	$2,270	$4,086	xxx	xxx
11	Edgemoor	DE	Chicago	IL	NS	2816130	$2,251	1.0077	$2,268	$4,083	xxx	xxx
12	Edgemoor	DE	Chillicothe	OH	NS	2816130	$2,192	1.0077	$2,209	$3,976	xxx	xxx
13	Edgemoor	DE	Mobil	AL	NS	2816130	$2,895	1.0077	$2,917	$5,251	xxx	xxx
14	Edgemoor	DE	Riverwood Intl	GA	NS	2816130	$2,627	1.0077	$2,647	$4,765	xxx	xxx
15	Edgemoor	DE	Wabash	IN	NS	2816130	$2,304	1.0077	$2,322	$4,179	xxx	xxx
16	Lemoyne	AL	Grant	SC	NS	4810560	$2,363	1.0077	$2,381	$4,286	xxx	xxx
17	Loudon	TN	Braithwaite	LA	NS	2818512	$1,926	1.0077	$1,941	$3,493	xxx	xxx
18	Louisville	KY	Decatur	IL	NS	2819450	$1,238	1.0077	$1,248	$2,246	xxx	xxx
19	Louisville	KY	Lafayette	IN	NS	2819450	$1,548	1.0077	$1,560	$2,808	xxx	xxx
20	Removed											
21	Removed											
22	McIntosh	AL	Lemoyne	AL	NS	2812220	$494	1.0077	$498	$896	xxx	xxx
23	Reybold	DE	Detroit	MI	NS	2819315	$1,804	1.0077	$1,818	$3,272	xxx	xxx
24	Reybold	DE	Fort Mill	SC	NS	2819315	$1,808	1.0077	$1,822	$3,280	xxx	xxx
25	Reybold	DE	Morrisville	PA	NS	2819315	$572	1.0077	$576	$1,037	xxx	xxx
Exhibit B - Joint Movers												
1	Belle	WV	Anaheim	CA	NS-CHGO-UP	2813980	$1,546	1.0077	$1,558	$2,804	$7,715	495%
2	Belle	WV	Bayport	TX	NS-ESTL-UP	2818620	$1,940	1.0077	$1,955	$3,519	$4,851	248%
3	Removed											
4	Belle	WV	Brownsville	TX	NS ESTL-UP	2818221	$1,920	1.0077	$1,935	$3,483	$4,851	251%
5	Belle	WV	Burley	ID	NS-CHGO-UP	2813934	$1,546	1.0077	$1,558	$2,804	$7,715	495%
6	Belle	WV	Cadet	MO	NS KCITY-UP	2811934	$2,403	1.0077	$2,421	$4,358	$8,086	334%
7	Removed											
8	Belle	WV	Channelview	TX	NS ESTL-UP	2818130	$1,779	1.0077	$1,793	$3,227	$5,019	280%
9	Belle	WV	City of Commerce	CA	NS-STRTR BNSF	2818221	$1,677	1.0077	$1,689	$3,041	$8,561	507%
10	Belle	WV	Conroe	TX	NS-ESTL-BNSF	2813934	$1,915	1.0077	$1,930	$3,474	$8,093	419%
11	Belle	WV	Corsicana	TX	NS-ESTL-UP	2813934	$1,819	1.0077	$1,833	$3,300	$8,093	441%
12	Removed											
13	Belle	WV	East Billings	MT	NS-CHGO-BNSF	2818130	$1,526	1.0077	$1,538	$2,768	$5,516	359%
14	Belle	WV	Ethyl	AR	NS ESTL-UP-MCNEIL-UNW	2813934	$1,834	1.0077	$1,848	$3,327	$8,093	438%
15	Belle	WV	Finley	WA	NS-CHGO-BNSF	2813934	$1,546	1.0077	$1,558	$2,805	$7,715	495%
16	Removed											
17	Belle	WV	Freeport	TX	NS ESTL-UP	2818130	$1,694	1.0077	$1,707	$3,072	$4,851	284%
18	Belle	WV	Garyville	LA	NS NEWOR-CN	2813934	$2,756	1.0077	$2,777	$4,998	$10,560	380%
19	Belle	WV	Geismar	LA	NS-NEWOR-CN	2813934	$2,523	1.0077	$2,542	$4,576	$10,560	415%
20	Belle	WV	Janesville	WI	NS-CHGO-UP	2818131	$1,518	1.0077	$1,530	$2,753	$7,715	504%
21	Belle	WV	Laredo	TX	NS-ESTL-UP	2818221	$1,920	1.0077	$1,935	$3,483	$4,851	251%
22	Belle	WV	Laredo	TX	NS-ESTL-UP	2818131	$1,920	1.0077	$1,935	$3,483	$8,093	418%
23	Belle	WV	Lorenzo	IL	NS-CHGO-BNSF	2813980	$1,529	1.0077	$1,541	$2,774	$7,715	501%
24	Belle	WV	Los Angeles	CA	NS STRTR-BNSF	2813934	$1,722	1.0077	$1,735	$3,124	$6,649	383%
25	Belle	WV	Los Angeles	CA	NS-CHGO-UP	2818130	$1,535	1.0077	$1,547	$2,785	$5,324	344%
26	Removed											
27	Belle	WV	Milkdale	IL	NS-CHGO-CN	2818131	$1,520	1.0077	$1,531	$2,757	$7,715	504%
28	Removed											
29	Belle	WV	Saint Paul	MN	NS-CHGO-BNSF	2818221	$1,681	1.0077	$1,694	$3,049	$5,411	319%
30	Belle	WV	San Dimas	CA	NS CHGO UP	2813980	$1,653	1.0077	$1,665	$2,997	$7,715	463%
31	Removed											
32	Belle	WV	St Gabriel	LA	NS-NEWOR-CN	2813934	$2,739	1.0077	$2,760	$4,968	$10,560	383%
33	Belle	WV	St Joseph	MO	NS KCITY-UP	2818130	$2,396	1.0077	$2,415	$4,347	$6,465	268%
34	Removed											
35	Belle	WV	Sarang	TX	NS-ESTL-UP	2818221	$1,992	1.0077	$2,008	$3,614	$4,778	238%
36	Belle	WV	Sarang	TX	NS-ESTL-BNSF	2813934	$1,643	1.0077	$1,656	$2,981	$8,093	489%
37	Belle	WV	Sarang	TX	NS-ESTL-UP	2819183	$1,765	1.0077	$1,778	$3,200	$4,157	234%
38	Removed											
39	Belle	WV	Texas City	TX	NS ESTL-UP	2813934	$1,834	1.0077	$1,848	$3,327	$8,093	438%
40	Belle	WV	Verona	MO	NS-ESTL-BNSF	2813934	$1,902	1.0077	$1,917	$3,450	$8,093	422%
41	Belle	WV	West Memphis	AR	NS KCITY UP	2813934	$2,394	1.0077	$2,413	$4,343	$7,875	326%
42	Belle	WV	Wynford Spur	LA	NS MERID-KCS	2813980	$2,316	1.0077	$2,334	$4 201	$8 939	383%
43	Belle	WV	Wichita	KS	NS-ESTL-BNSF	2813934	$1,942	1.0077	$1,956	$3,521	$8,093	414%
44	Bloomington	TX	Greenville	SC	UP-NEWOR-NS	2821142	$1,658	1.0077	$1,670	$3,007	$5,713	342%
45	Bloomington	TX	Washington Warren	NJ	UP-ESTL-NS	2821142	$2,307	1.0077	$2,324	$4,184	$9,013	388%
46	Removed											
47	Charleston Bradley	TN	Woodstock	TN	NS-MEMPH-CN	2812220	$1,059	1.0077	$1,067	$1,920	$1 911	179%
48	Cresap	WV	Edgemoor	DE	CSXT HAGTN-NS	2991315	$647	1.0077	$652	$1,174	$2,341	359%
49	Dowling	TX	Fort Mill	SC	KCS-MERID NS	2815112	$1,750	1.0077	$1,763	$3,174	$4,450	252%
50	Edgemoor	DE	Garland	TX	NS-MERID-KCS	2816130	$2 824	1.0077	$2,846	$5,123	$7,028	247%
51	Edgemoor	DE	Gross	MI	NS-CHGO-CN	2816130	$2,158	1.0077	$2,174	$3,914	$5,814	267%
52	Edgemoor	DE	Laredo	TX	NS ESTL-UP	2816130	$2 907	1.0077	$2,929	$4 538	$6 093	242%
53	Edgemoor	DE	Madawaska	ME	NS ROUPT-CN	2816130	$1,290	1.0077	$1,300	$2,340	$3,677	283%
54	Edgemoor	DE	Pasadena	TX	NS ESTL-UP	2819971	$2,451	1.0077	$2,469	$4 445	$11,817	479%
55	Edgemoor	DE	Port Huron	MI	NS-BUFF-CN	2816130	$1,679	1.0077	$1,692	$3,046	$4 880	288%
56	Edgemoor	DE	Portland	ME	NS MCV PAS-AYERM ST	2816130	$1,287	1.0077	$1,297	$2,335	$3,392	261%
57	Edgemoor	DE	Portland	OR	NS-CHGO-BNSF	2816130	$2,180	1.0077	$2,196	$3 954	$5 779	265%
58	Edgemoor	DE	Quinnesec	MI	NS-CHGO-CN	2816130	$2,158	1.0077	$2,174	$3,914	$6,095	280%
59	Edgemoor	DE	Raleys	ME	NS-MCV-PAS-AYERM-ST	2816130	$1,291	1.0077	$1,301	$2,342	$3,362	258%
60	Edgemoor	DE	Rumford	ME	NS-MCV PAS-AYERM ST	2816130	$1 287	1.0077	$1,297	$2,335	$3 433	265%
61	Removed											
62	Edgemoor	DE	Shawmut	ME	NS-MCV-PAS-AYERM ST	2816130	$1 289	1.0077	$1,299	$2,338	$3 514	271%

Variable Cost, Jurisdictional Threshold, Tariff Rate and
Revenue/Variable Cost Ratios Per Car for DuPont Movements - 3Q09

	Origin City (1)	ST	Destination City (2)	ST	Railroad(s) (3)	Commodity (4)	Phase III Cost Base Year 2009 (5)	Index to 3Q09 (6)	Phase III Cost 1/ (7)	3Q2009 Jurisdictional Threshold 2/ (8)	Tariff Rate 3/ (9)	Revenue/Variable Cost Ratio 4/ (10)
63	Edgemoor	DE	Seeley	CA	NS-CHGO UP	2816130	$2,184	1.0077	$2,201	$3,961	$5,824	265%
64	Edgemoor	DE	Seeley	CA	NS STRTR BNSF	2816130	$2,350	1.0077	$2,368	$4,262	$5,101	215%
65	Edgemoor	DE	St Paul	MN	NS-CHGO-UP	2816130	$2,181	1.0077	$2,198	$3,956	$5,993	273%
66	Removed											
67	Edgemoor	DE	West Monroe	LA	NS-MERID-KCS	2816130	$2,831	1.0077	$2,852	$5,134	$6,863	241%
68	Edgemoor	DE	Wheeling	IL	NS-CHGO-CN	2816130	$2,171	1.0077	$2,187	$3,937	$6,037	276%
69	Enid	OK	Edgemoor	DE	BNSF-ESTL-NS	2991315	$2,482	1.0077	$2,501	$4,502	$5,364	214%
70	Removed											
71	Gregory	TX	Dragon	MS	UP-NEWOR NS	2813984	$500	1.0077	$504	$907	$2,373	471%
72	Removed											
73	Gregory	TX	Royce	NJ	UP-ESTL-NS	2813984	$2,639	1.0077	$2,659	$4,786	$10,123	381%
74	Removed											
75	Lemont	IL	Edgemoor	DE	BNSF-CHGO NS	2991315	$2,081	1.0077	$2,097	$3,775	$4,659	222%
76	Lemoyne	AL	Artesia	MS	NS MERID-KCS	4810560	$1,241	1.0077	$1,251	$2,251	$3 958	316%
77	McIntosh	AL	Burnside	LA	NS-MOBIL-CN	2819310	$316	1.0077	$318	$573	$1 296	408%
78	McIntosh	AL	Delisle	MS	NS-MOBIL-CN HATBG-KCS	2812815	$320	1.0077	$322	$580	$1 982	616%
79	McIntosh	AL	Delisle	MS	NS MOBIL-CN HATBG-KCS	2812220	$325	1.0077	$327	$589	$1,993	609%
80	McIntosh	AL	Orange	TX	NS-NEWOR-UP	2812220	$1,567	1.0077	$1,579	$2,843	$4,096	259%
81	McIntosh	AL	Woodstock	TN	NS-MOBIL-CN	2812220	$325	1.0077	$327	$589	$1,993	609%
82	Orange	TX	Greenville	SC	UP-NEWOR-NS	2821142	$2,025	1.0077	$2,040	$3,672	$5,713	280%
83	Orange	TX	Washington Warren	NJ	UP-ESTL-NS	2821142	$2,159	1.0077	$2,175	$3 915	$9 013	414%
84	Pascagoula	MS	Fort Mill	SC	MSE-MOBIL-NS	2815112	$2,040	1.0077	$2,055	$3,700	$4,698	229%
85	Pascagoula	MS	Lemoyne	AL	MSE-MOBIL-NS	2815112	$276	1.0077	$278	$501	$1,092	392%
86	Strang	TX	Lemoyne	AL	UP-NEWOR NS	2812350	$1 742	1.0077	$1,756	$3,160	$4 328	247%
87	Beauharnois	PQ	Edgemoor	DE	CSXT BUFF-NS	2812815	$1,409	1.0077	$1 420	$2,556	xxx	xxx
88	Removed											
89	Belle	WV	Gainesville	GA	NS-CINTI-CSXT	2813980	$1,418	1.0077	$1,429	$2,572	xxx	xxx
90	Belle	WV	Port Bienville	MS	NS ATI A CSXT-ANSLP PBVR	2813934	$2,384	1.0077	$2,403	$4 325	xxx	xxx
91	Belle	WV	Theodore	AL	NS-CINTI-CSXT	2813934	$1,409	1.0077	$1,420	$2,556	xxx	xxx
92	Bellwood	VA	Dallas	GA	CSXT PTRSB-NS	2819315	$2,205	1.0077	$2,222	$4,000	xxx	xxx
93	Bellwood	VA	Fort Mill	SC	CSXT CHI TE-NS	2819315	$563	1.0077	$567	$1,021	xxx	xxx
94	Bellwood	VA	Rockwell	NC	CSXT PTRSB-NS	2819315	$944	1.0077	$951	$1,712	xxx	xxx
95	Removed											
96	Danville	VA	Ampthill	VA	NS PTRSB CSXT	3274110	$626	1.0077	$630	$1,135	xxx	xxx
97	Edgemoor	DE	New Johnsonville	TN	NS-CINTI-CSXT	2816130	$2 066	1.0077	$2,082	$3,748	xxx	xxx
98	Enid	OK	Edgemoor	DE	BNSF-ESTL-NS	2991315	$3,043	1.0077	$3,066	$5,519	xxx	xxx
99	Loudon	TN	Grainger	NC	NS-CHATT CSXT	2818512	$563	1.0077	$567	$1,021	xxx	xxx
100	Loudon	TN	Grainger	NC	NS-CHATT-CSXT	2818512	$431	1.0077	$434	$781	xxx	xxx
101	Miami Fort	OH	Dallas	GA	CSXT CINTI NS	2819315	$1,499	1.0077	$1,510	$2 719	xxx	xxx
102	Miami Fort	OH	Gracewood	GA	CSXT CHATT-NS	2819325	$1,353	1.0077	$1,363	$2,454	xxx	xxx
103	Miami Fort	OH	McIntosh	AL	CSXT CHATT-NS	2819340	$955	1.0077	$962	$1,732	xxx	xxx
104	Removed											
105	Removed											
106	Miami Fort	OH	Pepper	VA	CSXT CINTI-NS	2819345	$2,006	1.0077	$2,021	$3,638	xxx	xxx
107	Nitrium	WV	Belle	WV	CSXT-CINTI-NS	2812220	$1 452	1.0077	$1,463	$2,634	xxx	xxx
108	Nitrium	WV	Danville	VA	CSXT LYNCH-NS	2812220	$375	1.0077	$377	$679	xxx	xxx
109	New Johnsonville	TN	Chapman	PA	CSXT-CINTI NS	2816130	$2,051	1.0077	$2,066	$3,719	xxx	xxx
110	Removed											
111	New Johnsonville	TN	Morrow	GA	CSXT-CHATT-NS	2816130	$657	1.0077	$662	$1 192	xxx	xxx
112	Niagara Falls	NY	Belle	WV	CSXT-CLMBO-NS	2812220	$727	1.0077	$732	$1 318	xxx	xxx
113	Niagara Falls	NY	Edgemoor	DE	CSXT-BUFF-NS	2812815	$1,422	1.0077	$1 433	$2,579	xxx	xxx
114	Niagara Falls	NY	Edgemoor	DE	CSXT-BUFF NS	2812220	$1,448	1.0077	$1,460	$2,627	xxx	xxx
115	Pascagoula	MS	Fort Mill	SC	CSXT-ATLA-NS	2815112	$1,167	1.0077	$1,176	$2,117	xxx	xxx
116	Starke	FL	Huntsville	AL	CSXT-DCTUR-NS	1441325	$281	1.0077	$283	$510	xxx	xxx
117	Starke	FL	Huntsville	AL	CSXT-DCTUR-NS	1441325	$459	1.0077	$463	$833	xxx	xxx
118	Worland	KY	Fort Mill	SC	CSXT-CHLTF-NS	2819315	$565	1.0077	$570	$1,026	xxx	xxx
119	Worland	KY	McIntosh	AL	CSXT BHAM NS	2819315	$764	1.0077	$770	$1,387	xxx	xxx
120	Belle	WV	Divine	IL	NS-PINE-CN	2813980	$1 456	1.0077	$1,467	$2,640	$7,502	511%
121	Belle	WV	Mapleton	IL	NS-LOGPT-TPW	2813934	$1,295	1.0077	$1 304	$2,348	$5,843	448%
122	Burnside	LA	Gracewood	GA	CN-NEWOR NS	2819325	$1,874	1.0077	$1,888	$3,399	$4,200	222%
123	Lemont	IL	Edgemoor	DE	BNSF-CHGO-NS	2991315	$2,604	1.0077	$2,624	$4,723	xxx	xxx
124	New Johnsonville	TN	McDonough	GA	CSXT-CHATT-NS	2816130	$921	1.0077	$928	$1 671	$2,951	318%
125	Charleston	TN	Woodstock	TN	NS-MEMPH-CN	2812410	$1 045	1.0077	$1 053	$1,895	xxx	xxx
126	Reybold	DE	Albuquerque	NM	NS-STRTR BNSF	2819315	$2,248	1.0077	$2,265	$4,077	xxx	xxx
127	Reybold	DE	Baltimore	MD	NS BALBV CSXT	2819315	$383	1.0077	$386	$694	xxx	xxx
128	Reybold	DE	Blair	NE	NS-CHGO-UP	2819315	$2,087	1.0077	$2,102	$3,784	xxx	xxx
129	Reybold	DE	Brewton	AL	NS BHAM-CSXT	2819315	$2,358	1.0077	$2,376	$4 277	xxx	xxx
130	Reybold	DE	Castle Hayne	NC	NS-CHLTE-CSXT	2819315	$1 636	1.0077	$1,649	$2,968	xxx	xxx
131	Reybold	DE	Clifton	AZ	NS KCITY-UP	2819315	$3,000	1.0077	$3,023	$5,441	xxx	xxx
132	Reybold	DE	Carson	SD	NS-CHGO-BNSF	2819315	$2,086	1.0077	$2,102	$3,784	xxx	xxx
133	Removed											
134	Reybold	DE	Ferguson	MS	NS-MEMPHIS-CN	2819315	$2,724	1.0077	$2,745	$4 941	xxx	xxx
135	Reybold	DE	Hastings	NE	NS CHGO BNSF	2819315	$2,086	1.0077	$2,102	$3,784	xxx	xxx
136	Reybold	DE	Indianapolis	IN	NS-CINTI CSXT	2819315	$1,881	1.0077	$1,895	$3,411	xxx	xxx
137	Reybold	DE	Omaha	NE	NS-CHGO-UP	2819315	$2,086	1.0077	$2 102	$3,784	xxx	xxx
138	Reybold	DE	Orange	TX	NS ESTL-BNSF	2819315	$2,491	1.0077	$2 510	$4,517	xxx	xxx
139	Reybold	DE	Phoenix	AZ	NS-STRTR BNSF	2819315	$2,248	1.0077	$2,265	$4,077	xxx	xxx
140	Reybold	DE	Sioux City	IA	NS-CHGO-BNSF	2819315	$2,086	1.0077	$2,102	$3,784	xxx	xxx
141	Reybold	DE	Toledo	OH	NS-TOLED-CSXT	2819315	$2,033	1.0077	$2,048	$3 687	xxx	xxx
142	Reybold	DE	Washington	WV	NS-HAGTN-CSXT	2819315	$629	1.0077	$634	$1,140	xxx	xxx

1/ Column (5) x Column (6)
2/ Column (7) x 1 8
3/ Tariff Rate from Rebuttal Exhibit II-A-16
4/ Column (9)/Column (7)

TAB 3

Variable Cost, Jurisdictional Threshold, Tariff Rate and
Revenue/Variable Cost Ratios Per Car for DuPont Movements - 4Q09

	Origin City (1)	ST	Destination City (2)	ST	Railroad(s) (3)	Commodity (4)	Phase III Cost Base Year 2009 (5)	Index to 4Q09 (6)	Phase III Cost 1/ (7)	4Q2009 Jurisdictional Threshold 2/ (8)	Tariff Rate 3/ (9)	Revenue/Variable Cost Ratio 4/ (10)
Exhibit A - Local Moves												
1	Removed											
2	Bayway	NJ	Waynesville	NC	NS	2819315	$2,372	1.0199	$2,317	$4,171	xxx	xxx
3	Belle	WV	Danville	IL	NS	2813980	$1,656	1.0199	$1,689	$3,041	xxx	xxx
4	Removed											
5	Removed											
6	Removed											
7	Removed											
8	Removed											
9	Belle	WV	Wyandotte	MI	NS	2813934	$1,238	1.0199	$1,263	$2,273	xxx	xxx
10	Charleston	TN	Edgemoor	DE	NS	2812815	$2,253	1.0199	$2,298	$4,136	xxx	xxx
11	Edgemoor	DE	Chicago	IL	NS	2816130	$2,251	1.0199	$2,296	$4,133	xxx	xxx
12	Edgemoor	DE	Chillicothe	OH	NS	2816130	$2,192	1.0199	$2,236	$4,025	xxx	xxx
13	Edgemoor	DE	Mabet	AL	NS	2816130	$2,893	1.0199	$2,953	$5,315	xxx	xxx
14	Edgemoor	DE	Riverwood Intl	GA	NS	2816130	$2,627	1.0199	$2,679	$4,822	xxx	xxx
15	Edgemoor	DE	Wabash	IN	NS	2816130	$2,304	1.0199	$2,350	$4,230	xxx	xxx
16	Lamoyne	AL	Grant	SC	NS	4810560	$2,363	1.0199	$2,410	$4,338	xxx	xxx
17	Loudon	TN	Brathwaite	LA	NS	2818312	$1,926	1.0199	$1,964	$3,536	xxx	xxx
18	Louisville	KY	Decatur	IL	NS	2819458	$1,238	1.0199	$1,263	$2,273	xxx	xxx
19	Louisville	KY	Lafayette	IN	NS	2819450	$1,548	1.0199	$1,579	$2,842	xxx	xxx
20	Removed											
21	Removed											
22	McIntosh	AL	Lamoyne	AL	NS	2812220	$494	1.0199	$504	$906	xxx	xxx
23	Reybold	DE	Detroit	MI	NS	2819315	$1,804	1.0199	$1,840	$3,312	xxx	xxx
24	Reybold	DE	Fort Mill	SC	NS	2819315	$1,806	1.0199	$1,844	$3,320	xxx	xxx
25	Reybold	DE	Morrisville	PA	NS	2819315	$572	1.0199	$583	$1,050	xxx	xxx
Exhibit B - Joint Moves												
1	Belle	WV	Anaheim	CA	NS-CHGO UP	2813980	$1,546	1.0199	$1,577	$2,838	$7,715	489%
2	Belle	WV	Bayport	TX	NS-ESTL-UP	2818620	$1,940	1.0199	$1,979	$3,562	$5,500	278%
3	Removed											
4	Belle	WV	Brownsville	TX	NS ESTL-UP	2818221	$1,920	1.0199	$1,958	$3,525	$5,500	281%
5	Belle	WV	Burley	ID	NS-CHGO-UP	2813934	$1,546	1.0199	$1,577	$2,838	$7,715	489%
6	Belle	WV	Cadet	MO	NS-KCITY-UP	2813934	$2,403	1.0199	$2,451	$4,411	$7,875	321%
7	Removed											
8	Belle	WV	Channelview	TX	NS ESTL-UP	2818130	$1,779	1.0199	$1,815	$3,266	$5,500	303%
9	Belle	WV	City of Commerce	CA	NS-STRTR BNSF	2818221	$1,677	1.0199	$1,710	$3,078	$8,561	501%
10	Belle	WV	Conroe	TX	NS ESTL-BNSF	2813934	$1,915	1.0199	$1,953	$3,516	$8,093	414%
11	Belle	WV	Corpus	TX	NS-ESTL-UP	2813934	$1,819	1.0199	$1,855	$3,340	$8,093	436%
12	Removed											
13	Belle	WV	East Billings	MT	NS-CHGO-BNSF	2816130	$1,526	1.0199	$1,556	$2,801	$5,900	379%
14	Belle	WV	Ethy'	AR	NS ESTL-UP-MCNEI LNW	2813934	$1,834	1.0199	$1,871	$3,367	$8,093	433%
15	Belle	WV	Finley	WA	NS-CHGO-BNSF	2813934	$1,546	1.0199	$1,577	$2,839	$7,715	489%
16	Removed											
17	Belle	WV	Freeport	TX	NS-ESTL-UP	2818130	$1,694	1.0199	$1,727	$3,109	$5,500	318%
18	Belle	WV	Garyville	LA	NS-NEWOR-CN	2813934	$2,756	1.0199	$2,810	$5,058	$10,560	376%
19	Belle	WV	Geismar	LA	NS-NEWOR-CN	2813934	$2,523	1.0199	$2,573	$4,632	$10,560	410%
20	Belle	WV	Janesville	WI	NS-CHGO UP	2816131	$1,518	1.0199	$1,548	$2,787	$7,715	498%
21	Belle	WV	Laredo	TX	NS-ESTL-UP	2818221	$1,920	1.0199	$1,958	$3,525	$5,500	281%
22	Belle	WV	Laredo	TX	NS ESTL-UP	2818131	$1,920	1.0199	$1,958	$3,525	$8,093	413%
23	Belle	WV	Lorenzo	IL	NS-CHGO-BNSF	2813980	$1,529	1.0199	$1,560	$2,808	$7,715	493%
24	Belle	WV	Los Angeles	CA	NS-STRTR-BNSF	2813934	$1,722	1.0199	$1,756	$3,161	$8,649	379%
25	Belle	WV	Los Angeles	CA	NS-CHGO-UP	2818130	$1,535	1.0199	$1,566	$2,818	$5,900	377%
26	Removed											
27	Belle	WV	Millsdale	IL	NS-CHGO-CN	2818131	$1,520	1.0199	$1,550	$2,790	$7,715	498%
28	Removed											
29	Belle	WV	Saint Paul	MN	NS CHGO-BNSF	2818221	$1,681	1.0199	$1,715	$3,086	$8,900	344%
30	Belle	WV	San Dimas	CA	NS-CHGO-UP	2813980	$1,653	1.0199	$1,685	$3,034	$7,715	458%
31	Removed											
32	Belle	WV	St Gabriel	LA	NS NEWOR-CN	2813934	$2,739	1.0199	$2,793	$5,028	$10,560	378%
33	Belle	WV	St Joseph	MO	NS-KCITY UP	2818130	$2,396	1.0199	$2,444	$4,399	$6,465	265%
34	Removed											
35	Belle	WV	Sirsng	TX	NS ESTL-UP	2818221	$1,992	1.0199	$2,032	$3,658	$5,500	271%
36	Belle	WV	Sirsng	TX	NS ESTL-BNSF	2813934	$1,643	1.0199	$1,676	$3,017	$8,093	483%
37	Belle	WV	Sirsng	TX	NS-ESTL-UP	2819183	$1,765	1.0199	$1,800	$3,239	$4,157	231%
38	Removed											
39	Belle	WV	Texas City	TX	NS-ESTL-UP	2813934	$1,834	1.0199	$1,870	$3,367	$8,093	433%
40	Belle	WV	Verona	MO	NS-ESTL-BNSF	2813934	$1,902	1.0199	$1,940	$3,492	$8,093	417%
41	Belle	WV	West Memphis	AR	NS KCITY-UP	2813934	$2,394	1.0199	$2,442	$4,395	$7,875	322%
42	Belle	WV	Winfield Spur	LA	NS-MERID-KCS	2813980	$2,316	1.0199	$2,362	$4,252	$8,939	378%
43	Belle	WV	Wichita	KS	NS ESTL-BNSF	2813934	$1,942	1.0199	$1,980	$3,564	$8,093	409%
44	Bloomington	TX	Greenville	SC	UP-NEWOR NS	2821142	$1,658	1.0199	$1,691	$3,043	$5,713	338%
45	Bloomington	TX	Washington, Warren	NJ	UP-ESTL-NS	2821142	$2,307	1.0199	$2,352	$4,234	$9,013	383%
46	Removed											
47	Charleston, Bradley	TN	Woodstock	TN	NS-MEMPH-CN	2812220	$1,059	1.0199	$1,080	$1,943	$1,911	177%
48	Cresap	WV	Edgemoor	DE	CSXT-HAGTN-NS	2991315	$647	1.0199	$660	$1,188	$2,341	355%
49	Dowling	TX	Fort Mill	SC	KCS-MERID-NS	2815172	$1,750	1.0199	$1,785	$3,212	$4,450	249%
50	Edgemoor	DE	Garland	TX	NS-MERID-KCS	2816130	$2,824	1.0199	$2,881	$5,185	$8,200	285%
51	Edgemoor	DE	Gross	MI	NS CHGO-CN	2816130	$2,158	1.0199	$2,201	$3,961	$6,500	295%
52	Edgemoor	DE	Laredo	TX	NS-ESTL-UP	2816130	$2,502	1.0199	$2,551	$4,592	$8,093	239%
53	Edgemoor	DE	Madawaska	ME	NS ROUPT CN	2816130	$1,290	1.0199	$1,316	$2,369	$4,000	304%
54	Edgemoor	DE	Pasadena	TX	NS-ESTL-UP	2819971	$2,451	1.0199	$2,499	$4,499	$13,000	544%
55	Edgemoor	DE	Port Huron	MI	NS BUFF-CN	2816130	$1,679	1.0199	$1,713	$3,083	$4,880	285%
56	Edgemoor	DE	Portland	ME	NS MCV PAS-AYERM-ST	2816130	$1,287	1.0199	$1,313	$2,364	$4,000	305%
57	Edgemoor	DE	Portland	OR	NS-CHGO-BNSF	2816130	$2,180	1.0199	$2,223	$4,002	$6,500	292%
58	Edgemoor	DE	Quinnesec	MI	NS-CHGO-CN	2816130	$2,158	1.0199	$2,201	$3,961	$6,500	295%
59	Edgemoor	DE	Raleys	ME	NS-MCV PAS-AYERM ST	2816130	$1,291	1.0199	$1,317	$2,371	$4,000	304%
60	Edgemoor	DE	Rumford	ME	NS MCV PAS AYERM ST	2816130	$1,287	1.0199	$1,313	$2,363	$4,000	305%
61	Removed											
62	Edgemoor	DE	Shawmut	ME	NS MCV-PAS AYERM-ST	2816130	$1,289	1.0199	$1,314	$2,366	$4,000	304%

Variable Cost, Jurisdictional Threshold, Tariff Rate and
Revenue/Variable Cost Ratios Per Car for DuPont Movements - 4Q09

	Origin City (1)	ST	Destination City (2)	ST	Railroad(s) (3)	Commodity (4)	Phase III Cost Rate Year 2009 (5)	Index to 4Q09 (6)	Phase III Cost 1/ (7)	4Q2009 Jurisdictional Threshold 2/ (8)	Tariff Rate 3/ (9)	Revenue/Variable Cost Ratio 4/ (10)
63	Edgemoor	DE	Smoky	CA	NS-CHGO UP	2816130	$2,184	1.0199	$2,227	$4,009	$6,500	292%
64	Edgemoor	DE	Smoky	CA	NS-STRTR-BNSF	2816130	$2,350	1.0199	$2,396	$4,313	$5,101	213%
65	Edgemoor	DE	St Paul	MN	NS-CHGO-UP	2816130	$2,181	1.0199	$2,225	$4,004	$6,500	292%
66	Removed											
67	Edgemoor	DE	West Monroe	LA	NS MERID KCS	2816130	$2,821	1.0199	$2 877	$5,196	$8,200	284%
68	Edgemoor	DE	Wheeling	IL	NS-CHGO-CN	2816130	$2,171	1.0199	$2,214	$3,985	$6,500	294%
69	Enid	OK	Edgemoor	DE	BNSF ESTL-NS	2991315	$2,482	1.0199	$2,531	$4,556	$5,364	212%
70	Removed											
71	Gregory	TX	Dragon	MS	UP-NEWOR-NS	2813984	$500	1.0199	$510	$917	$2,373	466%
72	Removed											
73	Gregory	TX	Royce	NJ	UP-ESTL-NS	2813984	$2,639	1.0199	$2,691	$4,844	$10,121	376%
74	Removed											
75	Lamont	IL	Edgemoor	DE	BNSF-CHGO-NS	2991315	$2,081	1.0199	$2 123	$3,821	$4,905	231%
76	Lamoyne	AL	Artesia	MS	NS MERID-KCS	4810560	$1 241	1.0199	$1 266	$2,279	$4,800	379%
77	McIntosh	AL	Burnside	LA	NS-MOBIL-CN	2819330	$316	1.0199	$322	$580	$1,603	498%
78	McIntosh	AL	Delisle	MS	NS MOBIL-CN HATBG-KCS	2812815	$320	1.0199	$326	$587	$1,700	522%
79	McIntosh	AL	Delisle	MS	NS MOBIL-CN HATBG-KCS	2812220	$325	1.0199	$331	$597	$1,500	453%
80	McIntosh	AL	Orange	TX	NS-NEWOR UP	2812220	$1 567	1.0199	$1 598	$2,877	$5,000	313%
81	McIntosh	AL	Woodstock	TN	NS-MOBIL-CN	2812220	$325	1.0199	$331	$596	$1,500	453%
82	Orange	TX	Greenville	SC	UP NEWOR NS	2821142	$2 025	1.0199	$2,065	$3,717	$5,713	277%
83	Orange	TX	Washington Warren	NJ	UP ESTL-NS	2821142	$2,159	1.0199	$2,202	$3,963	$9,013	409%
84	Pascagoula	MS	Fort Mill	SC	MSE-MOBIL-NS	2815112	$2,040	1.0199	$2,080	$3,745	$6,000	288%
85	Pascagoula	MS	Lamoyne	AL	MSE-MOBIL NS	2815112	$276	1.0199	$282	$507	$1,092	388%
86	Streng	TX	Lamoyne	AL	UP-NEWOR NS	2812350	$1 742	1.0199	$1 777	$3,199	$5,000	281%
87	Beauharnois	PQ	Edgemoor	DE	CSXT-BUFF NS	2812815	$1 409	1.0199	$1 437	$2,587	xxx	xxx
88	Removed											
89	Belle	WV	Gainesville	GA	NS-CINTI CSXT	2813980	$1,418	1.0199	$1 446	$2,603	xxx	xxx
90	Belle	WV	Port Bienville	MS	NS ATLA-CSXT-ANSLE PBVR	2813934	$2,384	1.0199	$2,432	$4,377	xxx	xxx
91	Belle	WV	Theodore	AL	NS-CINTI-CSXT	2813934	$1,409	1.0199	$1,437	$2,587	xxx	xxx
92	Bellwood	VA	Dallas	GA	CSXT PTRSB-NS	2819315	$2,205	1.0199	$2 249	$4,048	xxx	xxx
93	Bellwood	VA	Fort Mill	SC	CSXT-CHLTE-NS	2819315	$563	1.0199	$574	$1,033	xxx	xxx
94	Bellwood	VA	Rockwell	NC	CSXT PTRSB NS	2819315	$944	1.0199	$963	$1,733	xxx	xxx
95	Removed											
96	Danville	VA	Ampthill	VA	NS-PTRSB-CSXT	3274130	$626	1.0199	$638	$1 149	xxx	xxx
97	Edgemoor	DE	New Johnsonville	TN	NS-CINTI-CSXT	2816130	$2,066	1.0199	$2,107	$3,793	xxx	xxx
98	Enid	OK	Edgemoor	DE	BNSF ESTL-NS	2991315	$3,043	1.0199	$3 103	$5,586	xxx	xxx
99	Loudon	TN	Grainger	NC	NS-CHATT-CSXT	2818512	$563	1.0199	$574	$1,033	xxx	xxx
100	Loudon	TN	Grainger	NC	NS-CHATT-CSXT	2818512	$431	1.0199	$439	$791	xxx	xxx
101	Miami Fort	OH	Dallas	GA	CSXT CINTI NS	2819315	$1 499	1.0199	$1 529	$2,752	xxx	xxx
102	Miami Fort	OH	Gracewood	GA	CSXT-CHATT-NS	2819325	$1,353	1.0199	$1,380	$2 484	xxx	xxx
103	Miami Fort	OH	McIntosh	AL	CSXT-CHATT-NS	2819340	$955	1.0199	$974	$1,753	xxx	xxx
104	Removed											
105	Removed											
106	Miami Fort	OH	Pepper	VA	CSXT-CINTI NS	2819345	$2,006	1.0199	$2,046	$3,682	xxx	xxx
107	Nitrium	WV	Belle	WV	CSXT-CINTI NS	2812220	$1 452	1.0199	$1,481	$2,666	xxx	xxx
108	Nitrium	WV	Danville	VA	CSXT LYNCH-NS	2812220	$375	1.0199	$382	$688	xxx	xxx
109	New Johnsonville	TN	Chapman	PA	CSXT-CINTI NS	2816130	$2,051	1.0199	$2,091	$3,764	xxx	xxx
110	Removed											
111	New Johnsonville	TN	Morrow	GA	CSXT-CHATT-NS	2816130	$657	1.0199	$670	$1,207	xxx	xxx
112	Niagara Falls	NY	Belle	WV	CSXT-CLMBO-NS	2812220	$727	1.0199	$741	$1,334	xxx	xxx
113	Niagara Falls	NY	Edgemoor	DE	CSXT BUFF-NS	2812815	$1 422	1.0199	$1,450	$2,610	xxx	xxx
114	Niagara Falls	NY	Edgemoor	DE	CSXT BUFF-NS	2812220	$1 448	1.0199	$1,477	$2,659	xxx	xxx
115	Pascagoula	MS	Fort Mill	SC	CSXT-ATLA NS	2815112	$1,167	1.0199	$1,191	$2,143	xxx	xxx
116	Starke	FL	Huntsville	AL	CSXT DCTUR NS	1441325	$281	1.0199	$287	$516	xxx	xxx
117	Starke	FL	Huntsville	AL	CSXT-DCTUR-NS	1441325	$459	1.0199	$468	$843	xxx	xxx
118	Wurtland	KY	Fort Mill	SC	CSXT-CHLTE-NS	2819315	$565	1.0199	$577	$1,038	xxx	xxx
119	Wurtland	KY	McIntosh	AL	CSXT-BHAM NS	2819315	$764	1.0199	$780	$1 453	xxx	xxx
120	Belle	WV	Divine	IL	NS-PINE-CN	2813980	$1,456	1.0199	$1 485	$2 672	$7 502	505%
121	Belle	WV	Mapleton	IL	NS LOGPT-TPW	2813934	$1 295	1.0199	$1,320	$2,376	$5 843	443%
122	Burnside	LA	Gracewood	GA	CN NEWOR NS	2819325	$1 874	1.0199	$1,911	$3,440	$4 200	220%
123	Lamont	IL	Edgemoor	DE	BNSF-CHGO NS	2991315	$2,604	1.0199	$2,656	$4,780	$5,641	212%
124	New Johnsonville	TN	McDonough	GA	CSXT-CHATT NS	2816130	$921	1.0199	$940	$1,691	$2 951	314%
125	Charleston	TN	Woodstock	TN	NS-MEMPH-CN	2812410	$1,045	1.0199	$1,066	$1,918	xxx	xxx
126	Reybold	DE	Albuquerque	NM	NS-STRTR-BNSF	2819315	$2,248	1.0199	$2,293	$4 127	xxx	xxx
127	Reybold	DE	Baltimore	MD	NS-BALHV-CSXT	2819315	$181	1.0199	$190	$702	xxx	xxx
128	Reybold	DE	Blair	NE	NS-CHGO-UP	2819315	$2,087	1.0199	$2,128	$3,830	xxx	xxx
129	Reybold	DE	Brewton	AL	NS-BHAM-CSXT	2819315	$2,358	1.0199	$2,405	$4,329	xxx	xxx
130	Reybold	DE	Castle Hayne	NC	NS-CHLTE-CSXT	2819315	$1,636	1.0199	$1,669	$3,004	xxx	xxx
131	Reybold	DE	Clifton	AZ	NS KCITY UP	2819315	$3 000	1.0199	$3,060	$5,507	xxx	xxx
132	Reybold	DE	Corson	SD	NS-CHGO-BNSF	2819315	$2,086	1.0199	$2,128	$3 830	xxx	xxx
133	Removed											
134	Reybold	DE	Ferguson	MS	NS-MEMPHIS-CN	2819315	$2,724	1.0199	$2,778	$5 001	xxx	xxx
135	Reybold	DE	Hastings	NE	NS-CHGO-BNSF	2819315	$2,086	1.0199	$2,128	$3 830	xxx	xxx
136	Reybold	DE	Indianapolis	IN	NS-CINTI CSXT	2819315	$1,881	1.0199	$1,918	$3 453	xxx	xxx
137	Reybold	DE	Omaha	NE	NS-CHGO-UP	2819315	$2,086	1.0199	$2,128	$3,830	xxx	xxx
138	Reybold	DE	Orange	TX	NS ESTL-BNSF	2819315	$2,491	1.0199	$2,540	$4 572	xxx	xxx
139	Reybold	DE	Phoenix	AZ	NS-STRTR-BNSF	2819315	$2,248	1.0199	$2,293	$4 127	xxx	xxx
140	Reybold	DE	Sioux City	IA	NS-CHGO-BNSF	2819315	$2,086	1.0199	$2,128	$3,830	xxx	xxx
141	Reybold	DE	Toledo	OH	NS-TOLED-CSXT	2819315	$2,033	1.0199	$2,073	$3,732	xxx	xxx
142	Reybold	DE	Washington	WV	NS-HAGTN-CSXT	2819315	$629	1.0199	$641	$1,154	xxx	xxx

1/ Column (5) x Column (6)
2/ Column (7) x 1.8
3/ Tariff Rate from Rebuttal Exhibit II-A-16
4/ Column (9)/Column (7)

TAB 4

Variable Cost, Jurisdictional Threshold, Tariff Rate and
Revenue/Variable Cost Ratios Per Car for DuPont Movements - 1Q18

	Origin		Destination							1Q2018			
	City	ST	City	ST	Railroad(s)	Commodity	Phase III Cost Base Year 2018	Index to 1Q18	Phase III Cost 1/	Jurisdictional Threshold 2/	Tariff Rate 3/	Revenue/Variable Cost Ratio 4/
	(1)		(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Exhibit A - Local Moves												
1	Removed											
2	Bayway	NJ	Waynesville	NC	NS	2819315	$2 528	0 9918	$2,309	$4,157	xxx	xxx
3	Belle	WV	Danville	IL	NS	2813980	$1 700	0 9918	$1,686	$3,036	xxx	xxx
4	Removed											
5	Removed											
6	Removed											
7	Removed											
8	Removed											
9	Belle	WV	Wyandotte	MI	NS	2813934	$1 262	0 9918	$1 252	$2,253	xxx	xxx
10	Charleston	TN	Edgemoor	DE	NS	2812815	$2,307	0 9918	$2,288	$4,118	xxx	xxx
11	Edgemoor	DE	Chicago	IL	NS	2816130	$2,307	0 9918	$2 289	$4 120	xxx	xxx
12	Edgemoor	DE	Chillicothe	OH	NS	2816130	$2,247	0 9918	$2,229	$4,011	xxx	xxx
13	Edgemoor	DE	Mahrt	AL	NS	2816130	$2,971	0.9918	$2,946	$5,303	xxx	xxx
14	Edgemoor	DE	Riverwood Intl	GA	NS	2816130	$2,694	0 9918	$2,672	$4,810	xxx	xxx
15	Edgemoor	DE	Wabash	IN	NS	2816130	$2,362	0 9918	$2,343	$4,217	xxx	xxx
16	Lamoyne	AL	Gantt	SC	NS	4810360	$2,430	0.9918	$2,410	$4 338	xxx	xxx
17	Loudon	TN	Braithwaite	LA	NS	2818513	$1,982	0.9918	$1 965	$3,538	xxx	xxx
18	Louisville	KY	Decatur	IL	NS	2819450	$1,265	0 9918	$1 254	$2,258	xxx	xxx
19	Louisville	KY	Lafayette	IN	NS	2819450	$1,584	0 9918	$1,571	$2 827	xxx	xxx
20	Removed											
21	Removed											
22	Millmah	AL	Lamoyne	AL	NS	3812220	$499	0 9918	$495	$890	xxx	xxx
23	Reybold	DE	Detroit	MI	NS	2819315	$1,846	0.9918	$1,831	$3,295	xxx	xxx
24	Reybold	DE	Fort Mill	SC	NS	2819315	$1 850	0 9918	$1,835	$3,303	xxx	xxx
25	Reybold	DE	Morrisville	PA	NS	2819315	$579	0.9918	$574	$1,033	xxx	xxx
Exhibit B - Joint Moves												
1	Belle	WV	Anaheim	CA	NS CHGO-UP	2813980	$1,590	0 9918	$1,577	$2,839	$7,715	489%
2	Belle	WV	Bayport	TX	NS ESTL-UP	2818620	$2,000	0 9918	$1,984	$3,570	$5,500	277%
3	Removed											
4	Belle	WV	Brownsville	TX	NS ESTL-UP	2818221	$1 978	0 9918	$1,962	$3,531	$5 500	280%
5	Belle	WV	Burley	ID	NS-CHGO-UP	2813934	$1,590	0 9918	$1,577	$2,839	$7,715	489%
6	Belle	WV	Cadet	MO	NS KCITY-UP	2813934	$2,476	0.9918	$2,455	$4,420	$7 875	321%
7	Removed											
8	Belle	WV	Channelview	TX	NS-ESTL-UP	2818130	$1,830	0 9918	$1,815	$3,268	$5,500	303%
9	Belle	WV	City of Commerce	CA	NS-STRTR BNSF	2818221	$1,726	0 9918	$1,712	$3,082	$8,561	500%
10	Belle	WV	Conroe	TX	NS ESTL-BNSF	2813934	$1,972	0 9918	$1 956	$3,520	$8,093	414%
11	Belle	WV	Corsicana	TX	NS ESTL-UP	2813934	$1,873	0 9918	$1 857	$3,343	$8 093	436%
12	Removed											
13	Belle	WV	Las Billings	MT	NS-CHGO-BNSF	2818130	$1,369	0 9918	$1,357	$2,302	$5,500	379%
14	Belle	WV	Floyd	AR	NS-ESTL-UP-MCNEIL LNW	2813934	$1,888	0.9918	$1,873	$3 371	$8,093	432%
15	Belle	WV	Finley	WA	NS-CHGO BNSF	2813934	$1,591	0 9918	$1,578	$2 840	$7,715	489%
16	Removed											
17	Belle	WV	Freeport	TX	NS-ESTL-UP	2818130	$1,740	0 9918	$1,726	$3 107	$5,500	319%
18	Belle	WV	Garyville	LA	NS-NEWOR-CN	2813934	$2,839	0 9918	$2,815	$5,068	$10,560	375%
19	Belle	WV	Geismar	LA	NS-NEWOR-CN	2813934	$2,600	0.9918	$2,579	$4,642	$10,560	409%
20	Belle	WV	Janesville	WI	NS-CHGO-UP	2818131	$1 554	0 9918	$1,541	$2,774	$7,715	501%
21	Belle	WV	Laredo	TX	NS ESTL-UP	2818221	$1,978	0 9918	$1,962	$3 531	$5,500	280%
22	Belle	WV	Laredo	TX	NS ESTL-UP	2818131	$1 978	0 9918	$1,962	$3 531	$8,093	413%
23	Belle	WV	Lorenzo	IL	NS-CHGO-BNSF	2813980	$1,573	0 9918	$1,560	$2,808	$7,715	495%
24	Belle	WV	Los Angeles	CA	NS-STRTR-BNSF	2813934	$1,773	0 9918	$1,758	$3 165	$6,649	378%
25	Belle	WV	Los Angeles	CA	NS-CHGO-UP	2818130	$1,579	0 9918	$1 566	$2,819	$5,900	377%
26	Removed											
27	Belle	WV	Millsdale	IL	NS-CHGO-CN	2818131	$1,555	0.9918	$1 542	$2,776	$7,715	500%
28	Removed											
29	Belle	WV	Saint Paul	MN	NS-CHGO-BNSF	2818221	$1,733	0 9918	$1,719	$3,094	$5,900	343%
30	Belle	WV	San Dimas	CA	NS-CHGO-UP	2813980	$1,701	0.9918	$1,687	$3,036	$7,715	457%
31	Removed											
32	Belle	WV	St Gabriel	LA	NS-NEWOR-CN	2813934	$2,822	0.9918	$2,799	$5,038	$10,560	377%
33	Belle	WV	St Joseph	MO	NS KCITY-UP	2818130	$2,468	0 9918	$2,448	$4,406	$6,465	264%
34	Removed											
35	Belle	WV	Strang	TX	NS-ESTL-UP	2818221	$2,055	0 9918	$2,038	$1,669	$5,500	270%
36	Belle	WV	Strang	TX	NS ESTL-BNSF	2813934	$1,687	0 9918	$1,673	$3,012	$8,093	484%
37	Belle	WV	Strang	TX	NS ESTL-UP	2819183	$1,806	0 9918	$1 791	$3,224	$4 137	232%
38	Removed											
39	Belle	WV	Texas City	TX	NS ESTL-UP	2813934	$1 888	0 9918	$1,873	$3,371	$8,093	432%
40	Belle	WV	Verona	MO	NS-ESTL-BNSF	2813934	$1 958	0 9918	$1 942	$3,496	$8,093	417%
41	Belle	WV	West Memphis	AR	NS KCITY-UP	2813934	$2,467	0 9918	$2,446	$4,404	$7,875	322%
42	Belle	WV	Winfield Spur	LA	NS MERID-KCS	2813980	$2,386	0.9918	$2,367	$4 260	$8,939	378%
43	Belle	WV	Wichita	KS	NS-ESTL-BNSF	2813934	$1,999	0.9918	$1,981	$3,569	$8,093	408%
44	Bloomington	TX	Greenville	SC	UP-NEWOR-NS	2821142	$1,717	0.9918	$1,703	$3,065	$5 713	336%
45	Bloomington	TX	Washington, Warren	NJ	UP-ESTL-NS	2821142	$2,393	0 9918	$2,374	$4,273	$9,011	380%
46	Removed											
47	Charleston, Bradley	TN	Woodstock	TN	NS MEMPH-CN	2812220	$1,095	0 9918	$1,086	$1,954	$1 911	176%
48	Cresap	WV	Edgemoor	DE	CSXT-HAGTN NS	2991315	$666	0 9918	$660	$1 189	$2,341	355%
49	Dowling	TX	Fort Mill	SC	KCS MERID NS	2815112	$1 800	0 9918	$1,785	$3,214	$4 450	249%
50	Edgemoor	DE	Garland	TX	NS-MERID KCS	2816130	$2,901	0 9918	$2,877	$5,179	$8,200	285%
51	Edgemoor	DE	Grass	MI	NS-CHGO-CN	2816130	$2,215	0 9918	$2,197	$3,954	$6,500	296%
52	Edgemoor	DE	Laredo	TX	NS ESTL-UP	2816130	$2,567	0 9918	$2,546	$4,582	$6,093	239%
53	Edgemoor	DE	Madawaska	ME	NS-ROUPT-CN	2816130	$1 322	0 9918	$1,311	$2,360	$4,000	305%
54	Edgemoor	DE	Pasadena	TX	NS ESTL-UP	2819931	$2,513	0 9918	$2,492	$4,486	$13,600	546%
55	Edgemoor	DE	Port Huron	MI	NS-BUFF-CN	2816130	$1 722	0 9918	$1,708	$3 075	$4,880	286%
56	Edgemoor	DE	Portland	ME	NS-MCV-PAS-AYERM-ST	2816130	$1 319	0 9918	$1,308	$2,355	$4,000	306%
57	Edgemoor	DE	Portland	OR	NS-CHGO-BNSF	2816130	$2,238	0 9918	$2,219	$3,995	$6,500	293%
58	Edgemoor	DE	Quinnesec	MI	NS-CHGO-CN	2816130	$2,215	0 9918	$2,197	$3,954	$6 500	296%
59	Edgemoor	DE	Riley	ME	NS-MCV PAS AYERM-ST	2816130	$1 323	0.9918	$1,312	$2 362	$4,000	305%
60	Edgemoor	DE	Rumford	ME	NS MCV PAS AYERM-ST	2816130	$1 319	0.9918	$1,308	$2,355	$4 000	306%
61	Removed											
62	Edgemoor	DE	Shawmut	ME	NS-MCV PAS AYERM-ST	2816130	$1,320	0.9918	$1,310	$2,357	$4,000	305%

Variable Cost, Jurisdictional Threshold, Tariff Rate and
Revenue/Variable Cost Ratios Per Car for DuPont Movements - 1Q10

	Origin City (1)	ST	Destination City (2)	ST	Railroad(s) (3)	Commodity (4)	Phase III Cost Base Year 2010 (5)	Index 1Q10 to 1Q18 (6)	Phase III Cost 1/ (7)	1Q2018 Jurisdictional Threshold 2/ (8)	Tariff Rate 3/ (9)	Revenue/Variable Cost Ratio 4/ (10)
63	Edgemoor	DE	Smoboy	CA	NS-CHGO-UP	2816130	$2,242	0.9918	$2,224	$4,003	$6,500	292%
64	Edgemoor	DE	Smoboy	CA	NS-STRTR-BNSF	2816130	$2,413	0.9918	$2,393	$4,307	$5,101	213%
65	Edgemoor	DE	St Paul	MN	NS-CHGO-UP	2816130	$2,239	0.9918	$2,221	$3,997	$6,500	293%
66	Removed											
67	Edgemoor	DE	West Monroe	LA	NS-MERID-KCS	2816130	$2,907	0.9918	$2 883	$5,190	$8,200	284%
68	Edgemoor	DE	Wheeling	IL	NS-CHGO-CN	2816130	$2,226	0.9918	$2 208	$3,974	$6,500	294%
69	Enid	OK	Edgemoor	DE	BNSF ESTL-NS	2991315	$2,578	0.9918	$2,557	$4,603	$5,364	210%
70	Removed											
71	Gregory	TX	Dragon	MS	UP-NEWOR-NS	2813984	$510	0.9918	$506	$910	$2,373	469%
72	Removed											
73	Gregory	TX	Royce	NJ	UP-ESTL-NS	2813984	$2,721	0.9918	$2,699	$4,858	$10,123	375%
74	Removed											
75	Lemont	IL	Edgemoor	DE	BNSF-CHGO-NS	2991315	$2,136	0.9918	$2,119	$3,813	$4,905	232%
76	Lamoyne	AL	Arizona	MS	NS-MERID KCS	4810560	$1 263	0.9918	$1,253	$2,255	$4,800	383%
77	McIntosh	AL	Burnside	LA	NS-MOBIL-CN	2819330	$319	0.9918	$316	$569	$1,603	507%
78	McIntosh	AL	Delisle	MS	NS-MOBIL-CN HATBG KCS	2812815	$323	0.9918	$320	$576	$1,700	531%
79	McIntosh	AL	Delisle	MS	NS MOBIL-CN HATBG-KCS	2812220	$329	0.9918	$326	$586	$1,500	460%
80	McIntosh	AL	Orange	TX	NS NEWOR-UP	2812220	$1,608	0.9918	$1,595	$2,871	$5,000	313%
81	McIntosh	AL	Woodstock	TN	NS-MOBIL-CN	2812220	$328	0.9918	$325	$586	$1,500	461%
82	Orange	TX	Greenville	SC	UP-NEWOR-NS	2821142	$2,092	0.9918	$2,075	$3,735	$5,713	275%
83	Orange	TX	Washington, Warren	NJ	UP-ESTL-NS	2821142	$2,235	0.9918	$2,217	$3 991	$9,013	407%
84	Pascagoula	MS	Fort Mill	SC	MSE-MOBIL-NS	2815112	$2,090	0.9918	$2,073	$3 731	$6,000	289%
85	Pascagoula	MS	Lamoyne	AL	MSE MOBIL-NS	2815112	$279	0.9918	$276	$498	$1,092	395%
86	Strang	TX	Lamoyne	AI	UP-NEWOR-NS	2812350	$1,796	0.9918	$1,782	$3 207	$5,000	281%
87	Beauharnois	PQ	Edgemoor	DE	CSXT-BUFF NS	2812815	$1,444	0.9918	$1,432	$2,577	xxx	xxx
88	Removed											
89	Belle	WV	Gainesville	GA	NS CINTI-CSXT	2813980	$1,458	0.9918	$1 446	$2,603	xxx	xxx
90	Belle	WV	Port Bienville	MS	NS ATLA-CSXT-ANSLE-PDVR	2813934	$2,456	0.9918	$2,436	$4,385	xxx	xxx
91	Belle	WV	Theodore	AL	NS-CINTI-CSXT	2813934	$1,449	0.9918	$1 437	$2,587	xxx	xxx
92	Bellwood	VA	Dallas	GA	CSXT-PTRSB NS	2819315	$2,259	0.9918	$2,241	$4,034	xxx	xxx
93	Bellwood	VA	Fort Mill	SC	CSXT CHLTE-NS	2819315	$573	0.9918	$569	$1,023	xxx	xxx
94	Bellwood	VA	Rockwell	NC	CSXT-PTRSB-NS	2819315	$964	0.9918	$956	$1 721	xxx	xxx
95	Removed											
96	Danville	VA	Amphill	VA	NS-PTRSB-CSXT	3274110	$634	0.9918	$628	$1,131	xxx	xxx
97	Edgemoor	DE	New Johnsonville	TN	NS-CINTI-CSXT	2816130	$2,121	0.9918	$2,103	$3,786	xxx	xxx
98	Enid	OK	Edgemoor	DE	BNSF ESTL-NS	2991315	$3,113	0.9918	$3 088	$5,558	xxx	xxx
99	Loudon	TN	Grainger	NC	NS-CHATT-CSXT	2818512	$572	0.9918	$568	$1,022	xxx	xxx
100	Loudon	TN	Grainger	NC	NS CHATT-CSXT	2818512	$439	0.9918	$435	$783	xxx	xxx
101	Miami Fort	OH	Dallas	GA	CSXT-CINTI NS	2819315	$1,534	0.9918	$1 522	$2,739	xxx	xxx
102	Miami Fort	OH	Gracewood	GA	CSXT-CHATT-NS	2819325	$1,385	0.9918	$1,374	$2,473	xxx	xxx
103	Miami Fort	OH	Mcintosh	AI	CSXT-CHATT-NS	2819345	$974	0.9918	$966	$1 738	xxx	xxx
104	Removed											
105	Removed											
106	Miami Fort	OH	Pepper	VA	CSXT-CINTI NS	2819345	$2,053	0.9918	$2,036	$3,665	xxx	xxx
107	Nitrium	WV	Belle	WV	CSXT CINTI NS	2812220	$1 489	0.9918	$1,477	$2,659	xxx	xxx
108	Nitrium	WV	Danville	VA	CSXT-LYNCH NS	2812220	$380	0.9918	$376	$678	xxx	xxx
109	New Johnsonville	TN	Chipman	PA	CSXT-CINTI-NS	2816130	$2,104	0.9918	$2,087	$3,756	xxx	xxx
110	Removed											
111	New Johnsonville	TN	Morrow	GA	CSXT-CHATT-NS	2816130	$670	0.9918	$665	$1,197	xxx	xxx
112	Niagara Falls	NY	Belle	WV	CSXT-CLMBO-NS	2812220	$742	0.9918	$736	$1,325	xxx	xxx
113	Niagara Falls	NY	Edgemoor	DE	CSXT-BUFF NS	2812815	$1,468	0.9918	$1,456	$2,620	xxx	xxx
114	Niagara Falls	NY	Edgemoor	DE	CSXT-BUFF-NS	2812220	$1,498	0.9918	$1,485	$2,674	xxx	xxx
115	Pascagoula	MS	Fort Mill	SC	CSXT-ATLA-NS	2815112	$1,194	0.9918	$1,184	$2,131	xxx	xxx
116	Starke	FL	Huntsville	AL	CSXT-DCTUR NS	1441325	$285	0.9918	$283	$509	xxx	xxx
117	Starke	FL	Huntsville	AL	CSXT DCTUR-NS	1441325	$439	0.9918	$435	$783	xxx	xxx
118	Wurtland	KY	Fort Mill	SC	CSXT-CHLTE-NS	2819315	$576	0.9918	$571	$1,028	xxx	xxx
119	Wurtland	KY	McIntosh	AL	CSXT-BHAM-NS	2819315	$781	0.9918	$774	$1,394	xxx	xxx
120	Belle	WV	Divine	IL	NS PINE-CN	2813980	$1 496	0.9918	$1 484	$2,672	$7 502	505%
121	Belle	WV	Mapleton	IL	NS LOGPT-TPW	2813934	$1,326	0.9918	$1,315	$2,368	$5 843	444%
122	Burnside	LA	Gracewood	GA	CN NEWOR-NS	2819325	$1,919	0.9918	$1,903	$3 425	$4,200	221%
123	Lamont	IL	Edgemoor	DE	BNSF-CHGO-NS	2991315	$3,636	0.9918	$3 614	$6,505	$5,641	156%
124	New Johnsonville	TN	McDonough	GA	CSXT-CHATT-NS	2816130	$942	0.9918	$934	$1 682	$2,951	316%
125	Charleston	TN	Woodstock	TN	NS-MEMPH-CN	2812410	$1,080	0.9918	$1,071	$1,928	xxx	xxx
126	Reybold	DE	Albuquerque	NM	NS STRTR BNSF	2819315	$2,306	0.9918	$2,287	$4,117	xxx	xxx
127	Reybold	DE	Baltimore	MD	NS BALBV-CSXT	2819315	$387	0.9918	$384	$690	xxx	xxx
128	Reybold	DE	Blair	NE	NS CHGO-UP	2819315	$2,140	0.9918	$2,122	$3,820	xxx	xxx
129	Reybold	DE	Brewton	AL	NS-BHAM-CSXT	2819315	$2 419	0.9918	$2,399	$4,318	xxx	xxx
130	Reybold	DE	Castle Hayne	NC	NS-CHLTE-CSXT	2819315	$1,676	0.9918	$1,663	$2,993	xxx	xxx
131	Reybold	DE	Clifton	AZ	NS-KCITY-UP	2819315	$3,079	0.9918	$3,054	$5,497	xxx	xxx
132	Reybold	DE	Conan	SD	NS-CHGO-BNSF	2819315	$2,139	0.9918	$2 122	$3,819	xxx	xxx
133	Removed											
134	Reybold	DE	Ferguson	MS	NS MEMPHIS-CN	2819315	$2,795	0.9918	$2,772	$4 990	xxx	xxx
135	Reybold	DE	Hastings	NE	NS-CHGO-BNSF	2819315	$2,139	0.9918	$2,122	$3,819	xxx	xxx
136	Reybold	DE	Indianapolis	IN	NS-CINTI CSXT	2819315	$1,928	0.9918	$1 912	$3,442	xxx	xxx
137	Reybold	DE	Omaha	NE	NS-CHGO-UP	2819315	$2,140	0.9918	$2,122	$3,820	xxx	xxx
138	Reybold	DE	Orange	TX	NS-ESTL-BNSF	2819315	$2,555	0.9918	$2,534	$4,562	xxx	xxx
139	Reybold	DE	Phoenix	AZ	NS-STRTR BNSF	2819315	$2,306	0.9918	$2,287	$4,116	xxx	xxx
140	Reybold	DE	Sioux City	IA	NS CHGO-BNSF	2819315	$2,139	0.9918	$2,122	$3,819	xxx	xxx
141	Reybold	DE	Toledo	OH	NS-TOLED-CSXT	2819315	$2,044	0.9918	$2 027	$3,649	xxx	xxx
142	Reybold	DE	Washington	WV	NS HAGTN-CSXT	2819315	$641	0.9918	$635	$1,144	xxx	xxx

1/ Column (5) x Column (6)
2/ Column (7) x 1.8
3/ Tariff Rate from Rebuttal Exhibit II-A-16
4/ Column (9)/Column (7)

TAB 5

Variable Cost, Jurisdictional Threshold, Tariff Rate and
Revenue/Variable Cost Ratios Per Car for DuPont Movements - 2010

	Origin		Destination							2Q2010			
	City	ST	City	ST	Railroad(s)	Commodity	Phase III Cost Base Year 2010	Index to 2010	Phase III Cost 1/	Jurisdictional Threshold 2/	Tariff Rate 3/	Revenue/Variable Cost Ratio 4/
	(1)		(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Exhibit A - Local Moves												
1	Removed											
2	Rayway	NJ	Waynesville	NC	NS	2819315	$2,328	1.0029	$2,335	$4,204	$12,014	514%
3	Belle	WV	Danville	IL	NS	2813980	$1,700	1.0029	$1,705	$3,070	$4,626	271%
4	Removed											
5	Removed											
6	Removed											
7	Removed											
8	Removed											
9	Belle	WV	Wyandotte	MI	NS	2813934	$1,262	1.0029	$1 266	$2,278	$6,264	495%
10	Charleston	TN	Edgemoor	DE	NS	2812815	$2,307	1.0029	$2,313	$4,164	$13,638	590%
11	Edgemoor	DE	Chicago	IL	NS	2816130	$2,307	1.0029	$2,314	$4,166	$9,200	398%
12	Edgemoor	DE	Chillicothe	OH	NS	2816130	$2,247	1.0029	$2,254	$4,056	$6,084	270%
13	Edgemoor	DE	Mabet	AL	NS	2816130	$2 971	1.0029	$2 979	$5,363	$11,566	388%
14	Edgemoor	DE	Riverwood Intl	GA	NS	2816130	$2,694	1.0029	$2,702	$4,864	$5 860	217%
15	Edgemoor	DE	Wabash	IN	NS	2816130	$2,362	1.0029	$2,369	$4,264	$6,193	261%
16	Lemoyne	AL	Gantt	SC	NS	4810560	$2,430	1.0029	$2,437	$4,386	$4 800	197%
17	Loudon	TN	Braithwaite	LA	NS	2818512	$1,982	1.0029	$1 987	$3,577	$4 125	208%
18	Louisville	KY	Decatur	IL	NS	2819450	$1 265	1.0029	$1,268	$2,283	$3,302	260%
19	Louisville	KY	Lafayette	IN	NS	2819450	$1 584	1.0029	$1,588	$2,859	$3,732	216%
20	Removed											
21	Removed											
22	Mcintosh	AL	Lemoyne	AL	NS	2813220	$499	1.0029	$500	$900	$1 500	300%
23	Reybold	DE	Detroit	MI	NS	2819315	$1,846	1.0029	$1,851	$3 332	xxx	xxx
24	Reybold	DE	Fort Mill	SC	NS	2819315	$1,850	1.0029	$1,856	$3,340	xxx	xxx
25	Reybold	DE	Morrisville	PA	NS	2819315	$579	1.0029	$580	$1,045	xxx	xxx
Exhibit B - Joint Moves												
1	Belle	WV	Anaheim	CA	NS-CHGO-UP	2813980	$1,590	1.0029	$1 595	$2,871	$7,937	498%
2	Belle	WV	Bayport	TX	NS-ESTL-UP	2818620	$2,000	1.0029	$2,006	$3 611	$5,500	274%
3	Removed											
4	Belle	WV	Brownsville	TX	NS-ESTL-UP	2818221	$1,978	1.0029	$1,984	$3,571	$5 579	281%
5	Belle	WV	Burley	ID	NS-CHGO-UP	2813934	$1,590	1.0029	$1 595	$2,871	$7,715	484%
6	Belle	WV	Cadet	MO	NS KCITY UP	2813934	$2,476	1.0029	$2,483	$4 469	$8,495	342%
7	Removed											
8	Belle	WV	Channelview	TX	NS-ESTL-UP	2818130	$1,836	1.0029	$1,836	$3,304	$5 568	303%
9	Belle	WV	City of Commerce	CA	NS-STRTR-BNSF	2818221	$1 726	1.0029	$1,731	$3 116	$8,561	494%
10	Belle	WV	Conroe	TX	NS ESTL-BNSF	2813934	$1 972	1.0029	$1,978	$3 560	$8,214	415%
11	Belle	WV	Corsicana	TX	NS ESTL-UP	2813934	$1,872	1.0029	$1,878	$3,381	$8,093	431%
12	Removed											
13	Belle	WV	Eas. Billings	MT	NS-CHGO-BNSF	2818130	$1 569	1.0029	$1 574	$2,833	$5,900	375%
14	Belle	WV	Ethyl	AR	NS-ESTL UP MCNEI-LNW	2813934	$1,888	1.0029	$1,894	$3,409	$8,163	431%
15	Belle	WV	Finley	WA	NS-CHGO BNSF	2813934	$1,591	1.0029	$1 596	$2,872	$8,935	562%
16	Removed											
17	Belle	WV	Freeport	TX	NS-ESTL-UP	2818130	$1,740	1.0029	$1,745	$3 142	$5,500	315%
18	Belle	WV	Garyville	LA	NS-NEWOR-CN	2813934	$2,839	1.0029	$2,847	$5,125	$11 892	418%
19	Belle	WV	Geismar	LA	NS NEWOR-CN	2813934	$2,600	1.0029	$2,608	$4,695	$11,262	432%
20	Belle	WV	Janesville	WI	NS-CHGO-UP	2818131	$1,554	1.0029	$1,558	$2,805	$7,715	495%
21	Belle	WV	Laredo	TX	NS ESTL-UP	2818221	$1 978	1.0029	$1 984	$3,571	$5,579	281%
22	Belle	WV	Laredo	TX	NS ESTL-UP	2818131	$1 978	1.0029	$1,984	$3,571	$8,252	416%
23	Belle	WV	Lorenzo	IL	NS-CHGO-BNSF	2813980	$1,573	1.0029	$1,577	$2,839	$7,715	489%
24	Belle	WV	Los Angeles	CA	NS STRTR-BNSF	2813934	$1,773	1.0029	$1,778	$3 200	$7,283	410%
25	Belle	WV	Los Angeles	CA	NS CHGO-UP	2818130	$1 579	1.0029	$1 584	$2,851	$5 917	374%
26	Removed											
27	Belle	WV	Midlothian	IL	NS-CHGO-CN	2818131	$1 555	1.0029	$1,560	$2,807	$7,967	511%
28	Removed											
29	Belle	WV	Saint Paul	MN	NS-CHGO-BNSF	2818221	$1 733	1.0029	$1,738	$3,129	$5,917	340%
30	Belle	WV	San Dimas	CA	NS-CHGO-UP	2813980	$1,701	1.0029	$1,706	$3,071	$8,975	526%
31	Removed											
32	Belle	WV	St Gabriel	LA	NS NEWOR-CN	2813934	$2,822	1.0029	$2,830	$5,094	$11,226	397%
33	Belle	WV	St Joseph	MO	NS KCITY UP	2818130	$2,468	1.0029	$2,475	$4,455	$6,465	261%
34	Removed											
35	Belle	WV	Strang	TX	NS-ESTL-UP	2818221	$2,055	1.0029	$2,061	$3,710	$5,590	271%
36	Belle	WV	Strang	TX	NS-ESTL-BNSF	2813934	$1,687	1.0029	$1,692	$3,046	$8,093	478%
37	Belle	WV	Strang	TX	NS ESTL-UP	2819183	$1 806	1.0029	$1,811	$3,260	$4,157	230%
38	Removed											
39	Belle	WV	Texas City	TX	NS ESTL-UP	2813934	$1,888	1.0029	$1,894	$3,409	$8,093	427%
40	Belle	WV	Verona	MO	NS-ESTL-BNSF	2813934	$1,958	1.0029	$1,964	$3 535	$8,660	441%
41	Belle	WV	West Memphis	AR	NS-KCITY-UP	2813934	$2,467	1.0029	$2,474	$4,453	$7,875	318%
42	Belle	WV	Winfield Spur	LA	NS MERID KCS	2813980	$2,386	1.0029	$2 393	$4 308	$8 939	374%
43	Belle	WV	Wichita	KS	NS-ESTL-BNSF	2813934	$1,999	1.0029	$2,005	$3,609	$9,000	449%
44	Bloomington	TX	Greenville	SC	UP-NEWOR-NS	2821142	$1,717	1.0029	$1,722	$3,099	$5,713	332%
45	Bloomington	TX	Washington, Warren	NJ	UP ESTL-NS	2821142	$2,393	1.0029	$2,400	$4,321	$9,013	375%
46	Removed											
47	Charleston, Bradley	TN	Woodstock	TN	NS MEMPH-CN	2812220	$1,095	1.0029	$1,098	$1,976	$3,000	273%
48	Cresap	WV	Edgemoor	DE	CSXT-HAGTN-NS	2991315	$666	1.0029	$668	$1,202	$2,519	377%
49	Dowling	TX	Fort Mill	SC	KCS-MERID-NS	2815112	$1,808	1.0029	$1,805	$3 250	$4,450	246%
50	Edgemoor	DE	Garland	TX	NS-MERID-KCS	2816130	$2,901	1.0029	$2,910	$5,237	$8,200	282%
51	Edgemoor	DE	Gross	MI	NS-CHGO-CN	2816130	$2,215	1.0029	$2,221	$3,999	$6,976	314%
52	Edgemoor	DE	Laredo	TX	NS ESTL-UP	2816130	$2,567	1.0029	$2 574	$4,634	$6,828	265%
53	Edgemoor	DE	Madawaska	ME	NS ROUPT-CN	2816130	$1,322	1.0029	$1,326	$2,387	$4,088	308%
54	Edgemoor	DE	Pasadena	TX	NS ESTL-UP	2819971	$2,513	1.0029	$2,520	$4,536	$13,733	545%
55	Edgemoor	DE	Port Huron	MI	NS-BUFF-CN	2816130	$1 722	1.0029	$1,727	$3,109	$3,171	299%
56	Edgemoor	DE	Portland	ME	NS-MCV PAS-AYERM-ST	2816130	$1,319	1.0029	$1,323	$2,381	$4 140	313%
57	Edgemoor	DE	Portland	OR	NS-CHGO-BNSF	2816130	$2,238	1.0029	$2,244	$4,040	$7,100	316%
58	Edgemoor	DE	Quonsenec	MI	NS CHGO-CN	2816130	$2,215	1.0029	$2,221	$3,998	$6,500	293%
59	Edgemoor	DE	Riley	ME	NS MCV PAS-AYI RM-ST	2816130	$1,323	1.0029	$1,327	$2,388	$4 140	312%
60	Edgemoor	DE	Rumford	ME	NS-MCV PAS AYERM-ST	2816130	$1,319	1.0029	$1,323	$2 381	$4 233	320%
61	Removed											
62	Edgemoor	DE	Shawmut	ME	NS-MCV-PAS-AYERM ST	2816130	$1,320	1.0029	$1,324	$2,384	$4 140	313%

Variable Cost, Jurisdictional Threshold, Tariff Rate and
Revenue/Variable Cost Ratios Per Car for DuPont Movements - 2010

	Origin City (1)	ST	Destination City (2)	ST	Railroad(s) (3)	Commodity (4)	Phase III Cost Base Year 2010 (5)	Index to 2010 (6)	Phase III Cost 1/ (7)	2Q2010 Jurisdictional Threshold 2/ (8)	Tariff Rate 3/ (9)	Revenue/Variable Cost Ratio 4/ (10)
63	Edgemoor	DE	Seabay	CA	NS-CHGO-UP	2816130	$2,242	1 0029	$2 249	$4,047	$6,500	289%
64	Edgemoor	DE	Seabay	CA	NS-STRTR-BNSF	2816130	$2,413	1 0029	$2,420	$4,356	$5 101	211%
65	Edgemoor	DE	St Paul	MN	NS-CHGO-UP	2816130	$2,239	1 0029	$2,246	$4,042	$6,950	309%
66	Removed											
67	Edgemoor	DE	West Monroe	LA	NS-MERID-KCS	2816130	$2,907	1 0029	$2,916	$5,248	$8,286	284%
68	Edgemoor	DE	Wheeling	IL	NS-CHGO-CN	2816130	$3,226	1 0029	$2,233	$4,019	$6,745	302%
69	Enid	OK	Edgemoor	DE	BNSF-ESTL-NS	2991315	$2,578	1 0029	$2,586	$4,655	$5,841	227%
70	Removed											
71	Gregory	TX	Dragon	MS	UP-NEWOR NS	2813984	$510	1 0029	$511	$920	$2,387	467%
72	Removed											
73	Gregory	TX	Royce	NJ	UP-ESTL-NS	2813984	$2 721	1 0029	$2,729	$4,913	$11,325	415%
74	Removed											
75	Lemont	IL	Edgemoor	DE	BNSF-CHGO-NS	2991315	$2,136	1 0029	$2,142	$3,856	$5,223	244%
76	Lemoyne	AL	Artesia	MS	NS-MERID-KCS	4810560	$1,263	1 0029	$1,267	$2,280	$5,432	429%
77	McIntosh	AL	Burnside	LA	NS-MOBIL-CN	2819330	$319	1 0029	$320	$575	$1,645	515%
78	McIntosh	AL	Dekalb	MS	NS-MOBIL-CN HATBG-KCS	2812815	$323	1 0029	$324	$583	$1,700	525%
79	McIntosh	AL	Dekalb	MS	NS-MOBIL-CN HATBG-KCS	2812220	$329	1 0029	$329	$593	$1 535	466%
80	McIntosh	AL	Orange	TX	NS NEWOR UP	2812220	$1,608	1 0029	$1,613	$2,903	$5,635	349%
81	McIntosh	AL	Woodstock	TN	NS-MOBIL-CN	2812220	$328	1 0029	$329	$592	$1,535	467%
82	Orange	TX	Greenville	SC	UP-NEWOR NS	2821142	$2,092	1 0029	$2,098	$3,777	$5,713	272%
83	Orange	TX	Washington, Warren	NJ	UP-ESTL-NS	2821142	$2,235	1 0029	$2,242	$4,036	$9 013	402%
84	Pascagoula	MS	Fort Mill	SC	MSE-MOBIL-NS	2815112	$2,090	1 0029	$2,096	$3,773	$6,052	289%
85	Pascagoula	MS	Lemoyne	AL	MSE MOBIL-NS	2815112	$279	1 0029	$280	$503	$1,333	484%
86	Strang	TX	Lemoyne	AL	UP-NEWOR-NS	2812350	$1,796	1 0029	$1,801	$3,243	$5,038	280%
87	Beauharnois	PQ	Edgemoor	DE	CSXT BUFF NS	2812815	$1,444	1 0029	$1 448	$2,606	$7,022	485%
88	Removed											
89	Belle	WV	Gainesville	GA	NS-CINTI-CSXT	2813980	$1,458	1 0029	$1 463	$2,633	$7,281	498%
90	Belle	WV	Port Bienville	MS	NS ATLA CSXT ANSLE-PDVR	2813934	$2,456	1 0029	$2,464	$4 434	$9,585	389%
91	Belle	WV	Theodore	AL	NS-CINTI-CSXT	2813934	$1,449	1 0029	$1 453	$2,616	$7,281	501%
92	Bellwood	VA	Dallas	GA	CSXT PTRSB NS	2819315	$2,259	1 0029	$2 266	$4,079	$5,051	223%
93	Bellwood	VA	Fort Mill	SC	CSXT CHLTE-NS	2819315	$571	1 0029	$575	$1,035	$992	173%
94	Bellwood	VA	Rockwell	NC	CSXT-PTRSB NS	2819315	$964	1 0029	$967	$1 740	$2,700	279%
95	Removed											
96	Danville	VA	Ampthill	VA	NS-PTRSB-CSXT	3274710	$634	1 0029	$636	$1,144	$1,585	249%
97	Edgemoor	DE	New Johnsonville	TN	NS-CINTI-CSXT	2816130	$2,121	1 0029	$2,127	$3,828	$8,966	422%
98	Enid	OK	Edgemoor	DE	BNSF-ESTL-NS	2991315	$3,113	1 0029	$3,123	$5,621	$6,986	224%
99	Loudon	TN	Grangers	NC	NS-CHATT-CSXT	2818512	$572	1 0029	$574	$1,033	$1,490	260%
100	Loudon	TN	Grangers	NC	NS-CHATT CSXT	2818512	$439	1 0029	$440	$792	$1,684	383%
101	Miami Fort	OH	Dallas	GA	CSXT-CINTI NS	2819315	$1,534	1 0029	$1,539	$2,770	$3 532	230%
102	Miami Fort	OH	Gracewood	GA	CSXT-CHATT-NS	2819325	$1,385	1 0029	$1,389	$2,501	$5,400	389%
103	Miami Fort	OH	McIntosh	AL	CSXT CHATT NS	2819340	$974	1 0029	$976	$1,758	$5 638	577%
104	Removed											
105	Removed											
106	Miami Fort	OH	Pepper	VA	CSXT-CINTI-NS	2819345	$3,053	1 0029	$3,059	$5,506	$3,000	146%
107	Nitrium	WV	Belle	WV	CSXT-CINTI-NS	2812220	$1 489	1 0029	$1,494	$2,689	$4,800	321%
108	Nitrium	WV	Danville	VA	CSXT LYNCH NS	2812220	$380	1 0029	$381	$685	$2,520	662%
109	New Johnsonville	TN	Chapman	PA	CSXT-CINTI NS	2816130	$2,104	1 0029	$2,110	$3,798	$7,151	339%
110	Removed											
111	New Johnsonville	TN	Morrow	GA	CSXT CHATT-NS	2816130	$670	1 0029	$672	$1,210	$4,500	669%
112	Niagara Falls	NY	Belle	WV	CSXT-CLMBO-NS	2812220	$742	1 0029	$744	$1,340	$3,000	403%
113	Niagara Falls	NY	Edgemoor	DE	CSXT-BUFF NS	2812815	$1 468	1 0029	$1,472	$2,650	$7,022	477%
114	Niagara Falls	NY	Edgemoor	DE	CSXT-BUFF-NS	2812220	$1,498	1 0029	$1,502	$2,704	$3,800	253%
115	Pascagoula	MS	Fort Mill	SC	CSXT-ATLA-NS	2815112	$1,194	1 0029	$1,197	$2,155	$5,000	418%
116	Starke	FL	Huntsville	AL	CSXT-DCTUR-NS	1441325	$285	1 0029	$286	$514	$1,025	359%
117	Starke	FL	Huntsville	AL	CSXT DCTUR-NS	1441325	$439	1 0029	$440	$792	$1,138	256%
118	Wurtland	KY	Fort Mill	SC	CSXT CHLTE-NS	2819315	$576	1 0029	$578	$1,040	$992	172%
119	Wurtland	KY	McIntosh	AL	CSXT-BHAM NS	2819315	$781	1 0029	$783	$1,409	$2 000	255%
120	Belle	WV	Divine	IL	NS PINE-CN	2813980	$1,496	1 0029	$1,501	$2,702	$7,502	500%
121	Belle	WV	Mapleton	IL	NS LOGPT TPW	2813934	$1,326	1 0029	$1,330	$2,394	$6,106	459%
122	Burnside	LA	Gracewood	GA	CN NEWOR NS	2819325	$1,919	1 0029	$1,924	$3,464	$5,044	262%
123	Lemont	IL	Edgemoor	DE	BNSF-CHGO-NS	2991315	$2,636	1.0029	$2,643	$4 758	$5 788	219%
124	New Johnsonville	TN	McDonough	GA	CSXT-CHATT-NS	2816130	$942	1 0029	$945	$1 701	$3,467	367%
125	Charleston	TN	Woodstock	TN	NS-MEMPH CN	2812410	$1,080	1 0029	$1,083	$1 950	xxx	xxx
126	Reybold	DE	Albuquerque	NM	NS-STRTR BNSF	2819315	$2,306	1 0029	$2,313	$4 163	xxx	xxx
127	Reybold	DE	Baltimore	MD	NS-BALBV-CSXT	2819315	$387	1 0029	$388	$698	xxx	xxx
128	Reybold	DE	Blair	NE	NS-CHGO-UP	2819315	$2,140	1 0029	$2 146	$3,863	xxx	xxx
129	Reybold	DE	Brewton	AL	NS BHAM-CSXT	2819315	$2,419	1 0029	$2 426	$4,366	xxx	xxx
130	Reybold	DE	Castle Hayne	NC	NS CHI TE-CSXT	2819315	$1,676	1 0029	$1,681	$3 027	xxx	xxx
131	Reybold	DE	Clifton	AZ	NS KCITY-UP	2819315	$3,079	1 0029	$3,088	$5 559	xxx	xxx
132	Reybold	DE	Corson	SD	NS-CHGO-BNSF	2819315	$2,139	1 0029	$2,146	$3,862	xxx	xxx
133	Removed											
134	Reybold	DE	Ferguson	MS	NS MEMPHIS-CN	2819315	$2,795	1 0029	$2,804	$5,046	xxx	xxx
135	Reybold	DE	Hastings	NE	NS-CHGO-BNSF	2819315	$2,139	1 0029	$2,146	$3,862	xxx	xxx
136	Reybold	DE	Indianapolis	IN	NS-CINTI-CSXT	2819315	$1 928	1 0029	$1 933	$3,480	xxx	xxx
137	Reybold	DE	Omaha	NE	NS-CHGO-UP	2819315	$2,140	1 0029	$2,146	$3,863	xxx	xxx
138	Reybold	DE	Orange	TX	NS-ESTL-BNSF	2819315	$2,555	1 0029	$2,563	$4,613	xxx	xxx
139	Reybold	DE	Phoenix	AZ	NS-STRTR BNSF	2819315	$2,306	1 0029	$2,313	$4,163	xxx	xxx
140	Reybold	DE	Sioux City	IA	NS-CHGO-BNSF	2819315	$2,139	1 0029	$2,146	$3,862	xxx	xxx
141	Reybold	DE	Toledo	OH	NS-TOLED-CSXT	2819315	$2,044	1 0029	$2,050	$3,690	xxx	xxx
142	Reybold	DE	Washington	WV	NS-HAGTN-CSXT	2819315	$641	1 0029	$643	$1 157	xxx	xxx

1/ Column (5) x Column (6)
2/ Column (7) x 1 8
3/ Tariff Rate from Rebuttal Exhibit II-A-16
4/ Column (9)/Column (7)

TAB 6

Variable Cost, Jurisdictional Threshold, Tariff Rate and
Revenue/Variable Cost Ratios Per Car for DuPont Movements - 3Q10

	Origin City (1)	ST	Destination City (2)	ST	Railroad(s) (3)	Commodity (4)	Phase III Cost Base Year 2010 (5)	Index to 3Q10 (6)	Phase III Cost 1/ (7)	3Q2010 Jurisdictional Threshold 2/ (8)	Tariff Rate 3/ (9)	Revenue/Variable Cost Ratio 4/ (10)
Exhibit A - Local Moves												
1	Removed											
2	Bayway	NJ	Waynesville	NC	NS	2819315	$2,328	0.9936	$2,313	$4,164	$12,014	519%
3	Belle	WV	Danville	IL	NS	2813980	$1,700	0.9936	$1,689	$3,041	$4,626	274%
4	Removed											
5	Removed											
6	Removed											
7	Removed											
8	Removed											
9	Belle	WV	Wyandotte	MI	NS	2813934	$1,262	0.9936	$1,254	$2,257	$6,264	500%
10	Charleston	TN	Edgemoor	DE	NS	2812815	$2,107	0.9936	$2,292	$4,125	$13,636	595%
11	Edgemoor	DE	Chicago	IL	NS	2816130	$2,107	0.9936	$2,293	$4,127	$9,200	401%
12	Edgemoor	DE	Chillicothe	OH	NS	2816130	$2,247	0.9936	$2,232	$4,018	$6,084	273%
13	Edgemoor	DE	Mahrt	AL	NS	2816130	$2,971	0.9936	$2,951	$5,312	$11,566	392%
14	Edgemoor	DE	Riverwood Int.	GA	NS	2816130	$2,694	0.9936	$3,677	$4,819	$5,860	219%
15	Edgemoor	DE	Wabash	IN	NS	2816130	$2,362	0.9936	$2,347	$4,225	$6,193	264%
16	Lamoyne	AL	Grant	SC	NS	4810560	$2,430	0.9936	$2,414	$4,345	$4,800	199%
17	Loudon	TN	Brunswick	LA	NS	2818512	$1,982	0.9936	$1,969	$3,544	$4,125	210%
18	Louisville	KY	Decatur	IL	NS	2819450	$1,263	0.9936	$1,256	$2,262	$3,302	263%
19	Louisville	KY	Lafayette	IN	NS	2819450	$1,584	0.9936	$1,574	$2,832	$3,752	238%
20	Removed											
21	Removed											
22	McIntosh	AL	Lamoyne	AL	NS	2812220	$499	0.9936	$495	$892	$1,300	303%
23	Reybold	DE	Detroit	MI	NS	2819315	$1,846	0.9936	$1,834	$3,301	xxx	xxx
24	Reybold	DE	Fort Mill	SC	NS	2819315	$1,850	0.9936	$1,838	$3,309	xxx	xxx
25	Reybold	DE	Morrisville	PA	NS	2819315	$379	0.9936	$575	$1,035	xxx	xxx
Exhibit B - Joint Moves												
1	Belle	WV	Anaheim	CA	NS CHGO-UP	2813980	$1,540	0.9936	$1,580	$2,844	$8,975	568%
2	Belle	WV	Bayport	TX	NS ESTL-UP	2818620	$2,000	0.9936	$1,987	$3,577	$5,950	299%
3	Removed											
4	Belle	WV	Brownsville	TX	NS ESTL-UP	2818221	$1,978	0.9936	$1,965	$3,537	$5,950	301%
5	Belle	WV	Burley	ID	NS-CHGO-UP	2813934	$1,590	0.9936	$1,580	$2,844	$8,975	568%
6	Belle	WV	Cadet	MO	NS-KCITY-UP	2813934	$2,476	0.9936	$2,460	$4,427	$11,400	463%
7	Removed											
8	Belle	WV	Channelview	TX	NS ESTL-UP	2818130	$1,830	0.9936	$1,819	$3,273	$5,950	327%
9	Belle	WV	City of Commerce	CA	NS-STRTR-BNSF	2818221	$1,726	0.9936	$1,715	$3,087	$8,561	499%
10	Belle	WV	Conroe	TX	NS-ESTL-BNSF	2813934	$1,972	0.9936	$1,959	$3,527	$9,000	459%
11	Belle	WV	Corsicana	TX	NS-ESTL-UP	2813934	$1,873	0.9936	$1,861	$3,349	$9,000	484%
12	Removed											
13	Belle	WV	East Billings	MT	NS-CHGO-BNSF	2818130	$1,569	0.9936	$1,559	$2,807	$6,000	385%
14	Belle	WV	Ethyl	AR	NS ESTL-UP-MCNEIL NW	2813934	$1,888	0.9936	$1,876	$3,377	$9,000	480%
15	Belle	WV	Finley	WA	NS-CHGO-BNSF	2813934	$1,591	0.9936	$1,581	$2,845	$8,975	568%
16	Removed											
17	Belle	WV	Freeport	TX	NS ESTL-UP	2818130	$1,740	0.9936	$1,729	$3,112	$5,950	344%
18	Belle	WV	Garyville	LA	NS-NEWOR-CN	2813934	$2,139	0.9936	$2,126	$3,827	$14,555	516%
19	Belle	WV	Geismar	LA	NS-NEWOR-CN	2813934	$2,600	0.9936	$2,584	$4,651	$14,555	563%
20	Belle	WV	Janesville	WI	NS-CHGO-UP	2818131	$1,554	0.9936	$1,544	$2,778	$8,975	581%
21	Belle	WV	Laredo	TX	NS ESTL-UP	2818221	$1,978	0.9936	$1,965	$3,537	$5,950	303%
22	Belle	WV	Laredo	TX	NS ESTL-UP	2818131	$1,978	0.9936	$1,965	$3,537	$9,000	458%
23	Belle	WV	Lorenzo	IL	NS-CHGO-BNSF	2813980	$1,573	0.9936	$1,561	$2,813	$8,975	574%
24	Belle	WV	Los Angeles	CA	NS-STRTR BNSF	2813934	$1,773	0.9936	$1,761	$3,170	$8,975	510%
25	Belle	WV	Los Angeles	CA	NS-CHGO-UP	2818130	$1,579	0.9936	$1,569	$2,824	$6,000	382%
26	Removed											
27	Belle	WV	Belleville	IL	NS-CHGO-CN	2818131	$1,555	0.9936	$1,545	$2,781	$8,975	581%
28	Removed											
29	Belle	WV	Saint Paul	MN	NS-CHGO BNSF	2818721	$1,733	0.9936	$1,722	$3,099	$6,000	348%
30	Belle	WV	San Dimas	CA	NS-CHGO-UP	2813980	$1,701	0.9936	$1,690	$3,042	$8,975	531%
31	Removed											
32	Belle	WV	St Gabriel	LA	NS-NEWOR-CN	2813934	$2,822	0.9936	$2,804	$5,047	$14,555	519%
33	Belle	WV	St Joseph	MO	NS-KCITY-UP	2818130	$2,468	0.9936	$2,452	$4,413	$6,465	264%
34	Removed											
35	Belle	WV	Strang	TX	NS-ESTL-UP	2818221	$2,055	0.9936	$2,042	$3,675	$5,950	291%
36	Belle	WV	Strang	TX	NS-ESTL-BNSF	2813934	$1,687	0.9936	$1,676	$3,018	$9,000	537%
37	Belle	WV	Strang	TX	NS ESTL-UP	2819183	$1,806	0.9936	$1,794	$3,230	$4,157	232%
38	Removed											
39	Belle	WV	Texas City	TX	NS ESTL-UP	2813934	$1,888	0.9936	$1,876	$3,377	$9,000	480%
40	Belle	WV	Verona	MO	NS-ESTL-BNSF	2813934	$1,958	0.9936	$1,946	$3,502	$9,000	463%
41	Belle	WV	West Memphis	AR	NS-KCITY UP	2813934	$2,467	0.9936	$2,451	$4,411	$11,400	465%
42	Belle	WV	Winfield Spur	LA	NS-MERID-KCS	2813980	$2,386	0.9936	$2,371	$4,268	$12,588	531%
43	Belle	WV	Wichita	KS	NS ESTL-BNSF	2813934	$1,999	0.9936	$1,986	$3,575	$9,000	453%
44	Bloomington	TX	Greenville	SC	UP-NTWOR-NS	2821142	$1,717	0.9936	$1,706	$3,070	$5,713	335%
45	Bloomington	TX	Washington Warren	NJ	UP-ESTL-NS	2821142	$2,393	0.9936	$2,378	$4,280	$9,013	379%
46	Removed											
47	Charleston, Bradley	TN	Woodstock	TN	NS MEMPH CN	2812220	$1,095	0.9936	$1,088	$1,958	$3,000	276%
48	Cresap	WV	Edgemoor	DE	CSXT-HAGTN NS	2991315	$666	0.9936	$661	$1,191	$3,716	507%
49	Dowling	TX	Fort Mill	SC	KCS MERID NS	2815113	$1,800	0.9936	$1,788	$3,219	$5,425	303%
50	Edgemoor	DE	Garland	TX	NS-MERID-KCS	2816130	$2,901	0.9936	$2,882	$5,188	$8,774	304%
51	Edgemoor	DE	Green	MI	NS-CHGO-CN	2816130	$2,215	0.9936	$2,201	$3,961	$9,200	418%
52	Edgemoor	DE	Laredo	TX	NS ESTL-UP	2816130	$2,567	0.9936	$2,550	$4,590	$10,272	403%
53	Edgemoor	DE	Madawaska	ME	NS ROUPT-CN	2816130	$1,322	0.9936	$1,313	$2,364	$4,700	358%
54	Edgemoor	DE	Pasadena	TX	NS ESTL-UP	2819971	$2,513	0.9936	$2,496	$4,494	$13,865	555%
55	Edgemoor	DE	Port Huron	MI	NS BUFF-CN	2816130	$1,722	0.9936	$1,711	$3,080	$6,920	404%
56	Edgemoor	DE	Portland	ME	NS-MCV-PAS-AYERM-ST	2816130	$1,319	0.9936	$1,310	$2,359	$4,700	359%
57	Edgemoor	DE	Portland	OR	NS CHGO-BNSF	2816130	$2,238	0.9936	$2,223	$4,002	$9,200	414%
58	Edgemoor	DE	Quinnesec	MI	NS-CHGO-CN	2816130	$2,215	0.9936	$2,201	$3,961	$9,200	418%
59	Edgemoor	DE	Riley	ME	NS-MCV-PAS-AYERM-ST	2816130	$1,323	0.9936	$1,315	$2,366	$4,700	358%
60	Edgemoor	DE	Rumford	ME	NS-MCV-PAS-AYERM-ST	2816130	$1,319	0.9936	$1,311	$2,359	$4,700	359%
61	Removed											
62	Edgemoor	DE	Shawmut	ME	NS-MCV-PAS-AYERM-ST	2816130	$1,320	0.9936	$1,312	$2,361	$4,700	358%

Variable Cost, Jurisdictional Threshold, Tariff Rate and
Revenue/Variable Cost Ratios Per Car for DuPont Movements - 3Q10

	Origin City (1)	ST	Destination City (2)	ST	Railroad(s) (3)	Commodity (4)	Phase III Cost Base Year 2010 (5)	Index to 3Q10 (6)	3Q2010 Phase III Cost 1/ (7)	3Q2010 Jurisdictional Threshold 2/ (8)	3Q2010 Tariff Rate 3/ (9)	3Q2010 Revenue/Variable Cost Ratio 4/ (10)
63	Edgemoor	DE	Snoboy	CA	NS CHGO-UP	2816130	$2,242	0.9936	$2,228	$4,010	$9,200	413%
64	Edgemoor	DE	Snoboy	CA	NS STRTR BNSF	2816130	$2,413	0.9936	$2,397	$4,315	$5,101	213%
65	Edgemoor	DE	S. Paul	MN	NS-CHGO-UP	2816130	$2,239	0.9936	$2,225	$4,004	$9,200	414%
66	Removed											
67	Edgemoor	DE	West Monroe	LA	NS-MERID-KCS	2816130	$2,907	0.9936	$2,888	$5,199	$8,774	304%
68	Edgemoor	DE	Wheeling	IL	NS-CHGO-CN	2816130	$2,226	0.9936	$2,212	$3,983	$9,200	416%
69	Enid	OK	Edgemoor	DE	BNSF-ESTL-NS	2991315	$2,578	0.9936	$2,562	$4,611	$6,075	237%
70	Removed											
71.	Gregory	TX	Dragon	MS	UP-NTWOR NS	2813984	$510	0.9936	$507	$912	$2,450	484%
72	Removed											
73	Gregory	TX	Royce	NJ	UP-ESTL-NS	2813984	$2,721	0.9936	$2,704	$4,867	$13,730	508%
74	Removed											
75	Lemont	IL	Edgemoor	DE	BNSF CHGO-NS	2991315	$2,136	0.9936	$2,122	$3,820	$6,389	301%
76	Lemoyne	AL	Artesia	MS	NS-MERID-KCS	4810560	$1,263	0.9936	$1,255	$2,259	$8,395	669%
77	McIntosh	AL	Burnside	LA	NS-MOBIL-CN	2819710	$319	0.9936	$317	$570	$1,700	537%
78	McIntosh	AL	Delisle	MS	NS-MOBIL-CN-HATBG-KCS	2812815	$323	0.9936	$321	$577	$1,700	530%
79	McIntosh	AL	Delisle	MS	NS-MOBIL-CN-HATBG-KCS	2812220	$329	0.9936	$326	$588	$1,700	521%
80	McIntosh	AL	Orange	TX	NS NTWOR-UP	2812220	$1,608	0.9936	$1,598	$2,876	$8,611	539%
81	McIntosh	AL	Woodstock	TN	NS-MOBIL-CN	2812220	$328	0.9936	$326	$587	$1,700	522%
82	Orange	TX	Greenville	SC	UP-NTWOR-NS	2821142	$2,092	0.9936	$2,079	$3,741	$5,713	275%
83	Orange	TX	Washington, Warren	NJ	UP-ESTL-NS	2821142	$2,235	0.9936	$2,221	$3,998	$9,013	406%
84	Pascagoula	MS	Fort Mill	SC	MSE-MOBIL-NS	2815112	$2,090	0.9936	$2,077	$3,738	$6,295	303%
85.	Pascagoula	MS	Lemoyne	AL	MSE MOBIL-NS	2815112	$279	0.9936	$277	$498	$2,577	931%
86	Strang	TX	Lemoyne	AL	UP NTWOR-NS	2812350	$1,796	0.9936	$1,785	$3,212	$5,215	292%
87	Beauharnois	PQ	Edgemoor	DE	CSXT BUFF-NS	2812815	$1,444	0.9936	$1,434	$2,582	$7,022	490%
88	Removed											
89	Belle	WV	Gainesville	GA	NS CINTI-CSXT	2813980	$1,458	0.9936	$1,449	$2,608	$7,281	503%
90	Belle	WV	Port Bienville	MS	NS-ATLA-CSXT-ANSLE-PBVR	2813934	$2,456	0.9936	$2,440	$4,393	$9,585	393%
91	Belle	WV	Theodore	AL	NS-CINTI-CSXT	2813934	$1,449	0.9936	$1,440	$2,592	$7,281	506%
92	Bellwood	VA	Dallas	GA	CSXT-PTRSB NS	2819315	$2,259	0.9936	$2,245	$4,041	$5,051	225%
93	Bellwood	VA	Fort Mill	SC	CSXT-CHLTE-NS	2819315	$573	0.9936	$569	$1,025	$992	174%
94	Bellwood	VA	Rockwell	NC	CSXT-PTRSB NS	2819315	$964	0.9936	$958	$1,724	$2,700	282%
95	Removed											
96	Danville	VA	Amethill	VA	NS-PTRSB-CSXT	3274110	$634	0.9936	$630	$1,133	$1,585	252%
97	Edgemoor	DE	New Johnsonville	TN	NS-CINTI-CSXT	2816130	$2,121	0.9936	$2,107	$3,792	$8,966	426%
98	Enid	OK	Edgemoor	DE	BNSF ESTL-NS	2991315	$3,113	0.9936	$3,093	$5,568	$6,986	226%
99	Loudon	TN	Grangers	NC	NS-CHATT-CSXT	2818512	$572	0.9936	$569	$1,024	$1,490	262%
100	Loudon	TN	Grangers	NC	NS-CHATT-CSXT	2818512	$439	0.9936	$436	$785	$1,684	386%
101	Miami Fort	OH	Dallas	GA	CSXT-CINTI NS	2819315	$1,534	0.9936	$1,524	$2,744	$3,532	232%
102	Miami Fort	OH	Gracewood	GA	CSXT-CHATT-NS	2819325	$1,385	0.9936	$1,376	$2,477	$3,400	392%
103	Miami Fort	OH	McIntosh	AL	CSXT CHATT NS	2819340	$974	0.9936	$967	$1,741	$5,638	583%
104	Removed											
105	Removed											
106.	Miami Fort	OH	Pepper	VA	CSXT-CINTI-NS	2819345	$2,053	0.9936	$2,040	$3,671	$3,000	147%
107	Nitrium	WV	Belle	WV	CSXT-CINTI-NS	2812220	$1,489	0.9936	$1,480	$2,664	$4,800	324%
108	Nitrium	WV	Danville	VA	CSXT LYNCH NS	2812220	$380	0.9936	$377	$679	$2,520	668%
109	New Johnsonville	TN	Chapman	PA	CSXT-CINTI-NS	2816130	$2,104	0.9936	$2,091	$3,763	$7,151	342%
110	Removed											
111	New Johnsonville	TN	Morrow	GA	CSXT-CHATT NS	2816130	$670	0.9936	$666	$1,199	$4,500	676%
112	Niagara Falls	NY	Belle	WV	CSXT-CLMBO-NS	2812220	$742	0.9936	$737	$1,327	$3,000	407%
113	Niagara Falls	NY	Edgemoor	DE	CSXT-BUFF NS	2812815	$1,468	0.9936	$1,458	$2,625	$7,022	482%
114	Niagara Falls	NY	Edgemoor	DE	CSXT-BUFF-NS	2812220	$1,498	0.9936	$1,488	$2,679	$7,000	259%
115	Pascagoula	MS	Fort Mill	SC	CSXT-ATLA NS	2815112	$1,194	0.9936	$1,186	$2,135	$5,000	422%
116	Starke	FL	Huntsville	AL	CSXT-DCTUR-NS	1441325	$285	0.9936	$283	$510	$1,025	362%
117	Starke	FL	Huntsville	AL	CSXT DCTUR NS	1441325	$439	0.9936	$436	$784	$1,128	259%
118	Wurtland	KY	Fort Mill	SC	CSXT-CHLTE-NS	2819315	$576	0.9936	$572	$1,030	$992	173%
119	Wurtland	KY	McIntosh	AL	CSXT-BHAM NS	2819315	$781	0.9936	$776	$1,396	$2,000	258%
120	Belle	WV	Divine	IL	NS-PINE-CN	2813980	$1,496	0.9936	$1,487	$2,676	$7,502	505%
121	Belle	WV	Mapleton	IL	NS-LOGPT-TPW	2813934	$1,326	0.9936	$1,318	$2,372	$7,332	556%
122	Burnside	LA	Gracewood	GA	CN NEWOR-NS	2819325	$1,919	0.9936	$1,906	$3,431	$9,000	472%
123	Lemont	IL	Edgemoor	DE	BNSF-CHGO-NS	2991315	$2,636	0.9936	$2,619	$4,714	$7,347	281%
124	New Johnsonville	TN	McDonough	GA	CSXT-CHATT-NS	2816130	$942	0.9936	$936	$1,685	$4,500	481%
125	Charleston	TN	Woodstock	TN	NS MEMPH-CN	2812410	$1,080	0.9936	$1,073	$1,931	xxx	xxx
126	Reybold	DE	Albuquerque	NM	NS-STRTR BNSF	2819315	$2,306	0.9936	$2,291	$4,124	xxx	xxx
127	Reybold	DE	Baltimore	MD	NS BALDV-CSXT	2819315	$387	0.9936	$384	$692	xxx	xxx
128	Reybold	DE	Blair	NE	NS-CHGO-UP	2819315	$2,140	0.9936	$2,126	$3,827	xxx	xxx
129	Reybold	DE	Brewton	AL	NS-BHAM-CSXT	2819315	$2,419	0.9936	$2,403	$4,326	xxx	xxx
130	Reybold	DE	Castle Hayne	NC	NS-CHLTE-CSXT	2819315	$1,676	0.9936	$1,666	$2,998	xxx	xxx
131.	Reybold	DE	Clifton	AZ	NS KCITY UP	2819315	$3,079	0.9936	$3,059	$5,507	xxx	xxx
132	Reybold	DE	Conton	SD	NS-CHGO-BNSF	2819315	$2,139	0.9936	$2,126	$3,826	xxx	xxx
133	Removed											
134	Reybold	DE	Ferguson	MS	NS MEMPHIS-CN	2819315	$2,795	0.9936	$2,777	$4,999	xxx	xxx
135	Reybold	DE	Hastings	NE	NS-CHGO-BNSF	2819315	$2,139	0.9936	$2,126	$3,826	xxx	xxx
136	Reybold	DE	Indianapolis	IN	NS-CINTI-CSXT	2819315	$1,928	0.9936	$1,915	$3,448	xxx	xxx
137	Reybold	DE	Omaha	NE	NS-CHGO UP	2819315	$2,140	0.9936	$2,126	$3,826	xxx	xxx
138	Reybold	DE	Orange	TX	NS ESTL-BNSF	2819315	$2,555	0.9936	$2,539	$4,570	xxx	xxx
139	Reybold	DE	Phoenix	AZ	NS-STRTR-BNSF	2819315	$2,306	0.9936	$2,291	$4,124	xxx	xxx
140	Reybold	DE	Sioux City	IA	NS-CHGO-BNSF	2819315	$2,139	0.9936	$2,126	$3,826	xxx	xxx
141	Reybold	DE	Toledo	OH	NS-TOLED-CSXT	2819315	$2,044	0.9936	$2,031	$3,656	xxx	xxx
142	Reybold	DE	Washington	WV	NS-HAGTN-CSXT	2819315	$641	0.9936	$637	$1,146	xxx	xxx

1/ Column (5) x Column (6)
2/ Column (7) x 1.8
3/ Tariff Rate from Rebuttal Exhibit II-A-16
4/ Column (9)/Column (7)

TAB 7

Variable Cost, Jurisdictional Threshold, Tariff Rate and
Revenue/Variable Cost Ratios Per Car for DuPont Movements - 4Q10

	Origin City (1)	ST	Destination City (2)	ST	Railroad(s) (3)	Commodity (4)	Phase III Cost Base Year 2010 (5)	Index to 4Q10 (6)	Phase III Cost 1/ (7)	4Q2010 Jurisdictional Threshold 2/ (8)	Tariff Rate 3/ (9)	Revenue/Variable Cost Ratio 4/ (10)
Exhibit A - Local Moves												
1	Removed											
2	Bayway	NJ	Waynesville	NC	NS	2819315	$2,328	1.0119	$2,356	$4,241	$12,014	510%
3	Belle	WV	Danville	IL	NS	2813980	$1,700	1.0119	$1,721	$3,097	$4,626	269%
4	Removed											
5	Removed											
6	Removed											
7	Removed											
8	Removed											
9	Belle	WV	Wyandotte	MI	NS	2813934	$1,262	1.0119	$1,277	$2,298	$6,264	491%
10	Charleston	TN	Edgemoor	DE	NS	2812815	$2,387	1.0119	$2,414	$4,281	$13,638	584%
11	Edgemoor	DE	Chicago	IL	NS	2816130	$2,387	1.0119	$2,335	$4,283	$9,200	394%
12	Edgemoor	DE	Chillicothe	OH	NS	2816130	$2,247	1.0119	$2,274	$4,092	$6,084	268%
13	Edgemoor	DE	Mahrt	AL	NS	2816130	$2,971	1.0119	$3,006	$5,410	$11,566	385%
14	Edgemoor	DE	Riverwood Intl	GA	NS	2816130	$2,694	1.0119	$2,726	$4,907	$5,860	215%
15	Edgemoor	DE	Wabash	IN	NS	2816130	$2,362	1.0119	$2,390	$4,302	$6,193	259%
16	Lamoyne	AL	Gant	SC	NS	4810560	$2,410	1.0119	$2,458	$4,425	$4,800	195%
17	Loudon	TN	Brathwaite	LA	NS	2818512	$1,982	1.0119	$2,005	$3,609	$4,125	206%
18	Louisville	KY	Decatur	IL	NS	2819450	$1,265	1.0119	$1,280	$2,303	$3,302	258%
19	Louisville	KY	Lafayette	IN	NS	2819450	$1,584	1.0119	$1,603	$2,885	$3,752	234%
20	Removed											
21	Removed											
22	McIntosh	AL	Lamoyne	AL	NS	2812220	$499	1.0119	$505	$908	$1,500	297%
23	Reybold	DE	Detroit	MI	NS	2819315	$1,846	1.0119	$1,868	$3,362	xxx	xxx
24	Reybold	DE	Fort Mill	SC	NS	2819315	$1,850	1.0119	$1,872	$3,370	xxx	xxx
25	Reybold	DE	Morrisville	PA	NS	2819315	$579	1.0119	$586	$1,054	xxx	xxx
Exhibit B - Joint Moves												
1	Belle	WV	Anaheim	CA	NS-CHGO-UP	2813980	$1,598	1.0119	$1,609	$2,896	$8,575	558%
2	Belle	WV	Bayport	TX	NS-ESTL-UP	2818620	$2,000	1.0119	$2,024	$3,643	$5,950	294%
3	Removed											
4	Belle	WV	Brownsville	TX	NS-ESTL-UP	2818221	$1,978	1.0119	$2,001	$3,602	$5,950	297%
5	Belle	WV	Burley	ID	NS-CHGO-UP	2813934	$1,590	1.0119	$1,609	$2,896	$8,975	558%
6	Belle	WV	Cadet	MO	NS-KCITY-UP	2813934	$2,476	1.0119	$2,505	$4,509	$11,400	455%
7	Removed											
8	Belle	WV	Channelview	TX	NS-ESTL-UP	2818130	$1,830	1.0119	$1,852	$3,334	$5,950	321%
9	Belle	WV	City of Commerce	CA	NS-STRTR-BNSF	2818221	$1,726	1.0119	$1,747	$3,144	$8,561	490%
10	Belle	WV	Conroe	TX	NS-ESTL-BNSF	2813934	$1,972	1.0119	$1,995	$3,592	$9,000	451%
11	Belle	WV	Comeaux	TX	NS-ESTL-UP	2813934	$1,873	1.0119	$1,895	$3,411	$9,000	475%
12	Removed											
13	Belle	WV	East Billings	MT	NS-CHGO-BNSF	2818130	$1,569	1.0119	$1,588	$2,859	$6,000	378%
14	Belle	WV	Ethyl	AR	NS-ESTL-UP-MCNU LNW	2813934	$1,888	1.0119	$1,911	$3,439	$9,000	471%
15	Belle	WV	Finley	WA	NS-CHGO-BNSF	2813934	$1,591	1.0119	$1,610	$2,898	$8,975	558%
16	Removed											
17	Belle	WV	Freeport	TX	NS-ESTL-UP	2818130	$1,749	1.0119	$1,761	$3,170	$5,950	338%
18	Belle	WV	Garyville	LA	NS-NEWOR-CN	2813934	$2,839	1.0119	$2,872	$5,170	$14,555	507%
19	Belle	WV	Geismar	LA	NS-NEWOR-CN	2813934	$2,600	1.0119	$2,631	$4,736	$14,555	553%
20	Belle	WV	Janesville	WI	NS-CHGO-UP	2818131	$1,554	1.0119	$1,572	$2,830	$8,975	571%
21	Belle	WV	Laredo	TX	NS-ESTL-UP	2818221	$1,978	1.0119	$2,001	$3,602	$5,950	297%
22	Belle	WV	Laredo	TX	NS-ESTL-UP	2818131	$1,978	1.0119	$2,001	$3,602	$9,000	450%
23	Belle	WV	Lemont	IL	NS-CHGO-BNSF	2813980	$1,573	1.0119	$1,592	$2,865	$8,975	564%
24	Belle	WV	Los Angeles	CA	NS-STRTR-BNSF	2813934	$1,773	1.0119	$1,794	$3,229	$8,975	500%
25	Belle	WV	Los Angeles	CA	NS-CHGO-UP	2818130	$1,579	1.0119	$1,598	$2,876	$6,000	376%
26	Removed											
27	Belle	WV	Milladale	IL	NS-CHGO-CN	2818131	$1,555	1.0119	$1,574	$2,832	$8,975	570%
28	Removed											
29	Belle	WV	Saint Paul	MN	NS-CHGO-BNSF	2818221	$1,731	1.0119	$1,754	$3,157	$6,000	342%
30	Belle	WV	San Dimas	CA	NS-CHGO-UP	2813980	$1,701	1.0119	$1,721	$3,098	$8,975	521%
31	Removed											
32	Belle	WV	St Gabriel	LA	NS-NEWOR-CN	2813934	$2,822	1.0119	$2,855	$5,140	$14,555	510%
33	Belle	WV	St Joseph	MO	NS-KCITY-UP	2818130	$2,468	1.0119	$2,497	$4,495	$6,465	259%
34	Removed											
35	Belle	WV	Strang	TX	NS-ESTL-UP	2818221	$2,055	1.0119	$2,080	$3,745	$5,950	286%
36	Belle	WV	Strang	TX	NS-ESTL-BNSF	2813934	$1,687	1.0119	$1,707	$3,073	$9,000	527%
37	Belle	WV	Strang	TX	NS-ESTL-UP	2819183	$1,806	1.0119	$1,827	$3,289	$4,214	231%
38	Removed											
39	Belle	WV	Texas City	TX	NS-ESTL-UP	2813934	$1,888	1.0119	$1,910	$3,439	$9,000	471%
40	Belle	WV	Verona	MO	NS-ESTL-BNSF	2813934	$1,958	1.0119	$1,981	$3,566	$9,000	454%
41	Belle	WV	West Memphis	AR	NS-KCITY-UP	2813934	$2,467	1.0119	$2,496	$4,493	$11,400	457%
42	Belle	WV	Winfield Spur	LA	NS-MLRID-KCS	2813980	$2,386	1.0119	$2,415	$4,346	$12,588	521%
43	Belle	WV	Wichita	KS	NS-ESTL-BNSF	2813934	$1,999	1.0119	$2,023	$3,641	$9,000	449%
44	Bloomington	TX	Greenville	SC	UP-NEWOR-NS	2821142	$1,717	1.0119	$1,737	$3,127	$5,713	329%
45	Bloomington	TX	Washington, Warren	NJ	UP-ESTL-NS	2821142	$2,393	1.0119	$2,422	$4,359	$9,013	372%
46	Removed											
47	Charleston, Bradley	TN	Woodstock	TN	NS-MEMPH-CN	2812220	$1,095	1.0119	$1,108	$1,994	$3,000	271%
48	Cresap	WV	Edgemoor	DE	CSXT-HAGTN-NS	2991315	$666	1.0119	$674	$1,213	$3,356	498%
49	Dowling	TX	Fort Mill	SC	KCS MERID NS	2815112	$1,800	1.0119	$1,821	$3,279	$5,425	298%
50	Edgemoor	DE	Garland	TX	NS-MLRID-KCS	2816130	$2,901	1.0119	$2,935	$5,284	$8,774	299%
51	Edgemoor	DE	Gross	MI	NS CHGO-CN	2816130	$2,215	1.0119	$2,241	$4,034	$9,200	411%
52	Edgemoor	DE	Laredo	TX	NS-ESTL-UP	2816130	$2,567	1.0119	$2,597	$4,675	$10,272	396%
53	Edgemoor	DE	Madawaska	ME	NS ROUPT-CN	2816130	$1,322	1.0119	$1,338	$2,408	$4,700	351%
54	Edgemoor	DE	Pasadena	TX	NS ESTL-UP	2819971	$2,513	1.0119	$2,542	$4,576	$13,865	545%
55	Edgemoor	DE	Port Huron	MI	NS-BLTP-CN	2816130	$1,722	1.0119	$1,743	$3,137	$6,920	397%
56	Edgemoor	DE	Portland	ME	NS-MCV PAS-AYERM ST	2816130	$1,319	1.0119	$1,335	$2,402	$4,700	352%
57	Edgemoor	DE	Portland	OR	NS CHGO-BNSF	2816130	$2,238	1.0119	$2,264	$4,076	$9,200	406%
58	Edgemoor	DE	Quinnesec	MI	NS-CHGO-CN	2816130	$2,215	1.0119	$2,241	$4,034	$9,200	411%
59	Edgemoor	DE	Rolaya	ME	NS-MCV-PAS AYERM-ST	2816130	$1,321	1.0119	$1,339	$2,410	$4,700	351%
60	Edgemoor	DE	Rumford	ME	NS-MCV-PAS AYERM ST	2816130	$1,319	1.0119	$1,335	$2,402	$4,700	352%
61	Removed											
62	Edgemoor	DE	Shawmut	ME	NS MCV-PAS-AYERM-ST	2816130	$1,320	1.0119	$1,336	$2,405	$4,700	352%

Variable Cost, Jurisdictional Threshold, Tariff Rate and
Revenue/Variable Cost Ratios Per Car for DuPont Movements - 4Q10

	Origin City (1)	ST	Destination City (2)	ST	Railroad(s) (3)	Commodity (4)	Phase III Cost Base Year 2010 (5)	Index to 4Q10 (6)	4Q2010 Phase III Cost 1/ (7)	Jurisdictional Threshold 2/ (8)	Tariff Rate 3/ (9)	Revenue/Variable Cost Ratio 4/ (10)
63	Edgemoor	DE	Smoky	CA	NS CHGO-UP	2816130	$2,242	1.0119	$2,269	$4 083	$9,200	406%
64	Edgemoor	DE	Snoosy	CA	NS STRTR-BNSF	2816130	$2 413	1.0119	$2 441	$4,394	$5,101	209%
65	Edgemoor	DE	St Paul	MN	NS CHGO UP	2816130	$2,239	1.0119	$2 266	$4,078	$9,200	406%
66	Removed											
67	Edgemoor	DE	West Monroe	LA	NS-MERID-KCS	2816130	$2,907	1.0119	$2 942	$5,295	$8,774	298%
68	Edgemoor	DE	Wheeling	IL	NS-CHGO-CN	2816130	$2,226	1.0119	$2,253	$4,055	$9,200	408%
69	Enid	OK	Edgemoor	DE	BNSF-ESTL-NS	2991315	$2,578	1.0119	$2,609	$4,696	$6,075	233%
70	Removed											
71	Gregory	TX	Dragon	MS	UP NEWOR NS	2813984	$510	1.0119	$516	$929	$2,450	475%
72	Removed											
73	Gregory	TX	Royce	NJ	UP-ESTL-NS	2813984	$2,721	1.0119	$2,754	$4 957	$13,730	499%
74	Removed											
75	Lemont	IL	Edgemoor	DE	BNSF-CHGO-NS	2991315	$2 136	1.0119	$2,161	$3,890	$6,389	296%
76	Lemoyne	AL	Artesia	MS	NS-MERID-KCS	4810560	$1,263	1.0119	$1 278	$2,300	$8 395	657%
77	McIntosh	AL	Burnside	LA	NS MOBIL-CN	2819330	$319	1.0119	$322	$580	$1,700	527%
78	McIntosh	AL	Deltsle	MS	NS MOBIL-CN-HATBG-KCS	2812815	$323	1.0119	$327	$588	$1,700	520%
79	McIntosh	AL	Deltsle	MS	NS MOBIL-CN-HATBG-KCS	2812220	$329	1.0119	$332	$598	$1 700	511%
80	McIntosh	AL	Orange	TX	NS-NEWOR-UP	2812220	$1,608	1.0119	$1,627	$2,929	$8 611	529%
81	McIntosh	AL	Woodstock	TN	NS-MOBIL-CN	2812220	$328	1.0119	$332	$597	$1 700	512%
82	Orange	TX	Greenville	SC	UP-NEWOR NS	2821142	$2 092	1.0119	$2,117	$3,810	$5,713	270%
83	Orange	TX	Washington, Warren	NJ	UP-ESTL-NS	2821142	$2,235	1.0119	$2,262	$4,072	$9,013	398%
84	Pascagoula	MS	Fort Mill	SC	MSE-MOBIL-NS	2815112	$2,090	1.0119	$2 115	$3,807	$6,295	298%
85	Pascagoula	MS	Lemoyne	AL	MSE-MOBIL-NS	2815112	$279	1.0119	$282	$508	$2,577	914%
86	Strang	TX	Lemoyne	AL	UP-NEWOR-NS	2812350	$1 796	1.0119	$1,817	$3,271	$5 215	287%
87	Beauharnois	PQ	Edgemoor	DE	CSXT BUFF-NS	2812815	$1,444	1.0119	$1,461	$2,629	$7,022	481%
88	Removed											
89	Belle	WV	Gainesville	GA	NS-CINTI-CSXT	2813980	$1,458	1.0119	$1 476	$2,656	$7,281	493%
90	Belle	WV	Port Hanville	MS	NS ATLA-CSXT-ANSLE-PBVR	2813934	$2,456	1.0119	$2,485	$4,474	$9,585	386%
91	Belle	WV	Theodore	AL	NS-CINTI-CSXT	2813934	$1,449	1.0119	$1,466	$2,639	$7 281	497%
92	Bellwood	VA	Dallas	GA	CSXT PTRSB NS	2819315	$2 259	1.0119	$2,286	$4,115	$5,051	221%
93	Bellwood	VA	Fort Mill	SC	CSXT-CHLTE-NS	2819315	$573	1.0119	$580	$1,044	$992	171%
94	Bellwood	VA	Rockwell	NC	CSXT-PTRSB-NS	2819315	$964	1.0119	$975	$1,756	$2,700	277%
95	Removed											
96	Danville	VA	Ampthill	VA	NS PTRSB-CSXT	3274110	$634	1.0119	$641	$1,154	$1,585	247%
97	Edgemoor	DE	New Johnsonville	TN	NS-CINTI CSXT	2816130	$2,121	1.0119	$2,146	$3,862	$8,966	418%
98	Enid	Ok	Edgemoor	DE	BNSF ESTL-NS	2991315	$3,113	1.0119	$3,150	$5,671	$6,986	222%
99	Loudon	TN	Grainger	NC	NS-CHATT-CSXT	2818512	$572	1.0119	$579	$1,042	$1,490	257%
100	Loudon	TN	Grainger	NC	NS-CHATT-CSXT	2818512	$439	1.0119	$444	$799	$1 684	379%
101	Miami Fort	OH	Dallas	GA	CSXT-CINTI-NS	2819315	$1 534	1.0119	$1 553	$2,795	$3,532	227%
102	Miami Fort	OH	Gracewood	GA	CSXT CHATT-NS	2819325	$1 385	1.0119	$1,402	$2,523	$5,400	385%
103	Miami Fort	OH	McIntosh	AL	CSXT-CHATT NS	2819340	$974	1.0119	$985	$1,773	$5 638	572%
104	Removed											
105	Removed											
106	Miami Fort	OH	Pepper	VA	CSXT-CINTI-NS	2819345	$2,053	1.0119	$2,077	$3,739	$3,000	144%
107	Nitrium	WV	Belle	WV	CSXT-CINTI-NS	2812220	$1,419	1.0119	$1 507	$2,713	$4 800	319%
108	Nitrium	WV	Danville	VA	CSXT LYNCH NS	2812220	$380	1.0119	$384	$691	$2,520	656%
109	New Johnsonville	TN	Chapman	PA	CSXT-CINTI-NS	2816130	$2,104	1.0119	$2,129	$3,832	$7,151	336%
110	Removed											
111	New Johnsonville	TN	Morrow	GA	CSXT-CHATT NS	2816130	$670	1.0119	$678	$1,221	$4 500	664%
112	Niagara Falls	NY	Belle	WV	CSXT CLMBO NS	2812220	$742	1.0119	$751	$1 352	$3,000	399%
113	Niagara Falls	NY	Edgemoor	DE	CSXT-BUFF-NS	2812815	$1,468	1.0119	$1 485	$2,673	$7,022	473%
114	Niagara Falls	NY	Edgemoor	DE	CSXT BUFF NS	2812220	$1,498	1.0119	$1,515	$2,728	$3,800	251%
115	Pascagoula	MS	Fort Mill	SC	CSXT ATLA-NS	2815112	$1 194	1.0119	$1,208	$2,174	$5,000	414%
116	Starke	FL	Huntsville	AL	CSXT DCTUR NS	1441325	$285	1.0119	$288	$519	$1 025	355%
117	Starke	FL	Huntsville	AL	CSXT DCTUR-NS	1441325	$439	1.0119	$444	$799	$1,128	254%
118	Wurtland	KY	Fort Mill	SC	CSXT-CHLTE-NS	2819315	$576	1.0119	$583	$1,049	$992	170%
119	Wurtland	KY	Mcletosh	AL	CSXT-BHAM NS	2819315	$781	1.0119	$790	$1,422	$2,000	253%
120	Belle	WV	Divine	IL	NS-PINE-CN	2813980	$1 496	1.0119	$1,514	$2,726	$7,502	495%
121	Belle	WV	Mapleton	IL	NS-LOGPT TPW	2813934	$1,325	1.0119	$1,342	$2,416	$7,332	546%
122	Burnside	LA	Gracewood	GA	CN NEWOR-NS	2819325	$1,919	1.0119	$1,941	$3 494	$9,000	464%
123	Lemont	IL	Edgemoor	DE	BNSF CHGO-NS	2991315	$2,636	1.0119	$2,667	$4,800	$7,347	275%
124	New Johnsonville	TN	McDonough	GA	CSXT CHATT NS	2816130	$942	1.0119	$953	$1,716	$4 500	472%
125	Charleston	TN	Woodstock	TN	NS-MEMPH-CN	2812410	$1,080	1.0119	$1,093	$1,967	xxx	xxx
126	Reybold	DE	Albuquerque	NM	NS STRTR-BNSF	2819315	$2,306	1.0119	$2,333	$4,200	xxx	xxx
127	Reybold	DE	Baltimore	MD	NS-BALBV-CSXT	2819315	$387	1.0119	$391	$704	xxx	xxx
128	Reybold	DE	Blair	NF	NS-CHGO-UP	2819315	$2,140	1.0119	$2,165	$3,897	xxx	xxx
129	Reybold	DE	Brewton	AL	NS-BHAM-CSXT	2819315	$2,419	1.0119	$2,447	$4,405	xxx	xxx
130	Reybold	DE	Castle Hayne	NC	NS-CHLTE-CSXT	2819315	$1,676	1.0119	$1,696	$3,053	xxx	xxx
131	Reybold	DE	Clifton	AZ	NS KCITY-UP	2819315	$3,079	1.0119	$3,116	$5,608	xxx	xxx
132	Reybold	DE	Corson	SD	NS-CHGO BNSF	2819315	$2,139	1.0119	$2,165	$3,896	xxx	xxx
133	Removed											
134	Reybold	DE	Ferguson	MS	NS MEMPHIS-CN	2819315	$2,795	1.0119	$2 828	$5,091	xxx	xxx
135	Reybold	DE	Hastings	NE	NS CHGO-BNSF	2819315	$2,139	1.0119	$2,165	$3,897	xxx	xxx
136	Reybold	DE	Indianapolis	IN	NS-CINTI-CSXT	2819315	$1,928	1.0119	$1,951	$3,511	xxx	xxx
137	Reybold	DE	Omaha	NE	NS-CHGO-UP	2819315	$2,140	1.0119	$2 165	$3,897	xxx	xxx
138	Reybold	DE	Orange	TX	NS-ESTL-BNSF	2819315	$2,555	1.0119	$2,586	$4,654	xxx	xxx
139	Reybold	DE	Phoenix	AZ	NS-STRTR BNSF	2819315	$2,306	1.0119	$2,333	$4,200	xxx	xxx
140	Reybold	DE	Sioux City	IA	NS-CHGO-BNSF	2819315	$2,139	1.0119	$2,165	$3,897	xxx	xxx
141	Reybold	DE	Toledo	OH	NS-TOLED-CSXT	2819315	$2,044	1.0119	$2,068	$3,723	xxx	xxx
142	Reybold	DE	Washington	WV	NS-HAGTN-CSXT	2819315	$641	1.0119	$648	$1,167	xxx	xxx

1/ Column (5) x Column (6)
2/ Column (7) x 1.8
3/ Tariff Rate from Rebuttal Exhibit II-A-16
4/ Column (9)/Column (7)

TAB 8

Variable Cost, Jurisdictional Threshold, Tariff Rate and
Revenue/Variable Cost Ratios Per Car for DuPont Movements - 1Q11

	Origin City (1)	ST	Destination City (2)	ST	Railroad(s) (3)	Commodity (4)	Phase III Cost Base Year 2011 (5)	Index to 1Q11 (6)	Phase III Cost 1/ (7)	1Q2011 Jurisdictional Threshold 2/ (8)	Tariff Rate 3/ (9)	Revenue/Variable Cost Ratio 4/ (10)
Exhibit A - Local Moves												
1	Removed											
2	Bayway	NJ	Waynesville	NC	NS	2819315	$2,606	0.9730	$2,536	$4,564	$12,855	507%
3	Belle	WV	Danville	IL	NS	2813980	$1,907	0.9730	$1,855	$3,339	$11,836	638%
4	Removed											
5	Removed											
6	Removed											
7	Removed											
8	Removed											
9	Belle	WV	Wyandotte	MI	NS	2813934	$1,414	0.9730	$1,375	$2,476	$8,814	641%
10	Charleston	TN	Edgemoor	DE	NS	2812815	$2,581	0.9730	$2,511	$4,521	$18,562	739%
11	Edgemoor	DE	Chicago	IL	NS	2816130	$2,583	0.9730	$2,513	$4,523	$9,844	392%
12	Edgemoor	DE	Chillicothe	OH	NS	2816130	$2,515	0.9730	$2,447	$4,405	$6,510	266%
13	Edgemoor	DE	Mabrt	AI	NS	2816130	$3,324	0.9730	$3,234	$5,821	$12,376	383%
14	Edgemoor	DE	Riverwood Intl	GA	NS	2816130	$3,015	0.9730	$2,934	$5,281	$6,270	214%
15	Edgemoor	DE	Wabash	IN	NS	2816130	$2,644	0.9730	$2,573	$4,631	$6,627	258%
16	Lemoyne	AL	Gaut	SC	NS	4810560	$2,723	0.9730	$2,649	$4,769	$9,136	194%
17	Loudon	TN	Braithwaite	LA	NS	2818312	$2,222	0.9730	$2,162	$3,891	$4,125	191%
18	Louisville	KY	Decatur	IL	NS	2819450	$1,417	0.9730	$1,379	$2,482	$6,596	333%
19	Louisville	KY	Lafayette	IN	NS	2819450	$1,774	0.9730	$1,726	$3,107	$6,139	356%
20	Removed											
21	Removed											
22	McIntosh	AL	Lemoyne	AL	NS	2812220	$561	0.9730	$546	$982	$1,605	294%
23	Reybold	DE	Detroit	MI	NS	2819315	$2,067	0.9730	$2,011	$3,619	xxx	xxx
24	Reybold	DE	Fort Mill	SC	NS	2819315	$2,072	0.9730	$2,016	$3,628	xxx	xxx
25	Reybold	DE	Morrisville	PA	NS	2819315	$650	0.9730	$633	$1,139	xxx	xxx
Exhibit B - Joint Moves												
1	Belle	WV	Anaheim	CA	NS-CHGO UP	2813980	$1,782	0.9730	$1,734	$3,121	$12,100	698%
2	Belle	WV	Baypor	TX	NS ESTL-UP	2818620	$2,242	0.9730	$2,181	$3,926	$11,812	542%
3	Removed											
4	Belle	WV	Brownsville	TX	NS ESTL-UP	2818221	$2,217	0.9730	$2,157	$3,882	$11,812	548%
5	Belle	WV	Burley	ID	NS-CHGO-UP	2813934	$1,782	0.9730	$1,734	$3,121	$12,100	698%
6	Belle	WV	Cadet	MO	NS-KCITY UP	2813934	$2,776	0.9730	$2,701	$4,862	$19,539	721%
7	Removed											
8	Belle	WV	Channelview	TX	NS-ESTL-UP	2818130	$2,051	0.9730	$1,996	$3,593	$11,812	592%
9	Belle	WV	City of Commerce	CA	NS STRTR BNSF	2818221	$1,935	0.9730	$1,882	$3,388	$10,242	544%
10	Belle	WV	Conroe	TX	NS ESTL-BNSF	2813934	$2,210	0.9730	$2,150	$3,871	$14,136	657%
11	Belle	WV	Corsicana	TX	NS ESTL-UP	2813934	$2,099	0.9730	$2,042	$3,676	$14,136	692%
12	Removed											
13	Belle	WV	East Billings	MT	NS-CHGO-BNSF	2818130	$1,759	0.9730	$1,712	$3,081	$8,533	499%
14	Belle	WV	Ethyl	AR	NS ESTL-UP-MCND-LNW	2813934	$2,117	0.9730	$2,060	$3,708	$14,136	686%
15	Belle	WV	Finley	WA	NS-CHGO BNSF	2813934	$1,783	0.9730	$1,735	$3,123	$12,100	697%
16	Removed											
17	Belle	WV	Freeport	TX	NS-ESTL-UP	2818130	$1,950	0.9730	$1,898	$3,416	$11,812	622%
18	Belle	WV	Garyville	LA	NS-NEWOR-CN	2813934	$3,207	0.9730	$3,121	$5,617	$22,732	728%
19	Belle	WV	Gessmar	LA	NS NEWOR-CN	2813934	$2,928	0.9730	$2,849	$5,128	$22,732	798%
20	Belle	WV	Janesville	WI	NS-CHGO-UP	2818131	$1,745	0.9730	$1,698	$3,056	$12,100	713%
21	Belle	WV	Laredo	TX	NS ESTL-UP	2818221	$2,217	0.9730	$2,157	$3,882	$11,812	548%
22	Belle	WV	Laredo	TX	NS ESTL-UP	2818131	$2,217	0.9730	$2,157	$3,882	$14,136	655%
23	Belle	WV	Lorenzo	IL	NS-CHGO-BNSF	2813980	$1,773	0.9730	$1,725	$3,106	$12,100	701%
24	Belle	WV	Los Angeles	CA	NS STRTR-BNSF	2813934	$1,987	0.9730	$1,933	$3,479	$13,450	696%
25	Belle	WV	Los Angeles	CA	NS-CHGO-UP	2818130	$1,770	0.9730	$1,722	$3,099	$8,533	496%
26	Removed											
27	Belle	WV	Millsdale	IL	NS-CHGO-CN	2818131	$1,753	0.9730	$1,706	$3,070	$12,100	709%
28	Removed											
29	Belle	WV	Saint Paul	MN	NS-CHGO-BNSF	2818221	$1,944	0.9730	$1,891	$3,405	$8,533	451%
30	Belle	WV	San Dimas	CA	NS CHGO-UP	2813980	$1,906	0.9730	$1,855	$3,338	$12,100	652%
31	Removed											
32	Belle	WV	St Gabriel	LA	NS-NEWOR-CN	2813934	$3,176	0.9730	$3,090	$5,561	$22,732	736%
33	Belle	WV	St Joseph	MO	NS KCITY UP	2818130	$2,779	0.9730	$2,704	$4,867	$13,535	501%
34	Removed											
35	Belle	WV	Strang	TX	NS ESTL-UP	2818221	$2,304	0.9730	$2,242	$4,035	$11,812	527%
36	Belle	WV	Strang	TX	NS-ESTL-BNSF	2813934	$1,891	0.9730	$1,839	$3,311	$14,136	768%
37	Belle	WV	Strang	TX	NS ESTL-UP	2819183	$2,021	0.9730	$1,966	$3,539	$4,531	230%
38	Removed											
39	Belle	WV	Texas City	TX	NS-ESTL-UP	2813934	$2,116	0.9730	$2,059	$3,706	$14,136	687%
40	Belle	WV	Verona	MO	NS-ESTL-BNSF	2813934	$2,197	0.9730	$2,137	$3,847	$14,136	661%
41	Belle	WV	West Memphis	AR	NS KCITY UP	2813934	$2,765	0.9730	$2,690	$4,842	$19,539	726%
42	Belle	WV	Winfield Spur	LA	NS-MERID-KCS	2813980	$2,677	0.9730	$2,604	$4,687	$19,888	764%
43	Belle	WV	Wichita	KS	NS LSTL-BNSF	2813934	$2,241	0.9730	$2,180	$3,925	$14,136	648%
44	Bloomington	TX	Greenville	SC	UP-NEWOR-NS	2821142	$1,931	0.9730	$1,879	$3,382	$6,113	325%
45	Bloomington	TX	Washington, Warren	NJ	UP-ESTL-NS	2821142	$2,689	0.9730	$2,617	$4,710	$9,644	369%
46	Removed											
47	Charleston, Bradley	TN	Woodstock	TN	NS-MEMPH-CN	2812220	$1,205	0.9730	$1,173	$2,111	$4,170	356%
48	Cresap	WV	Edgemoor	DE	CSXT HAGTN NS	2991315	$747	0.9730	$727	$1,309	$3,591	494%
49	Dowling	TX	Fort Mill	SC	KCS MERID-NS	2815112	$2,018	0.9730	$1,963	$3,534	$7,690	392%
50	Edgemoor	DE	Garland	TX	NS-MERID-KCS	2816130	$3,247	0.9730	$3,159	$5,687	$9,388	297%
51	Edgemoor	DE	Gross	MI	NS-CHGO-CN	2816130	$2,481	0.9730	$2,413	$4,344	$9,844	408%
52	Edgemoor	DE	Laredo	TX	NS ESTL-UP	2816130	$2,871	0.9730	$2,794	$5,029	$10,991	393%
53	Edgemoor	DE	Madawaska	ME	NS ROUPT CN	2816130	$1,481	0.9730	$1,441	$2,594	$5,029	349%
54	Edgemoor	DE	Pasadena	TX	NS ESTL-UP	2819971	$2,811	0.9730	$2,735	$4,923	$24,453	894%
55	Edgemoor	DE	Port Huron	MI	NS BUFF-CN	2816130	$1,931	0.9730	$1,878	$3,381	$7,454	394%
56	Edgemoor	DE	Portland	ME	NS MCV-PAS-AYERM-ST	2816130	$1,478	0.9730	$1,438	$2,589	$5,029	350%
57	Edgemoor	DE	Portland	OR	NS-CHGO BNSF	2816130	$2,504	0.9730	$2,436	$4,385	$9,844	404%
58	Edgemoor	DE	Quinnesec	MI	NS-CHGO-CN	2816130	$2,479	0.9730	$2,412	$4,341	$9,844	408%
59	Edgemoor	DE	Raleys	ME	NS-MCV-PAS-AYERM-ST	2816130	$1,482	0.9730	$1,442	$2,596	$5,029	349%
60	Edgemoor	DE	Rumford	ME	NS-MCV-PAS AYERM-ST	2816130	$1,478	0.9730	$1,438	$2,588	$5,029	350%
61	Removed											
62	Edgemoor	DE	Shawmut	ME	NS-MCV-PAS AYERM-ST	2816130	$1,479	0.9730	$1,439	$2,591	$5,029	349%

Variable Cost, Jurisdictional Threshold, Tariff Rate and
Revenue/Variable Cost Ratios Per Car for DuPont Movements - 1Q11

	Origin City (1)	ST	Destination City (2)	ST	Railroad(s) (3)	Commodity (4)	Phase III Cost Rate Year 2011 (5)	1Q2011 Index to 1Q11 (6)	1Q2011 Phase III Cost 1/ (7)	1Q2011 Jurisdictional Threshold 2/ (8)	1Q2011 Tariff Rate 3/ (9)	1Q2011 Revenue/Variable Cost Ratio 4/ (10)
63	Edgemoor	DE	Seeboy	CA	NS-CHGO-UP	2816130	$2,508	0 9730	$2,440	$4,393	$9,844	403%
64	Edgemoor	DE	Seeboy	CA	NS-STRTR-BNSF	2816130	$2,699	0 9730	$2 626	$4,727	$6,205	236%
65	Edgemoor	DE	St Paul	MN	NS-CHGO-UP	2816130	$2,507	0 9730	$2,439	$4,391	$9,844	404%
66	Removed											
67	Edgemoor	DE	West Monroe	LA	NS-MERID-KCS	2816130	$3,258	0 9730	$3,170	$5,706	$9,388	296%
68	Edgemoor	DE	Wheeling	IL	NS-CHGO-CN	2816130	$2,525	0 9730	$2,456	$4,422	$9,844	401%
69	Enid	OK	Edgemoor	DE	BNSF ESTL-NS	2991315	$2,893	0 9730	$2,814	$5,066	$12,624	449%
70	Removed											
71	Gregory	TX	Dragon	MS	UP-NEWOR-NS	2813984	$573	0 9730	$557	$1,003	$2,486	446%
72	Removed											
73	Gregory	TX	Royce	NJ	UP-ESTL-NS	2813984	$3,050	0 9730	$2,967	$5,341	$21,912	738%
74	Removed											
75	Lemont	IL	Edgemoor	DE	BNSF-CHGO-NS	2991315	$2,374	0.9730	$2,310	$4,158	$8,384	363%
76	Lamoyne	AL	Artesia	MS	NS MERID-KCS	4810560	$1,410	0.9730	$1,372	$2,470	$8,983	655%
77	McIntosh	AL	Burnside	LA	NS-MOBIL-CN	2819330	$358	0 9730	$348	$627	$2,400	689%
78	McIntosh	AL	Delisle	MS	NS-MOBIL-CN-HATBG-KCS	2812815	$362	0 9730	$353	$635	$2,900	823%
79	McIntosh	AL	Delisle	MS	NS-MOBIL-CN-HATBG-KCS	2812220	$369	0.9730	$359	$646	$2,400	669%
80	McIntosh	AL	Orange	TX	NS-NEWOR UP	2812220	$1,797	0 9730	$1,748	$3 147	$9,214	527%
81	McIntosh	AL	Woodstock	TN	NS-MOBIL-CN	2812220	$368	0 9730	$358	$645	$2,400	670%
82	Orange	TX	Greenville	SC	UP-NEWOR-NS	2821142	$2,157	0 9730	$2,293	$4 127	$6,113	267%
83	Orange	TX	Washington, Warren	NJ	UP-ESTL-NS	2821142	$2,512	0.9730	$2,444	$4,399	$9,644	395%
84	Pascagoula	MS	Fort Mill	SC	MSE-MOBIL-NS	2815112	$2,349	0 9730	$2,286	$4,114	$8,928	391%
85	Pascagoula	MS	Lamoyne	AL	MSE-MOBIL-NS	2815112	$314	0 9730	$305	$550	$2,758	903%
86	Strang	TX	Lamoyne	AL	UP-NEWOR-NS	2812350	$2,011	0 9730	$1,957	$3,522	$6,899	353%
87	Beauharnois	PQ	Edgemoor	DE	CSXT BUFF-NS	2812815	$1 613	0 9730	$1,570	$2,826	$12,375	788%
88	Removed											
89	Belle	WV	Gainesville	GA	NS-CINTI-CSXT	2813980	$1,635	0 9730	$1 591	$2,864	$10,487	659%
90	Belle	WV	Port Bienville	MS	NS-ATLA-CSXT ANSLE-PBVR	2813934	$2,754	0 9730	$2,679	$4,823	$12,839	479%
91	Belle	WV	Theodore	AL	NS-CINTI CSXT	2813934	$1,625	0 9730	$1 581	$2,845	$10,487	663%
92	Bellwood	VA	Dallas	GA	CSXT PTRSB NS	2819315	$2,602	0 9730	$2,531	$4 557	$8,936	353%
93	Bellwood	VA	Fort Mill	SC	CSXT-CHLTE-NS	2819315	$643	0 9730	$626	$1 126	$1,061	170%
94	Bellwood	VA	Rockwell	NC	CSXT-PTRSB NS	2819315	$1 106	0 9730	$1,076	$1 937	$3,431	319%
95	Removed											
96	Danville	VA	Ampcall	VA	NS PTRSB-CSXT	3274110	$718	0 9730	$698	$1,257	$1,585	227%
97	Edgemoor	DE	New Johnsonville	TN	NS-CINTI-CSXT	2816130	$2 375	0.9730	$2,310	$4,159	$9,085	393%
98	Enid	OK	Edgemoor	DE	BNSF ESTL-NS	2991315	$3,602	0 9730	$3,505	$6,309	$8,409	240%
99	Loudon	TN	Grangers	NC	NS-CHATT-CSXT	2818512	$642	0 9730	$624	$1,124	$1,690	339%
100	Loudon	TN	Grangers	NC	NS-CHATT CSXT	2818512	$493	0 9730	$480	$863	$1,684	351%
101	Miami Fort	OH	Dallas	GA	CSXT CINTI NS	2819315	$1,757	0 9730	$1 710	$3,078	$3,825	224%
102	Miami Fort	OH	Gracewood	GA	CSXT-CHATT-NS	2819325	$1,551	0 9730	$1 509	$2,717	$6,224	412%
103	Miami Fort	OH	McIntosh	AL	CSXT-CHATT-NS	2819340	$1,090	0.9730	$1,061	$1,909	$6,210	585%
104	Removed											
105	Removed											
106	Miami Fort	OH	Pepper	VA	CSXT-CINTI-NS	2819345	$2,350	0 9730	$2,287	$4 116	$3,411	149%
107	Nitrium	WV	Belle	WV	CSXT-CINTI-NS	2812220	$1,665	0 9730	$1,620	$2,915	$5,505	340%
108	Nitrium	WV	Danville	VA	CSXT-LYNCH NS	2812220	$426	0 9730	$414	$746	$2,553	616%
109	New Johnsonville	TN	Chapman	PA	CSXT-CINTI-NS	2816130	$2,356	0.9730	$2,292	$4 126	$7,246	316%
110	Removed											
111	New Johnsonville	TN	Morrow	GA	CSXT CHATT-NS	2816130	$752	0 9730	$732	$1,317	$4,560	623%
112	Niagara Falls	NY	Belle	WV	CSXT-CLMBO-NS	2812220	$831	0 9730	$808	$1,455	$3,051	377%
113	Niagara Falls	NY	Edgemoor	DE	CSXT-BUFF-NS	2812815	$1,621	0 9730	$1,577	$2,839	$8,033	509%
114	Niagara Falls	NY	Edgemoor	DE	CSXT BUFF-NS	2812220	$1,653	0 9730	$1,609	$2,896	$3 922	244%
115	Pascagoula	MS	Fort Mill	SC	CSXT-ATLA-NS	2815112	$1,337	0 9730	$1,301	$2,342	$3,066	389%
116	Starke	FL	Hunsville	AL	CSXT-DCTUR-NS	1441325	$321	0 9730	$312	$56'	$1,025	329%
117	Starke	FL	Huntsville	AL	CSXT DCTUR NS	1441325	$511	0 9730	$497	$895	$1,128	227%
118	Wurtland	KY	Fort Mill	SC	CSXT-CIN TE-NS	2819315	$646	0 9730	$629	$1 131	$1,005	160%
119	Wurtland	KY	McIntosh	AL	CSXT BHAM NS	2819315	$875	0 9730	$851	$1,532	$2,120	249%
120	Belle	WV	Divine	IL	NS-PINE-CN	2813980	$1,683	0 9730	$1,637	$2,947	$8,265	505%
121	Belle	WV	Mapleton	IL	NS LOGPT-TPW	2813934	$1,488	0 9730	$1,448	$2,606	$7,845	542%
122	Burnside	LA	Gracewood	GA	CN-NEWOR-NS	2819325	$2,159	0 9730	$2 100	$3 780	$10,777	513%
123	Lemont	IL	Edgemoor	DE	BNSF-CHGO-NS	2991315	$3 025	0 9730	$2,944	$5,298	$9,864	335%
124	New Johnsonville	TN	McDonough	GA	CSXT-CHATT NS	2816130	$1 036	0.9730	$1,028	$1 850	$4,580	478%
125	Charleston	TN	Woodstock	TN	NS-MEMPH-CN	2812410	$1,189	0 9730	$1,157	$2,083	$9 265	801%
126	Reybold	DE	Albuquerque	NM	NS-STRTR-BNSF	2819315	$2,580	0 9730	$2,510	$4,518	xxx	xxx
127	Reybold	DE	Baltimore	MD	NS BALDV-CSXT	2819315	$449	0 9730	$437	$787	xxx	xxx
128	Reybold	DE	Blair	NE	NS-CHGO-UP	2819315	$2 395	0 9730	$2,330	$4,195	xxx	xxx
129	Reybold	DE	Brewton	AL	NS-BHAM-CSXT	2819315	$2,711	0 9730	$2,637	$4,747	xxx	xxx
130	Reybold	DE	Castle Hayne	NC	NS-CHLTE-CSXT	2819315	$1,879	0 9730	$1 828	$3,291	xxx	xxx
131	Reybold	DE	Clifton	AZ	NS KCITY-UP	2819315	$3,444	0 9730	$3,351	$6,032	xxx	xxx
132	Reybold	DE	Corson	SD	NS-CHGO BNSF	2819315	$2,394	0 9730	$2,329	$4,193	xxx	xxx
133	Removed											
134	Reybold	DE	Ferguson	MS	NS-MEMPHIS-CN	2819315	$3,130	0 9730	$3,045	$5,482	xxx	xxx
135	Reybold	DE	Hastings	NE	NS-CHGO-BNSF	2819315	$2,394	0.9730	$2,330	$4,193	xxx	xxx
136	Reybold	DE	Indianapolis	IN	NS-CINTI-CSXT	2819315	$2,163	0 9730	$2,105	$3 789	xxx	xxx
137	Reybold	DE	Omaha	NE	NS-CHGO-UP	2819315	$2,395	0.9730	$2,330	$4 194	xxx	xxx
138	Reybold	DE	Orange	TX	NS-ESTL-BNSF	2819315	$2,859	0 9730	$2,781	$5,007	xxx	xxx
139	Reybold	DE	Phoenix	AZ	NS-STRTR-BNSF	2819315	$2,579	0 9730	$2,509	$4,517	xxx	xxx
140	Reybold	DE	Sioux City	IA	NS-CHGO-BNSF	2819315	$2,394	0.9730	$2,330	$4,193	xxx	xxx
141	Reybold	DE	Toledo	OH	NS TOLED CSXT	2819315	$3,003	0 9730	$2,922	$5,259	xxx	xxx
142	Reybold	DE	Washington	WV	NS HAGTN CSXT	2819315	$718	0.9730	$699	$1,258	xxx	xxx

1/ Column (5) x Column (6)
2/ Column (7) x 1 8
3/ Tariff Rate from Rebuttal Exhibit II-A-16
4/ Column (9)/Column (7)

TAB 9

Variable Cost, Jurisdictional Threshold, Tariff Rate and
Revenue/Variable Cost Ratios Per Car for DuPont Movements - 2011

	Origin City (1)	ST	Destination City (2)	ST	Railroad(s) (3)	Commodity (4)	Phase III Cost Rate Year 2011 (5)	Index to 2011 (6)	Phase III Cost 1/ (7)	1Q2011 Jurisdictional Threshold 2/ (8)	Tariff Rate 3/ (9)	Revenue/Variable Cost Ratio 4/ (10)
Exhibit A - Local Moves												
1.	Removed											
2	Bayway	NJ	Waynesville	NC	NS	2819315	$2,606	1.0122	$2,638	$4,748	$12,855	487%
3	Belle	WV	Danville	IL	NS	2813980	$1,907	1.0122	$1,930	$3,474	$11,836	613%
4	Removed											
5	Removed											
6	Removed											
7	Removed											
8	Removed											
9	Belle	WV	Wyandotte	MI	NS	2813934	$1,414	1.0122	$1,431	$2,575	$8,814	616%
10	Charleston	TN	Edgemoor	DE	NS	2812815	$2,581	1.0122	$2,613	$4,703	$18,562	710%
11	Edgemoor	DE	Chicago	IL	NS	2816130	$2,583	1.0122	$2,614	$4,706	$9,844	377%
12	Edgemoor	DE	Chillicothe	OH	NS	2816130	$2,515	1.0122	$2,546	$4,582	$6,510	256%
13	Edgemoor	DE	Mobile	AL	NS	2816130	$3,324	1.0122	$3,364	$6,056	$12,376	368%
14	Edgemoor	DE	Riverwood Intl	GA	NS	2816130	$3,015	1.0122	$3,052	$5,494	$6,270	205%
15	Edgemoor	DE	Wabash	IN	NS	2816130	$2,644	1.0122	$2,676	$4,817	$6,627	248%
16	Lamoyne	AL	Grant	SC	NS	4810560	$2,721	1.0122	$2,756	$4,961	$5,136	186%
17	Loudon	TN	Braithwaite	LA	NS	2816512	$2,222	1.0122	$2,249	$4,048	$4,125	183%
18	Louisville	KY	Decatur	IL	NS	2819450	$1,417	1.0122	$1,434	$2,582	$4,596	320%
19	Louisville	KY	Lafayette	IN	NS	2819450	$1,774	1.0122	$1,795	$3,232	$6,139	342%
20	Removed											
21	Removed											
22	McIntosh	AL	Lamoyne	AL	NS	2812220	$561	1.0122	$568	$1,022	$1,605	283%
23	Reybold	DE	Detroit	MI	NS	2819315	$2,067	1.0122	$2,092	$3,765	$7,812	373%
24	Reybold	DE	Fort Mill	SC	NS	2819315	$2,072	1.0122	$2,097	$3,774	$6,108	291%
25.	Reybold	DE	Morrisville	PA	NS	2819315	$650	1.0122	$658	$1,185	$3,614	549%
Exhibit B - Joint Moves												
1	Belle	WV	Anaheim	CA	NS-CHGO UP	2813980	$1,782	1.0122	$1,804	$3,247	$12,100	671%
2	Belle	WV	Bayport	TX	NS ESTL-UP	2818620	$2,242	1.0122	$2,269	$4,085	$11,812	521%
3	Removed											
4	Belle	WV	Brownsville	TX	NS ESTL-UP	2818221	$2,217	1.0122	$2,244	$4,039	$11,812	526%
5.	Belle	WV	Burley	ID	NS-CHGO-UP	2813934	$1,782	1.0122	$1,804	$3,247	$12,100	671%
6	Belle	WV	Cadet	MO	NS-KCITY UP	2813934	$2,776	1.0122	$2,810	$5,058	$19,539	695%
7	Removed											
8	Belle	WV	Channelview	TX	NS ESTL-UP	2818130	$2,051	1.0122	$2,077	$3,738	$11,812	569%
9	Belle	WV	City of Commerce	CA	NS-STRTR-BNSF	2818221	$1,935	1.0122	$1,958	$3,525	$10,242	523%
10	Belle	WV	Conroe	TX	NS ESTL-BNSF	2813934	$2,210	1.0122	$2,237	$4,027	$14,136	632%
11	Belle	WV	Corsicana	TX	NS-ESTL UP	2813934	$2,099	1.0122	$2,125	$3,824	$14,136	665%
12	Removed											
13	Belle	WV	East Billings	MT	NS-CHGO-BNSF	2818130	$1,759	1.0122	$1,781	$3,205	$8,533	479%
14	Belle	WV	Ethyl	AR	NS-ESTL-UP-MCNEI LNW	2813934	$2,117	1.0122	$2,143	$3,858	$14,136	660%
15	Belle	WV	Finley	WA	NS-CHGO BNSF	2813934	$1,783	1.0122	$1,805	$3,249	$12,100	670%
16	Removed											
17	Belle	WV	Freeport	TX	NS ESTL-UP	2818130	$1,950	1.0122	$1,974	$3,553	$11,812	598%
18	Belle	WV	Garyville	LA	NS-NEWOR-CN	2813934	$3,207	1.0122	$3,247	$5,844	$22,732	700%
19	Belle	WV	Geismar	LA	NS-NEWOR-CN	2813934	$2,928	1.0122	$2,964	$5,335	$22,732	767%
20	Belle	WV	Janesville	WI	NS-CHGO UP	2818131	$1,745	1.0122	$1,766	$3,179	$12,100	685%
21	Belle	WV	Laredo	TX	NS ESTL-UP	2818221	$2,217	1.0122	$2,244	$4,039	$11,812	526%
22	Belle	WV	Laredo	TX	NS-ESTL-UP	2818131	$2,217	1.0122	$2,244	$4,039	$14,136	630%
23	Belle	WV	Lorenzo	IL	NS-CHGO-BNSF	2813980	$1,773	1.0122	$1,795	$3,231	$12,100	674%
24	Belle	WV	Los Angeles	CA	NS-STRTR-BNSF	2813934	$1,987	1.0122	$2,011	$3,620	$13,450	669%
25	Belle	WV	Los Angeles	CA	NS-CHGO-UP	2818130	$1,770	1.0122	$1,791	$3,224	$8,533	476%
26	Removed											
27	Belle	WV	Millsdale	IL	NS-CHGO-CN	2818131	$1,753	1.0122	$1,774	$3,194	$12,100	682%
28	Removed											
29	Belle	WV	Saint Paul	MN	NS-CHGO-BNSF	2818221	$1,944	1.0122	$1,968	$3,542	$8,533	434%
30	Belle	WV	San Dimas	CA	NS-CHGO UP	2813980	$1,906	1.0122	$1,929	$3,473	$12,100	627%
31	Removed											
32	Belle	WV	St Gabriel	LA	NS-NEWOR-CN	2813934	$3,176	1.0122	$3,214	$5,786	$22,732	707%
33	Belle	WV	St Joseph	MO	NS-KCITY-UP	2818130	$2,779	1.0122	$2,813	$5,065	$19,535	481%
34	Removed											
35	Belle	WV	Strang	TX	NS ESTL-UP	2818221	$2,304	1.0122	$2,332	$4,198	$11,812	506%
36	Belle	WV	Strang	TX	NS-ESTL-BNSF	2813934	$1,891	1.0122	$1,914	$3,445	$14,136	739%
37	Belle	WV	Strang	TX	NS-ESTL-UP	2819183	$2,021	1.0122	$2,045	$3,681	$4,606	225%
38	Removed											
39	Belle	WV	Texas City	TX	NS ESTL-UP	2813934	$2,116	1.0122	$2,142	$3,856	$14,136	660%
40	Belle	WV	Verona	MO	NS-ESTL-BNSF	2813934	$2,197	1.0122	$2,223	$4,002	$14,136	636%
41	Belle	WV	West Memphis	AR	NS KCITY-UP	2813934	$2,765	1.0122	$2,798	$5,037	$19,539	698%
42	Belle	WV	Winfield Spur	LA	NS-MERID-KCS	2813980	$2,677	1.0122	$2,709	$4,877	$19,888	734%
43	Belle	WV	Wichita	KS	NS-ESTL-BNSF	2813934	$2,241	1.0122	$2,268	$4,083	$14,136	623%
44	Bloomington	TX	Greenville	SC	UP-NEWOR-NS	2821142	$1,931	1.0122	$1,955	$3,519	$6,113	313%
45	Bloomington	TX	Washington, Warren	NJ	UP-ESTL-NS	2821142	$2,689	1.0122	$2,722	$4,900	$9,644	354%
46	Removed											
47	Charleston Bradley	TN	Woodstock	TN	NS-MEMPH-CN	2812220	$1,205	1.0122	$1,220	$2,196	$4,170	342%
48	Cresap	WV	Edgemoor	DE	CSXT HAGTN NS	7991315	$747	1.0122	$757	$1,362	$3,591	475%
49	Dowling	TX	Fort Mill	SC	KCS-MERID-NS	2815112	$2,018	1.0122	$2,043	$3,677	$7,690	376%
50	Edgemoor	DE	Garland	TX	NS-MERID-KCS	2816130	$3,247	1.0122	$3,287	$5,916	$9,388	286%
51.	Edgemoor	DE	Gross	MI	NS CHGO-CN	2816130	$2,481	1.0122	$2,511	$4,519	$9 844	392%
52	Edgemoor	DE	Laredo	TX	NS-ESTL-UP	2816130	$2,871	1.0122	$2,906	$5,232	$10,991	378%
53	Edgemoor	DE	Madawaska	ME	NS-ROUPT-CN	2816130	$1,481	1.0122	$1,499	$2,698	$5,029	335%
54	Edgemoor	DE	Pasadena	TX	NS-ESTL-UP	2819971	$2,811	1.0122	$2,845	$5,121	$24,453	859%
55	Edgemoor	DE	Port Huron	MI	NS-BUFF-CN	2816130	$1,931	1.0122	$1 954	$3,517	$7,404	379%
56	Edgemoor	DE	Portland	ME	NS-MCV PAS-AYERM ST	2816130	$1,478	1.0122	$1,496	$2,693	$5,029	336%
57	Edgemoor	DE	Portland	OR	NS-CHGO-BNSF	2816130	$2,504	1.0122	$2,534	$4,561	$9 844	388%
58	Edgemoor	DE	Quannesec	MI	NS-CHGO-CN	2816130	$2,479	1.0122	$2,509	$4,516	$9 844	392%
59	Edgemoor	DE	Ripon	WI	NS MCV-PAS-AYERM-ST	2816130	$1 482	1.0122	$1,500	$2,701	$5,029	335%
60	Edgemoor	DE	Rumford	ME	NS MCV PAS-AYERM-ST	2816130	$1 478	1.0122	$1,496	$2,692	$5,029	336%
61.	Removed											
62	Edgemoor	DE	Shawmut	ME	NS-MCV PAS AYERM-ST	2816130	$1,479	1.0122	$1,497	$2 695	$5,029	336%

Variable Cost, Jurisdictional Threshold Tariff Rate and
Revenue/Variable Cost Ratios Per Car for DuPont Movements - 2011

	Origin City (1)	ST	Destination City (2)	ST	Railroad(s) (3)	Commodity (4)	Phase III Cost Base Year 2011 (5)	Index to 2011 (6)	2Q2011 Phase III Cost 1/ (7)	Jurisdictional Threshold 2/ (8)	Tariff Rate 3/ (9)	Revenue/Variable Cost Ratio 4/ (10)
63	Edgemoor	DE	Seabay	CA	NS-CHGO UP	2816130	$2,508	1 0122	$2,539	$4,570	$9,844	388%
64	Edgemoor	DE	Seabay	CA	NS STRTR-BNSF	2816130	$2,699	1 0122	$2,732	$4,918	$10,944	401%
65	Edgemoor	DE	St Paul	MN	NS-CHGO-UP	2816130	$2,507	1 0122	$2,538	$4,568	$9 844	388%
66	Removed											
67	Edgemoor	DE	West Monroe	LA	NS-MERID-KCS	2816130	$3,258	1 0122	$3,298	$5 936	$9 388	283%
68	Edgemoor	DE	Wheeling	IL	NS-CHGO-CN	7816130	$2,525	1 0122	$2,555	$4,600	$9 844	385%
69	Enid	OK	Edgemoor	DE	BNSF ESTL-NS	2991315	$2,893	1 0122	$2,928	$5,270	$12,624	431%
70	Removed											
71	Gregory	TX	Dragon	MS	UP NEWOR-NS	2813984	$573	1 0122	$580	$1,043	$2,486	429%
72	Removed											
73	Gregory	TX	Royce	NJ	UP-ESTL-NS	2817984	$3,050	1 0122	$3,087	$5,557	$21 912	710%
74	Removed											
75	Lemont	IL	Edgemoor	DE	BNSF CHGO-NS	2991315	$2,374	1 0122	$2,403	$4,326	$8,384	349%
76.	Lemoyne	AL	Artesia	MS	NS-MERID-KCS	4810560	$1 410	1 0122	$1,427	$2,569	$8,983	629%
77	McIntosh	AL	Tumside	LA	NS-MOBIL-CN	2819330	$358	1 0122	$362	$652	$2,400	662%
78	McIntosh	AL	Delisle	MS	NS-MOBIL-CN HATBG-KCS	2812815	$362	1 0122	$367	$660	$2,900	791%
79	McIntosh	AL	Delisle	MS	NS MOBIL-CN HATBG-KCS	2812220	$369	1 0122	$373	$672	$2,400	643%
80	McIntosh	AL	Orange	TX	NS NEWOR-UP	2812220	$1,797	1 0122	$1,819	$3,274	$9 214	507%
81	McIntosh	AL	Woodstock	TN	NS-MOBIL-CN	2812220	$368	1 0122	$373	$671	$2,400	644%
82	Orange	TX	Greenville	SC	UP-NEWOR-NS	2821142	$2,357	1 0122	$2,385	$4 294	$6,113	256%
83	Orange	TX	Washington, Warren	NJ	UP-ESTL-NS	2821142	$2,512	1 0122	$2,543	$4 577	$9,644	379%
84	Pascagoula	MS	Fort Mill	SC	MSE-MOBIL-NS	2815112	$2,349	1 0122	$2,378	$4,280	$8,928	375%
85	Pascagoula	MS	Lemoyne	AL	MSE-MOBIL-NS	2815112	$314	1 0122	$318	$572	$2,758	868%
86	Strang	TX	Lemoyne	AL	UP-NEWOR-NS	2812350	$2,011	1 0122	$2,036	$3,664	$6,899	339%
87	Beauharnois	PQ	Edgemoor	DE	CSXT-BUFF NS	2812815	$1,613	1 0122	$1,633	$2,940	$12,375	758%
88	Removed											
89	Belle	WV	Gainesville	GA	NS-CINTI-CSXT	2813980	$1,635	1 0122	$1,655	$2,979	$10,487	634%
90	Belle	WV	Port Bienville	MS	NS-ATLA-CSXT-ANSLE-PBVR	2813934	$2,754	1 0122	$2,787	$5,017	$12,839	461%
91	Belle	WV	Theodore	AL	NS-CINTI-CSXT	2813934	$1,625	1 0122	$1,645	$2,960	$10,487	638%
92	Bellwood	VA	Dallas	GA	CSXT-PTRSB NS	2819315	$2,602	1 0122	$2,634	$4,740	$8,926	339%
93	Bellwood	VA	Fort Mill	SC	CSXT-CHLTE-NS	2819315	$643	1 0122	$651	$1,172	$1,061	161%
94	Bellwood	VA	Rockwell	NC	CSXT-PTRSB NS	2819315	$1 106	1 0122	$1,119	$2,015	$3 431	307%
95	Removed											
96	Danville	VA	Ampthill	VA	NS PTRSB-CSXT	3274110	$718	1.0122	$726	$1,308	$1,585	218%
97	Edgemoor	DE	New Johnsonvil'e	TN	NS-CINTI-CSXT	2816130	$2,275	1 0122	$2 404	$4,326	$8 966	373%
98	Enid	OK	Edgemoor	DE	BNSF ESTL-NS	2991315	$3,602	1 0122	$3,646	$6,563	$6,986	192%
99	Loudon	TN	Graingers	NC	NS-CHATT CSXT	2818512	$842	1 0122	$849	$1,169	$1,490	229%
100	Loudon	TN	Graingers	NC	NS-CHATT-CSXT	2818512	$493	1 0122	$499	$898	$1,684	338%
101	Miami Fort	OH	Dallas	GA	CSXT CINTI-NS	2819315	$1 757	1 0122	$1,779	$3,202	$3,532	199%
102	Miami Fort	OH	Gracewood	GA	CSXT-CHATT NS	2819325	$1,551	1 0122	$1 570	$2,826	$5 400	344%
103	Miami Fort	OH	McIntosh	AL	CSXT CHATT-NS	2819340	$1,090	1 0122	$1,103	$1,986	$5,638	511%
104	Removed											
105.	Removed											
106	Miami Fort	OH	Pepper	VA	CSXT-CINTI-NS	2819345	$2,350	1 0122	$2,379	$4,282	$3,000	126%
107	Nitrium	WV	Belle	WV	CSXT-CINTI NS	2812220	$1,665	1 0122	$1 685	$3,033	$4,800	285%
108	Nitrium	WV	Danville	VA	CSXT LYNCH-NS	2812220	$426	1 0122	$431	$776	$2,520	585%
109	New Johnsonville	TN	Chapman	PA	CSXT CINTI NS	2816130	$2,356	1 0122	$2,385	$4 293	$7,151	300%
110	Removed											
111	New Johnsonville	TN	Morrow	GA	CSXT-CHATT-NS	2816130	$752	1 0122	$761	$1,370	$4 500	591%
112	Niagara Falls	NY	Belle	WV	CSXT-CLMBO-NS	2812220	$831	1 0122	$841	$1 514	$3,000	357%
113	Niagara Falls	NY	Edgemoor	DE	CSXT-BUFF-NS	2812815	$1,621	1 0122	$1,641	$2 954	$7,022	428%
114	Niagara Falls	NY	Edgemoor	DE	CSXT-BUFF-NS	2812220	$1,653	1 0122	$1,674	$3 012	$3,800	227%
115	Pascagoula	MS	Fort Mill	SC	CSXT-ATLA NS	2815112	$1,337	1 0122	$1,353	$2 436	$5,000	369%
116	Starke	FL	Huntsv'le	AL	CSXT DCTUR-NS	1441325	$321	1 0122	$324	$584	$1,025	316%
117	Starke	FL	Huntsville	AL	CSXT-DCTUR-NS	1441325	$511	1 0122	$517	$931	$1,128	218%
118	Wurtland	KY	Fort Mill	SC	CSXT-CHLTE-NS	2819315	$646	1 0122	$654	$1,177	$992	152%
119	Wurtland	KY	McIntosh	AL	CSXT-BHAM NS	2819315	$875	1 0122	$885	$1,594	$2 000	226%
120	Belle	WV	Divine	IL	NS-PINE-CN	2813980	$1,683	1 0122	$1 703	$3,066	$7 502	440%
121	Burnside	LA	Gracewood	GA	CN NEWOR-NS	2819325	$2 150	1 0122	$2,185	$3,933	$9,000	412%
122	Lemont	IL	Edgemoor	DE	BNSF-CHGO-NS	2991315	$3,025	1 0122	$3,062	$5,512	$9,864	322%
124	New Johnsonville	TN	McDonough	GA	CSXT-CHATT NS	2816130	$1,056	1 0122	$1,069	$1,925	$4,815	450%
125	Charleston	TN	Woodstock	TN	NS MEMPH-CN	2812410	$1,189	1 0122	$1,204	$2,167	$9,265	770%
126	Reybold	DE	Albuquerque	NM	NS-STRTR-BNSF	2819315	$2,580	1 0122	$2,611	$4,700	$10,844	415%
127	Reybold	DE	Baltimore	MD	NS-HALLW-CSXT	2819315	$449	1 0122	$455	$818	$3,900	858%
128	Reybold	DE	Blair	NE	NS CHGO-UP	2819315	$2,395	1 0122	$2 424	$4,364	$10,008	413%
129	Reybold	DE	Brewton	AL	NS-BHAM-CSXT	2819315	$2,711	1 0122	$2,744	$4,938	$10,476	382%
130	Reybold	DE	Castle Hayne	NC	NS CHLTE-CSXT	2819315	$1,879	1 0122	$1 902	$3,424	$5,844	307%
131	Reybold	DE	Clifton	AZ	NS-KCITY UP	2819315	$3,444	1 0122	$3,486	$6,275	$14 928	428%
132	Reybold	DE	Carson	SD	NS-CHGO-BNSF	2819315	$2,394	1 0122	$2,423	$4,362	$10,008	413%
133	Removed											
134	Reybold	DE	Ferguson	MS	NS MEMPHIS-CN	2819315	$3,130	1 0122	$3,168	$5,703	$12,882	407%
135	Reybold	DE	Hastings	NE	NS-CHGO-BNSF	2819315	$2 394	1 0122	$2,424	$4,362	$10,008	413%
136	Reybold	DE	Indianapolis	IN	NS-CINTI-CSXT	2819315	$2,163	1.0122	$2,190	$3,942	$8,880	406%
137	Reybold	DE	Omaha	NE	NS-CHGO-UP	2819315	$2,395	1 0122	$2,424	$4 363	$10,008	413%
138	Reybold	DE	Orange	TX	NS-ESTL-BNSF	2819315	$2,859	1 0122	$2 894	$5,209	$12,192	421%
139	Reybold	DE	Phoenix	AZ	NS-STRTR BNSF	2819315	$2,579	1 0122	$2,611	$4,699	$10,844	415%
140	Reybold	DE	Sioux City	IA	NS-CHGO-BNSF	2819315	$2,394	1 0122	$2,424	$4,362	$10,008	413%
141.	Reybold	DE	Toledo	OH	NS TOLED-CSXT	2819315	$3,003	1 0122	$3,039	$5,471	$7,200	237%
142	Reybold	DE	Washington	WV	NS-HAGTN-CSXT	2819315	$718	1 0122	$727	$1,309	$6,444	886%

1/ Column (5) x Column (6)
2/ Column (7) x 1 8
3/ Tariff Rate from Rebuttal Exhibit II A 16
4/ Column (9)/Column (7)

TAB 10

Variable Cost, Jurisdictional Threshold, Tariff Rate and
Revenue/Variable Cost Ratios Per Car for DuPont Movements - 3Q11

	Origin City (1)	ST	Destination City (2)	ST	Railroad(s) (3)	Commodity (4)	Phase III Cost Base Year 2011 (5)	Index to 3Q11 (6)	Phase III Cost 1/ (7)	3Q2011 Jurisdictional Threshold 2/ (8)	Tariff Rate 3/ (9)	Revenue/Variable Cost Ratio 4/ (10)
Exhibit A - Local Moves												
1	Removed											
2	Bayway	NJ	Waynesville	NC	NS	2819315	$2,606	1 0109	$2,635	$4 742	$12 855	488%
3	Belle	WV	Danville	IL	NS	2813980	$1,907	1 0109	$1,928	$3,470	$11,856	614%
4	Removed											
5	Removed											
6	Removed											
7	Removed											
8	Removed											
9	Belle	WV	Wyandotte	MI	NS	2813934	$1 414	1 0109	$1,429	$2,572	$8,814	617%
10	Charleston	TN	Edgemoor	DE	NS	2812815	$2 581	1 0109	$2,609	$4,697	$18,562	711%
11	Edgemoor	DE	Chicago	IL	NS	2816130	$2,583	1 0109	$2,611	$4 700	$9 844	377%
12	Edgemoor	DE	Chillicothe	OH	NS	2816130	$2,515	1 0109	$2,543	$4,577	$6,510	256%
13	Edgemoor	DE	Mobit	AL	NS	2816130	$3 324	1 0109	$3,360	$6,048	$12,376	368%
14	Edgemoor	DE	Riverwood Intl	GA	NS	2816130	$3 015	1 0109	$3,048	$5,487	$6,270	206%
15	Edgemoor	DE	Wabash	IN	NS	2816130	$2,644	1 0109	$2,673	$4,811	$6,627	248%
16	Lemoyne	AL	Gant	SC	NS	4810560	$2,723	1 0109	$2,753	$4,955	$5 136	187%
17	Loudon	TN	Bradshwate	LA	NS	2818512	$2,222	1 0109	$2,246	$4,043	$4,125	184%
18	Louisville	KY	Decatur	IL	NS	2819450	$1 417	1 0109	$1,433	$2,579	$4,596	321%
19	Louisville	KY	Lafayette	IN	NS	2819450	$1,774	1 0109	$1,793	$3 228	$6,139	342%
20	Removed											
21	Removed											
22.	McIntosh	AL	Lemoyne	AL	NS	2812220	$561	1 0109	$567	$1,021	$1,605	283%
23	Reybold	DE	Detroit	MI	NS	2819315	$2 067	1 0109	$2,089	$3,760	$7,812	374%
24	Reybold	DE	Fort Mill	SC	NS	2819315	$2 072	1 0109	$2,094	$3,770	$6,108	292%
25.	Reybold	DE	Morrisville	PA	NS	2819315	$650	1 0109	$658	$1,184	$3 614	550%
Exhibit B - Joint Moves												
1.	Belle	WV	Anaheim	CA	NS-CHGO-UP	2813980	$1,782	1 0109	$1,802	$3,243	$12,100	672%
2	Belle	WV	Bayport	TX	NS-ESTL-UP	2818620	$2,242	1 0109	$2,266	$4,080	$11,812	521%
3	Removed											
4	Belle	WV	Brownsville	TX	NS-ESTL-UP	2818221	$2,217	1 0109	$2,241	$4,034	$11 812	527%
5	Belle	WV	Burley	ID	NS-CHGO-UP	2813934	$1 782	1 0109	$1,802	$3,243	$12 100	672%
6	Belle	WV	Cadet	MO	NS KCITY UP	2813934	$2 776	1 0109	$2,806	$5,051	$19,539	696%
7	Removed											
8	Belle	WV	Channelview	TX	NS ESTL-UP	2818130	$2,051	1 0109	$2,074	$3,733	$11,812	570%
9	Belle	WV	City of Commerce	CA	NS STRTR BNSF	2818221	$1,935	1 0109	$1 956	$3 520	$10,342	529%
10	Belle	WV	Conroe	TX	NS ESTL-BNSF	2813934	$2,210	1 0109	$2,234	$4,022	$14,136	633%
11	Belle	WV	Corsicana	TX	NS-ESTL-UP	2813934	$2,099	1 0109	$2,122	$3,820	$14,136	666%
12	Removed											
13	Belle	WV	East Billings	MT	NS CHGO-BNSF	2818130	$1,759	1 0109	$1,778	$3,201	$8,533	480%
14	Belle	WV	Ethyl	AR	NS ESTL-UP MCNU LNW	2813934	$2,117	1 0109	$2,140	$3,853	$14,136	660%
15	Belle	WV	Finley	WA	NS CHGO-BNSF	2813934	$1,783	1 0109	$1,803	$3,245	$12,100	671%
16	Removed											
17	Belle	WV	Freeport	TX	NS ESTL-UP	2818130	$1,950	1 0109	$1,972	$3,549	$11 812	599%
18	Belle	WV	Garyville	LA	NS NEWOR-CN	2813934	$3,207	1 0109	$3 242	$5,836	$22,732	701%
19	Belle	WV	Geismar	LA	NS NEWOR-CN	2813934	$2 928	1 0109	$2,960	$5,328	$22,732	768%
20	Belle	WV	Janesville	WI	NS-CHGO UP	2816131	$1 745	1 0109	$1,764	$3,175	$12,100	686%
21	Belle	WV	Laredo	TX	NS ESTL-UP	2818221	$2,217	1 0109	$2,241	$4,034	$11,812	527%
22	Belle	WV	Laredo	TX	NS ESTL-UP	2818131	$2,217	1 0109	$2,241	$4,034	$14,136	631%
23	Belle	WV	Lemont	IL	NS-CHGO-BNSF	2813980	$1,773	1 0109	$1,793	$3,227	$12,100	675%
24	Belle	WV	Los Angeles	CA	NS-STRTR BNSF	2813934	$1,987	1 0109	$2,008	$3,615	$13,450	670%
25	Belle	WV	Los Angeles	CA	NS-CHGO-UP	2818130	$1,770	1 0109	$1,789	$3,220	$8,533	477%
26	Removed											
27	Belle	WV	Milladale	IL	NS-CHGO-CN	2818131	$1,755	1 0109	$1,772	$3,190	$12,100	683%
28	Removed											
29	Belle	WV	Saint Paul	MN	NS-CHGO-BNSF	2818221	$1,944	1 0109	$1,965	$3,537	$8,533	434%
30	Belle	WV	San Dimas	CA	NS-CHGO-UP	2813980	$1,906	1 0109	$1 927	$3,468	$12,100	628%
31	Removed											
32	Belle	WV	S- Gabriel	LA	NS NEWOR-CN	2813934	$3,176	1 0109	$3,210	$5 778	$22,732	708%
33	Belle	WV	St Joseph	MO	NS KCITY-UP	2818130	$2,779	1 0109	$2,809	$5,057	$13,333	482%
34	Removed											
35.	Belle	WV	Strang	TX	NS-ESTL-UP	2818221	$2,304	1 0109	$2,329	$4,193	$11,812	507%
36.	Belle	WV	Strang	TX	NS ESTL-BNS	2813934	$1,891	1 0109	$1,911	$3 440	$14 136	740%
37	Belle	WV	Strang	TX	NS-ESTL-UP	2819183	$2,021	1 0109	$2,043	$3,677	$5,011	245%
38	Removed											
39	Belle	WV	Texas City	TX	NS-ESTL-UP	2813934	$2,116	1 0109	$2 139	$3,851	$14,136	661%
40	Belle	WV	Vernon	MO	NS ESTL-BNSI	2813934	$2,197	1 0109	$2,221	$3,997	$14,136	637%
41.	Belle	WV	West Memphis	AR	NS KCITY-UP	2813934	$2,765	1 0109	$2,795	$5,031	$19 539	699%
42.	Belle	WV	Winfield Spur	LA	NS-MERID-KCS	2813980	$2,677	1 0109	$2,706	$4,870	$19,888	735%
43	Belle	WV	Wichita	KS	NS ESTL-BNSF	2813934	$2,241	1 0109	$2,266	$4 078	$14 136	624%
44	Bloomington	TX	Greenville	SC	UP NEWOR-NS	2821142	$1,931	1 0109	$1 952	$3 514	$6,113	313%
45	Bloomington	TX	Washington, Warren	NJ	UP-ESTL-NS	2821142	$2,689	1 0109	$2,719	$4 894	$9 644	355%
46	Removed											
47	Charleston, Bradley	TN	Woodstock	TN	NS MEMPH-CN	2812220	$1 205	1 0109	$1 218	$2,193	$4,170	342%
48	Cresap	WV	Edgemoor	DE	CSXT-HAGTN-NS	2991315	$747	1 0109	$756	$1,360	$3,591	475%
49	Dowling	TX	Fort Mill	SC	KCS MERID-NS	2815112	$2,018	1 0109	$2,040	$1 672	$7,690	377%
50	Edgemoor	DE	Garland	TX	NS-MFRID-KCS	2816130	$3 247	1 0109	$3 283	$5,909	$9,388	286%
51	Edgemoor	DE	Genoa	MI	NS-CHGO CN	2816130	$2,481	1 0109	$2 508	$4,514	$9 844	393%
52	Edgemoor	DE	Laredo	TX	NS ESTL-UP	2816130	$2 871	1 0109	$2,903	$5,225	$10,991	379%
53	Edgemoor	DE	Madawaska	ME	NS ROUPT-CN	2816130	$1 481	1 0109	$1,497	$2,695	$5,029	336%
54	Edgemoor	DE	Pasadena	TX	NS-ESTL-UP	2819971	$2,811	1 0109	$2,842	$5,115	$24 453	861%
55	Edgemoor	DE	Port Huron	MI	NS-BUFF-CN	2816130	$1 931	1 0109	$1,952	$3,513	$7,404	379%
56	Edgemoor	DE	Portland	ME	NS-MCV-PAS-AYERM ST	2816130	$1,478	1 0109	$1 494	$2,690	$5,029	337%
57	Edgemoor	DE	Portland	OR	NS-CHGO-BNSF	2816130	$2,504	1 0109	$2,531	$4 556	$9,844	389%
58	Edgemoor	DE	Quinnesec	MI	NS-CHGO-LN	2816130	$2 479	1 0109	$2,506	$4 510	$9,844	393%
59	Edgemoor	DE	Riley	ME	NS-MCV-PAS-AYERM-ST	2816130	$1 482	1 0109	$1 499	$2,697	$5,029	336%
60	Edgemoor	DE	Rumford	ME	NS-MCV-PAS-AYERM ST	2816130	$1,478	1 0109	$1,494	$2,689	$5,029	337%
61.	Removed											
62.	Edgemoor	DE	Shawmut	ME	NS-MCV PAS AYERM ST	2816130	$1 479	1 0109	$1,495	$2,692	$5,029	336%

Variable Cost, Jurisdictional Threshold, Tariff Rate and Revenue/Variable Cost Ratios Per Car for DuPont Movements 3Q11

	Origin City (1)	ST	Destination City (2)	ST	Railroad(s) (3)	Commodity (4)	Phase III Cost Base Year 2011 (5)	Index to 3Q11 (6)	Phase III Cost 1/ (7)	3Q2011 Jurisdictional Threshold 2/ (8)	Tariff Rate 3/ (9)	Revenue/Variable Cost Ratio 4/ (10)
63	Edgemoor	DE	Seabov	CA	NS-CHGO-UP	2816130	$2,508	1.0109	$2,536	$4,564	$9,844	388%
64	Edgemoor	DE	Seaboy	CA	NS-STKTR-BNSF	2816130	$2,699	1.0109	$2,729	$4,911	$10,944	401%
65.	Edgemoor	DE	St Paul	MN	NS-CHGO-UP	2816130	$2,507	1.0109	$2 534	$4 562	$9,844	388%
66	Removed											
67	Edgemoor	DE	West Monroe	LA	NS-MFRID KCS	2816130	$3,258	1.0109	$3 294	$5,928	$9,388	285%
68	Edgemoor	DE	Wheeling	IL	NS-CHGO-CN	2816130	$2,525	1.0109	$2,552	$4,594	$9 844	386%
69	Enid	OK	Edgemoor	DE	BNSF-ESTL-NS	2991315	$2 893	1.0109	$2,924	$5,264	$12,624	432%
70.	Removed											
71	Gregory	TX	Dragon	MS	UP-NEWOR-NS	2813984	$573	1.0109	$579	$1,042	$2,486	429%
72	Removed											
73	Gregory	TX	Royce	NJ	UP ESTL-NS	2813984	$3,050	1.0109	$3,083	$5,549	$21,912	711%
74	Removed											
75	Lemont	IL	Edgemoor	DE	BNSF-CHGO-NS	2991315	$2,374	1.0109	$2,400	$4,320	$8,384	349%
76.	Lemoyne	AL	Artesia	MS	NS MERID-KCS	4810560	$1 410	1.0109	$1,426	$2,566	$8,983	630%
77	McIntosh	AL	Burnside	LA	NS-MOBIL-CN	2819330	$358	1.0109	$362	$651	$2,400	663%
78	McIntosh	Al	Delisle	MS	NS-MOBIL-CN HATBG-KCS	2812815	$362	1.0109	$366	$659	$2,900	792%
79	McIntosh	AL	Delisle	MS	NS-MOBIL-CN HATBG-KCS	2812220	$369	1.0109	$373	$671	$2,400	644%
80.	McIntosh	Al	Orange	TX	NS-N' WOR-UP	2812220	$1 797	1.0109	$1,816	$3,269	$9,214	507%
81	McIntosh	AL	Woodstock	TN	NS MOBIL-CN	2812220	$368	1.0109	$372	$670	$2,400	645%
82	Orange	TX	Greenville	SC	UP-NEWOR-NS	2821142	$2,357	1.0109	$2,382	$4,288	$6,113	257%
83	Orange	TX	Washington, Warren	NJ	UP-ESTL-NS	2821142	$2,512	1.0109	$2,540	$4,571	$9,644	380%
84	Pascagoula	MS	Fort Mill	SC	MSE-MOBIL-NS	2815112	$2,149	1.0109	$2,375	$4,275	$8,928	376%
85	Pascagoula	MS	Lemoyne	AL	MSE-MOBIL NS	2815112	$314	1.0109	$317	$571	$2,758	869%
86.	Streng	TX	Lemoyne	AL	UP-NEWOR NS	2812350	$2,011	1.0109	$2,033	$7 659	$6,899	339%
87.	Beauharnois	PQ	Edgemoor	DE	CSXT BUFF-NS	2812815	$1,613	1.0109	$1,631	$2,936	$12,375	759%
88	Removed											
89	Belle	WV	Gainesville	GA	NS-CINTI-CSXT	2813980	$1,635	1.0109	$1,653	$2,976	$10,487	634%
90	Belle	WV	Fort Bienville	MS	NS-ATLA-CSXT-ANSLB-PBVR	2813934	$2,754	1.0109	$2,784	$5,011	$12,839	461%
91	Belle	WV	Theodore	AL	NS-CINTI CSXT	2813934	$1,625	1.0109	$1,642	$2,956	$10,487	638%
92	Bellwood	VA	Dallas	GA	CSXT PTRSB-NS	2819315	$2,602	1.0109	$2,630	$4,734	$8,926	339%
93	Bellwood	VA	Fort Mill	SC	CSXT-CHLTT NS	2819315	$643	1.0109	$650	$1,170	$1,061	163%
94	Bellwood	VA	Rockwell	NC	CSXT-PTRSB-NS	2819315	$1,106	1.0109	$1,118	$2,012	$3,431	307%
95	Removed											
96	Danville	VA	Amphill	VA	NS PTRSB-CSXT	3274110	$718	1.0109	$726	$1,306	$1,691	233%
97	Edgemoor	DE	New Johnsonville	TN	NS-CINTI-CSXT	2816130	$2,375	1.0109	$2,401	$4,321	$9,594	400%
98	Enid	OK	Edgemoor	DE	BNSF ESTL-NS	2991315	$3,602	1.0109	$3 642	$6,555	$14,518	399%
99	Loudon	TN	Grainger	NC	NS-CHATT-CSXT	2818512	$642	1.0109	$649	$1,168	$1 490	230%
100	Loudon	TN	Grainger	NC	NS-CHA IT CSXT	2818512	$493	1.0109	$498	$897	$1 614	338%
101	Miami Fort	OH	Dallas	GA	CSXT-CINTI-NS	2819315	$1,757	1.0109	$1,777	$3,198	$5 084	286%
102	Miami Fort	OH	Gracewood	GA	CSXT-CHATT-NS	2819325	$1,551	1.0109	$1,568	$2,823	$9,761	622%
103	Miami Fort	OH	McIntosh	AL	CSXT CHATT NS	2819340	$1,090	1.0109	$1,102	$1,984	$8,664	785%
104	Removed											
105	Removed											
106	Miami For	OH	Pepper	VA	CSXT CINTI NS	2819345	$2,350	1.0109	$2,376	$4 277	$5 174	218%
107	Natrium	WV	Belle	WV	CSXT-CINTI NS	2812220	$1,665	1.0109	$1,683	$3,029	$8,532	507%
108	Natrium	WV	Danville	VA	CSXT LYNCH-NS	2812220	$426	1.0109	$430	$775	$2,696	626%
109	New Johnsonville	TN	Chapman	PA	CSXT-CINTI-NS	2816130	$3,356	1.0109	$3,392	$4 387	$7,652	321%
110	Removed											
111	New Johnsonville	TN	Morrow	GA	CSXT CHATT NS	2816130	$752	1.0109	$760	$1,368	$4,815	633%
112	Niagara Falls	NY	Belle	WV	CSXT-CLMBO-NS	2812220	$831	1.0109	$840	$1,512	$3,269	389%
113.	Niagara Falls	NY	Edgemoor	DE	CSXT-BUFF-NS	2812815	$1,621	1.0109	$1,639	$2,950	$12,375	755%
114	Niagara Falls	NY	Edgemoor	DE	CSXT-BUFF-NS	2812220	$1,653	1.0109	$1,671	$3,009	$4 444	266%
115	Pascagoula	MS	Fort Mill	SC	CSXT-ATLA-NS	2815112	$1,337	1.0109	$1,352	$2,433	$5,350	396%
116	Starks	Fl	Huntsville	AL	CSXT DCTUR-NS	1441325	$321	1.0109	$324	$583	$1,314	405%
117	Starks	FL	Huntsville	AL	CSXT DCTUR NS	1441325	$511	1.0109	$517	$930	$1,383	268%
118	Wurtland	KY	Fort Mill	SC	CSXT-CHLTT-NS	2819315	$646	1.0109	$653	$1 176	$1,061	162%
119	Wurtland	KY	McIntosh	AL	CSXT BHAM NS	2819315	$875	1.0109	$884	$1,592	$2,631	298%
120	Belle	WV	Devine	IL	NS PINE-CN	2813980	$1,683	1.0109	$1,701	$3,062	$11,542	678%
121	Belle	WV	Mapleton	IL	NS LOGPT TPW	2813934	$1,488	1.0109	$1,504	$2,707	$7,845	522%
122	Bumside	LA	Gracewood	GA	CN NEWOR-NS	2819325	$2,159	1.0109	$2,182	$3 928	$18,406	843%
123	Lemont	IL	Edgemoor	DE	BNSF-CHGO-NS	2991315	$3,025	1.0109	$3,058	$5,505	$9,864	323%
124	New Johnsonville	TN	McDonough	GA	CSXT-CHATT NS	2816130	$1,056	1.0109	$1,068	$1,922	$4,815	451%
125	Charleston	TN	Woodstock	TN	NS-MEMPH-CN	2812410	$1,189	1.0109	$1 202	$2,164	$9,265	771%
126.	Reybold	DE	Albuquerque	NM	NS-STKTR-BNSF	2819315	$2,580	1.0109	$2,608	$4 694	$10,844	416%
127	Reybold	DE	Baltimore	MD	NS-BALBV CSXT	2819315	$449	1.0109	$454	$817	$3 900	859%
128	Reybold	DE	Blue	NF	NS-CHGO-UP	2819315	$2,395	1.0109	$2 421	$4,358	$10,008	413%
129	Reybold	DE	Bierwan	AL	NS-BHAM-CSXT	2819315	$2,711	1.0109	$2 740	$4 932	$10,476	382%
130	Reybold	DF	Castle Hayne	NC	NS-CHLTT-CSXT	2819315	$1,879	1.0109	$1 900	$3,420	$5,844	308%
131	Reybold	DF	Clifton	AZ	NS-KCITY-UP	2819315	$3,444	1.0109	$3 482	$6,268	$14 928	429%
132	Reybold	DE	Carson	SD	NS-CHGO-BNSF	2819315	$2,394	1.0109	$2,420	$4,357	$10,008	414%
133	Removed											
134	Reybold	DE	Ferguson	MS	NS MEMPHS-CN	2819315	$3,130	1.0109	$3,164	$5,696	$12,882	407%
135	Reybold	DE	Hastings	NE	NS-CHGO-BNSF	2819315	$2 394	1.0109	$2 420	$4,357	$10,008	413%
136	Reybold	DF	Indianapolis	IN	NS-CINTI CSXT	2819315	$2 161	1.0109	$2,187	$3,937	$8,880	406%
137	Reybold	DE	Omaha	NE	NS-CHGO-UP	2819315	$2,395	1.0109	$2,421	$4,358	$ 0,008	413%
138	Reybold	DE	Orange	TX	NS-ESTL-BNSF	2819315	$2,859	1.0109	$2,890	$5,202	$12,192	422%
139	Reybold	DE	Phoenix	AZ	NS STKTR BNSF	2819315	$2,579	1.0109	$2,607	$4,693	$10,844	416%
140	Reybold	DE	Sioux City	IA	NS-CHGO-BNSF	2819315	$2,394	1.0109	$2 420	$4,357	$10,008	413%
141	Reybold	DF	Toledo	OH	NS-TOLED-CSXT	2819315	$3 000	1.0109	$3,036	$5,464	$7,200	237%
142	Reybold	DE	Washington	WV	NS HAGTN CSXT	2819315	$718	1.0109	$726	$1,307	$6,444	887%

1/ Column (5) x Column (6)
2/ Column (7) x 1.8
3/ Tariff Rate from Rebuttal Exhibit II A-16
4/ Column (9)/Column (7)

TAB 11

Variable Cost, Jurisdictional Threshold, Tariff Rate and
Revenue/Variable Cost Ratios Per Car for DuPont Movements - 4Q11

	Origin City (1)	ST	Destination City (2)	ST	Railroad(s) (3)	Commodity (4)	Phase III Cost Base Year 2011 (5)	Index to 4Q11 (6)	Phase III Cost 1/ (7)	4Q2011 Jurisdictional Threshold 2/ (8)	Tariff Rate 3/ (9)	Revenue/Variable Cost Ratio 4/ (10)
Exhibit A - Local Moves												
1	Removed											
2	Bayway	NJ	Waynesville	NC	NS	2819315	$2,606	1 0035	$2,615	$4,708	$12,855	492%
3	Belle	WV	Danville	IL	NS	2813980	$1,907	1 0035	$1 913	$3 444	$11,836	619%
4	Removed											
5	Removed											
6	Removed											
7	Removed											
8	Removed											
9	Belle	WV	Wyandotte	MI	NS	2813934	$1,414	1 0035	$1 419	$2 553	$8,814	621%
10	Charleston	TN	Edgemoor	DE	NS	2812815	$2 581	1 0035	$2,590	$4,663	$18,562	719%
11	Edgemoor	DE	Chicago	IL	NS	2816130	$2,583	1 0035	$2,592	$4,665	$9,844	380%
12	Edgemoor	DE	Chillicothe	OH	NS	2816130	$2,515	1 0035	$2,524	$4,545	$6,510	258%
13	Edgemoor	DE	Mahrt	AL	NS	2816130	$3 324	1 0035	$3,336	$6,004	$12,376	371%
14	Edgemoor	DE	Riverwood Intl	GA	NS	2816130	$3,015	1 0035	$3 026	$5,447	$6,270	207%
15	Edgemoor	DE	Wabash	IN	NS	2816130	$2,644	1 0035	$2,653	$4,776	$6,627	250%
16	Lemoyne	AL	Gantt	SC	NS	4810560	$2,723	1 0035	$2 733	$4,919	$5,136	188%
17	Loudon	TN	Braithwaite	LA	NS	2818512	$2,222	1 0035	$2,230	$4,013	$4,125	185%
18	Louisville	KY	Decatur	IL	NS	2819450	$1,417	1 0035	$1,422	$2,560	$4,596	323%
19	Louisville	KY	Lafayette	IN	NS	2819450	$1 774	1 0035	$1 780	$3,204	$6,139	345%
20	Removed											
21	Removed											
22	McIntosh	AL	Lemoyne	AL	NS	2812220	$561	1 0035	$563	$1,013	$1,605	285%
23	Reybold	DE	Detroit	MI	NS	2819315	$2,067	1 0035	$2,074	$3,733	$7,812	377%
24	Reybold	DE	Fort Mill	SC	NS	2819315	$2,072	1 0035	$2,079	$3,742	$6,108	294%
25	Reybold	DE	Morrisville	PA	NS	2819315	$650	1 0035	$653	$1,175	$3,614	554%
Exhibit B - Joint Moves												
1	Belle	WV	Anaheim	CA	NS-CHGO-UP	2813980	$1 782	1 0035	$1,789	$3,219	$12,100	677%
2	Belle	WV	Bayport	TX	NS ESTL-UP	2818620	$2,242	1 0035	$2 250	$4,050	$11,812	525%
3	Removed											
4	Belle	WV	Brownsville	TX	NS-ESTL-UP	2818221	$2,217	1.0035	$2,225	$4,004	$11,812	531%
5	Belle	WV	Burley	ID	NS-CHGO-UP	2813934	$1,782	1 0035	$1,789	$3,220	$12,100	676%
6	Belle	WV	Cadet	MO	NS KCITY-UP	2813934	$2,776	1 0035	$2,786	$5,014	$19 539	701%
7	Removed											
8	Belle	WV	Channelview	TX	NS-ESTL-UP	2818130	$2,051	1 0035	$2,059	$3,706	$11,812	574%
9	Belle	WV	City of Commerce	CA	NS-STRTR BNSF	2818221	$1,935	1 0035	$1,941	$3,495	$10,242	528%
10	Belle	WV	Conroe	TX	NS-ESTL-BNSF	2813934	$2,210	1 0035	$2,218	$3,992	$14,136	637%
11	Belle	WV	Corsicana	TX	NS ESTL-UP	2813934	$2,099	1 0035	$2,106	$3,792	$14,136	671%
12	Removed											
13	Belle	WV	East Billings	MT	NS-CHGO-BNSF	2818130	$1 759	1 0035	$1,765	$3,178	$8,533	485%
14	Belle	WV	Ethyl	AR	NS ESTL-UP-MCNEI LNW	2813934	$2,117	1.0035	$2,125	$3,823	$14 136	665%
15	Belle	WV	Finley	WA	NS-CHGO BNSF	2813934	$1 783	1 0035	$1,789	$3,221	$12,100	676%
16	Removed											
17	Belle	WV	Freeport	TX	NS-ESTL-UP	2818130	$1,950	1 0035	$1,957	$3,523	$11,812	604%
18	Belle	WV	Garyville	LA	NS NEWOR-CN	2813934	$3,207	1 0035	$3,219	$5,794	$22,732	706%
19	Belle	WV	Geismar	LA	NS-NEWOR-CN	2813934	$2,928	1 0035	$2 938	$5,289	$22,732	774%
20	Belle	WV	Janesville	WI	NS-CHGO-UP	2818131	$1 745	1 0035	$1,751	$3,152	$12,100	691%
21	Belle	WV	Laredo	TX	NS ESTL-UP	2818221	$2,217	1 0035	$2,225	$4,004	$11,812	531%
22	Belle	WV	Laredo	TX	NS-ESTL-UP	2818131	$2,217	1 0035	$2 225	$4 004	$14,136	635%
23	Belle	WV	Lemont	IL	NS CHGO-BNSF	2813980	$1,773	1 0035	$1,780	$3,203	$12,100	680%
24	Belle	WV	Los Angeles	CA	NS-STRTR-BNSF	2813934	$1,987	1 0035	$1,994	$3,589	$13,450	675%
25	Belle	WV	Los Angeles	CA	NS CHGO UP	2818130	$1,770	1 0035	$1 776	$3 196	$8,533	481%
26	Removed											
27	Belle	WV	Palladale	IL	NS-CHGO-CN	2818131	$1,753	1 0035	$1,759	$3 166	$12,100	688%
28	Removed											
29	Belle	WV	Saint Paul	MN	NS-CHGO-BNSF	2818221	$1,944	1 0035	$1,951	$3,512	$8,533	437%
30	Belle	WV	San Dimas	CA	NS CHGO UP	2813980	$1,906	1 0035	$1,913	$3,443	$12,100	633%
31	Removed											
32	Belle	WV	St Gabriel	LA	NS-NEWOR-CN	2813934	$3,176	1 0035	$3,187	$5 736	$22,732	713%
33	Belle	WV	St Joseph	MO	NS-KCITY-UP	2818130	$2,779	1 0035	$2 789	$5,020	$13,535	485%
34	Removed											
35	Belle	WV	Strang	TX	NS-ESTL-UP	2818221	$2,304	1 0035	$2,312	$4,162	$11,812	511%
36	Belle	WV	Strang	TX	NS ESTL-BNSF	2813934	$1,891	1 0035	$1,897	$3,415	$14,136	745%
37	Belle	WV	Strang	TX	NS-ESTL-UP	2819183	$2,021	1 0035	$2,028	$3,650	$5,139	253%
38	Removed											
39	Belle	WV	Texas City	TX	NS ESTL-UP	2813934	$2 116	1 0035	$2,124	$3,823	$14 136	666%
40	Belle	WV	Verona	MO	NS-ESTL-BNSF	2813934	$2 197	1 0035	$2,204	$3,968	$14 136	641%
41	Belle	WV	West Memphis	AR	NS-KCITY-UP	2813934	$2,765	1 0035	$2,774	$4,994	$19,539	704%
42	Belle	WV	Winfield Spur	LA	NS-MERID KCS	2813980	$2,677	1 0035	$2,686	$4,833	$19,888	740%
43	Belle	WV	Wichita	KS	NS ESTL-UP-BNSF	2813934	$2,241	1 0035	$2,249	$4,048	$14,136	629%
44	Bloomington	TX	Greenville	SC	UP-NEWOR-NS	2821142	$1 931	1 0035	$1,938	$3 489	$6,113	315%
45	Bloomington	TX	Washington, Warren	NJ	UP-ESTL-NS	2821142	$2,689	1 0035	$2,699	$4 858	$9,644	357%
46	Removed											
47	Charleston, Bradley	TN	Woodstock	TN	NS-MEMPH CN	2812220	$1,205	1 0035	$1,210	$2,177	$4 170	345%
48	Cresap	WV	Edgemoor	DE	CSXT-HAGTN-NS	2991315	$747	1 0035	$750	$1,350	$3,591	479%
49	Dowling	TX	Fort Mill	SC	KCS-MERID-NS	2815112	$2,018	1 0035	$2,025	$3,645	$7,690	380%
50	Edgemoor	DE	Garland	TX	NS-MERID-KCS	2816130	$3,247	1 0035	$3,259	$5,866	$9 388	288%
51	Edgemoor	DE	Green	MI	NS CHGO-CN	2816130	$2,481	1 0035	$2,489	$4,481	$9,844	395%
52	Edgemoor	DE	Laredo	TX	NS-ESTL-UP	2816130	$2,871	1 0035	$2,881	$5,187	$10,991	381%
53	Edgemoor	DE	Madawaska	ME	NS-ROUPT-CN	2816130	$1,481	1 0035	$1,486	$2,675	$3,039	338%
54	Edgemoor	DE	Pasadena	TX	NS ESTL-UP	2819971	$2,811	1 0035	$2,821	$5,078	$24,453	867%
55	Edgemoor	DE	Port Huron	MI	NS BUFF CN	2816130	$1 931	1 0035	$1,937	$3,487	$7 404	382%
56	Edgemoor	DE	Portland	ME	NS-MCV PAS-AYERM ST	2816130	$1,478	1 0035	$1,483	$2,670	$5,029	339%
57	Edgemoor	DE	Portland	OR	NS-CHGO-BNSF	2816130	$2,504	1 0035	$2 512	$4,522	$9,844	392%
58	Edgemoor	DE	Quamesec	MI	NS-CHGO-CN	2816130	$2,479	1 0035	$2,487	$4 477	$9,844	396%
59	Edgemoor	DE	Raleys	ME	NS MCV PAS-AYERM-ST	2816130	$1,482	1 0035	$1,488	$2,678	$5,029	338%
60	Edgemoor	DE	Rumford	ME	NS-MCV-PAS-AYERM-ST	2816130	$1,478	1 0035	$1,483	$2,669	$5 029	339%
61	Removed											
62	Edgemoor	DE	Shawmut	ME	NS-MCV-PAS AYERM-ST	2816130	$1,479	1 0035	$1,485	$2,672	$5,029	339%

Variable Cost, Jurisdictional Threshold, Tariff Rate and
Revenue/Variable Cost Ratios Per Car for DuPont Movements - 4Q11

	Origin City (1)	ST	Destination City (2)	ST	Railroad(s) (3)	Commodity (4)	Phase III Cost Base Year 2011 (5)	Index to 4Q11 (6)	4Q2011 Phase III Cost 1/ (7)	4Q2011 Jurisdictional Threshold 2/ (8)	4Q2011 Tariff Rate 3/ (9)	4Q2011 Revenue/Variable Cost Ratio 4/ (10)
63	Edgemoor	DE	Sneboy	CA	NS-CHGO-UP	2816130	$2,308	1.0035	$2,317	$4,531	$9,844	391%
64	Edgemoor	DE	Sneboy	CA	NS-STRTR BNSF	2816130	$2,699	1.0035	$2,709	$4,875	$10,944	404%
65	Edgemoor	DE	St Paul	MN	NS-CHGO-UP	2816130	$2,507	1.0035	$2,516	$4 529	$9,844	391%
66	Removed											
67	Edgemoor	DE	West Monroe	LA	NS MERID-KCS	2816130	$3,258	1.0035	$3 269	$5,885	$9,388	287%
68	Edgemoor	DE	Wheeling	IL	NS-CHGO-CN	2816130	$2,525	1.0035	$2,534	$4 560	$9,844	389%
69	Enid	OK	Edgemoor	DE	BNSF-ESTL-NS	2991315	$2,893	1.0035	$2,903	$5,225	$12,624	435%
70	Removed											
71	Gregory	TX	Dragon	MS	UP-NEWOR NS	2813984	$573	1.0035	$575	$1,035	$2,486	433%
72	Removed											
73	Gregory	TX	Royce	NJ	UP-ESTL-NS	2813984	$3,050	1.0035	$3,061	$5,509	$21,912	716%
74	Removed											
75	Lemont	IL	Edgemoor	DE	BNSF-CHGO-NS	2991315	$2,374	1.0035	$2,383	$4,289	$8,384	352%
76	Lemoyne	AL	Artesia	MS	NS MERID-KCS	4810360	$1,410	1.0035	$1,415	$2,547	$8,983	635%
77	McIntosh	AL	Burnside	LA	NS-MOBIL-CN	2819330	$358	1.0035	$359	$647	$2,480	688%
78.	McIntosh	AL	Delisle	MS	NS-MOBIL-CN HATBG-KCS	2812815	$362	1.0035	$364	$655	$2,900	798%
79	McIntosh	AL	Delisle	MS	NS-MOBIL-CN-HATBG-KCS	2812220	$369	1.0035	$370	$666	$2,400	649%
80.	McIntosh	AL	Orange	TX	NS-NEWOR UP	2812220	$1,797	1.0035	$1,803	$3 245	$9,214	511%
81	McIntosh	AL	Woodstock	TN	NS-MOBIL-CN	2812220	$368	1.0035	$370	$665	$2,400	649%
82	Orange	TX	Greenville	SC	UP NEWOR-NS	2821142	$2,357	1.0035	$2,365	$4 257	$6,113	258%
83	Orange	TX	Washington, Warren	NJ	UP-ESTL-NS	2821142	$2,512	1.0035	$2,521	$4,538	$9,644	383%
84	Pascagoula	MS	Fort Mill	SC	MSE-MOBIL-NS	2815112	$2,349	1.0035	$2,357	$4 241	$8,928	379%
85	Pascagoula	MS	Lemoyne	AL	MSE-MOBIL-NS	2815112	$314	1.0035	$315	$567	$2,758	875%
86.	Strang	TX	Lemoyne	AL	UP-NEWOR-NS	2812330	$2,011	1.0035	$2,018	$3,633	$6,899	342%
87	Beauharnois	PQ	Edgemoor	DE	CSXT BUFF-NS	2812815	$1,613	1.0035	$1,619	$2,914	$12,375	764%
88	Removed											
89	Belle	WV	Gainesville	GA	NS-CINTI CSXT	2813980	$1,635	1.0035	$1,641	$2,954	$10,487	639%
90	Belle	WV	Port Brenville	MS	NS-ATLA-CSXT-ANSLE-PBVR	2813934	$2,754	1.0035	$2,763	$4 974	$12,839	465%
91	Belle	WV	Theodore	AL	NS-CINTI-CSXT	2813934	$1,625	1.0035	$1,630	$2 935	$10,487	643%
92	Bellwood	VA	Dallas	GA	CSXT PTRSB-NS	2819315	$2,602	1.0035	$2,611	$4 700	$8,926	342%
93	Bellwood	VA	Fort Mill	SC	CSXT CHLTE-NS	2819315	$643	1.0035	$645	$1,161	$1,061	164%
94	Bellwood	VA	Rockwell	NC	CSXT-PTRSB-NS	2819315	$1 106	1.0035	$1,110	$1,997	$3,431	309%
95	Removed											
96.	Danville	VA	Ampthill	VA	NS PTRSB-CSXT	3274110	$718	1.0035	$720	$1,296	$1,910	265%
97	Edgemoor	DE	New Johnsonville	TN	NS-CINTI-CSXT	2816130	$2,375	1.0035	$2,383	$4,289	$9,594	403%
98	Enid	OK	Edgemoor	DE	BNSF-ESTL-NS	2991315	$3,602	1.0035	$3,615	$6,507	$14,518	402%
99	Loudon	TN	Grangers	NC	NS-CHATT-CSXT	2818512	$642	1.0035	$644	$1,159	$1,490	231%
100	Loudon	TN	Grangers	NC	NS-CHATT CSXT	2818512	$493	1.0035	$495	$890	$1,684	340%
101	Miami Fort	OH	Dallas	GA	CSXT-CINTI-NS	2819315	$1 757	1.0035	$1 764	$3,174	$5,084	288%
102	Miami Fort	OH	Greenwood	GA	CSXT CHATT NS	2819325	$1,551	1.0035	$1,557	$2,802	$9,761	627%
103	Miami Fort	OH	McIntosh	AL	CSXT CHATT-NS	2819340	$1,090	1.0035	$1,094	$1,969	$8,664	792%
104	Removed											
105	Removed											
106.	Miami Fort	OH	Pepper	VA	CSXT-CINTI NS	2819345	$2,350	1.0035	$2,359	$4,246	$5,174	219%
107	Nitrium	WV	Belle	WV	CSXT-CINTI-NS	2812220	$1,663	1.0035	$1,671	$3,007	$8 532	511%
108	Nitrium	WV	Danville	VA	CSXT LYNCH-NS	2812220	$426	1.0035	$427	$769	$2,698	631%
109	New Johnsonville	TN	Chapman	PA	CSXT-CINTI-NS	2816130	$2,356	1.0035	$2,364	$4 256	$7,652	324%
110.	Removed											
111	New Johnsonville	TN	Morrow	GA	CSXT-CHATT-NS	2816130	$752	1.0035	$755	$1,358	$4 813	638%
112	Niagara Falls	NY	Belle	WV	CSXT-CLMBO-NS	2812220	$831	1.0035	$834	$1,501	$3 269	392%
113	Niagara Falls	NY	Edgemoor	DE	CSXT-BUFF-NS	2812815	$1,621	1.0035	$1,627	$2,928	$12,375	761%
114	Niagara Falls	NY	Edgemoor	DE	CSXT-BUFF-NS	2812220	$1,653	1.0035	$1,659	$2,987	$4 444	268%
115	Pascagoula	MS	Fort Mill	SC	CSXT ATLA-NS	2815112	$1,337	1.0035	$1,342	$2 415	$5,350	399%
116	Starke	FL	Huntsville	AL	CSXT-DCTUR NS	1441325	$321	1.0035	$322	$579	$1 910	594%
117	Starke	FL	Huntsville	AL	CSXT DCTUR-NS	1441325	$511	1.0035	$513	$923	$1,910	372%
118	Wurtland	KY	Fort Mill	SC	CSXT-CHLTE-NS	2819315	$646	1.0035	$648	$1,167	$1,061	164%
119	Wurtland	KY	McIntosh	AL	CSXT BHAM-NS	2819315	$875	1.0035	$878	$1,580	$2,633	300%
120	Belle	WV	Divine	IL	NS-PINE-CN	2813980	$1,683	1.0035	$1,689	$3,040	$11,542	683%
121	Belle	WV	Mapleton	IL	NS-LOGPT-TPW	2813934	$1 488	1.0035	$1,493	$2,688	$7,845	525%
122	Burnside	LA	Chatsworth	GA	CN NEWOR-NS	2819325	$2,159	1.0035	$2,166	$3,899	$18,406	850%
123	Lemont	IL	Edgemoor	DE	BNSF-CHGO-NS	2991315	$3,025	1.0035	$3,036	$5,465	$9,864	325%
124	New Johnsonville	TN	McDonough	GA	CSXT-CHATT-NS	2816130	$1,056	1.0035	$1,060	$1,908	$4,815	454%
125	Charleston	TN	Woodstock	TN	NS MEMPH CN	2812410	$1,189	1.0035	$1 194	$2,148	$9,265	776%
126	Reybold	DE	Albuquerque	NM	NS-STRTR-BNSF	2819315	$2,580	1.0035	$2,589	$4,660	$10,844	419%
127	Reybold	DE	Baltimore	MD	NS BALBV-CSXT	2819315	$449	1.0035	$451	$811	$3 900	865%
128	Reybold	DE	Blair	NE	NS-CHGO-UP	2819315	$2,395	1.0035	$2,404	$4 327	$10,008	416%
129	Reybold	DE	Brewton	AL	NS-BHAM CSXT	2819315	$2,711	1.0035	$2,720	$4,896	$10,476	385%
130	Reybold	DE	Castle Hayne	NC	NS CHLTE-CSXT	2819315	$1,879	1.0035	$1,886	$3 395	$3,844	310%
131	Reybold	DE	Clifton	AZ	NS KCITY-UP	2819315	$3 444	1.0035	$3,456	$6,222	$14,928	432%
132	Reybold	DE	Carson	SD	NS-CHGO-BNSF	2819315	$2,394	1.0035	$2,403	$4,325	$10,008	417%
133	Removed											
134	Reybold	DE	Ferguson	MS	NS-MEMPHIS-CN	2819315	$3 130	1.0035	$3,141	$5,654	$12,882	410%
135	Reybold	DE	Hastings	NE	NS-CHGO-BNSF	2819315	$2,394	1.0035	$2,403	$4 325	$10,008	417%
136	Reybold	DE	Indianapolis	IN	NS-CINTI-CSXT	2819315	$2,163	1.0035	$2,171	$3,908	$8,880	409%
137	Reybold	DE	Omaha	NF	NS-CHGO-UP	2819315	$2,395	1.0035	$2,403	$4,326	$10,008	416%
138	Reybold	DE	Orange	TX	NS ESTL-BNSF	2819315	$2,859	1.0035	$2,869	$5,164	$12,192	425%
139	Reybold	DE	Phoenix	AZ	NS-STRTR BNSF	2819315	$2 579	1.0035	$2,588	$4,659	$10,844	419%
140	Reybold	DE	Sioux City	IA	NS-CHGO-BNSF	2819315	$2,394	1.0035	$2 403	$4,325	$10,008	417%
141.	Reybold	DE	Toledo	OH	NS-TOLED-CSXT	2819315	$3,003	1.0035	$3,013	$5,424	$7 200	239%
142	Reybold	DE	Washington	WV	NS-HAGTN-CSXT	2819315	$718	1.0035	$721	$1,298	$6,444	894%

1/ Column (5) x Column (6)
2/ Column (7) x 1.8
3/ Tariff Rate from Rebuttal Exhibit II-A-16
4/ Column (9)/Column (7)

TAB 12

Variable Cost, Jurisdictional Threshold, Tariff Rate and
Revenue/Variable Cost Ratios Per Car for DuPont Movements - 1Q12

	Origin		Destination							1Q2012			
	City	ST	City	ST	Railroad(s)	Commodity	Phase III Cost Base Year 2011	Index to 1Q12	Phase III Cost 1/	Jurisdictional Threshold 2/	Tariff Rate 3/	Revenue/Variable Cost Ratio 4/
	(1)		(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Exhibit A - Local Moves												
1	Removed											
2	Dayway	NJ	Waynesville	NC	NS	2819315	$2,606	1.0076	$2,626	$4,727	$12,855	490%
3	Belle	WV	Danville	IL	NS	2813980	$1,907	1.0076	$1,921	$3,458	$11,836	616%
4	Removed											
5	Removed											
6	Removed											
7	Removed											
8	Removed											
9	Belle	WV	Wyandotte	MI	NS	2813934	$1,414	1.0076	$1,424	$2,564	$8,814	619%
10	Charleston	TN	Edgemoor	DE	NS	2812815	$2,581	1.0076	$2,601	$4,682	$18,562	714%
11	Edgemoor	DE	Chicago	IL	NS	2816130	$2,583	1.0076	$2,603	$4,685	$9,844	378%
12	Edgemoor	DE	Chillicothe	OH	NS	2816130	$2,515	1.0076	$2,534	$4,562	$6,510	257%
13	Edgemoor	DE	Mahrt	AL	NS	2816130	$3,324	1.0076	$3,349	$6,029	$12,375	370%
14	Edgemoor	DE	Riverwood Intl	GA	NS	2816130	$3,015	1.0076	$3,038	$5,469	$6,270	206%
15	Edgemoor	DE	Wabash	IN	NS	2816130	$2,644	1.0076	$2,664	$4,796	$6,627	249%
16	Lamoyne	AL	Grant	SC	NS	4810560	$2,723	1.0076	$2,744	$4,939	$5,136	187%
17	Loudon	TN	Braithwaite	LA	NS	2818512	$2,222	1.0076	$2,239	$4,030	$4,125	184%
18	Louisville	KY	Decatur	IL	NS	2819450	$1,417	1.0076	$1,428	$2,570	$4,596	322%
19	Louisville	KY	Lafayette	IN	NS	2819450	$1,774	1.0076	$1,787	$3,217	$6,139	343%
20	Removed											
21	Removed											
22	McIntosh	AL	Lamoyne	AL	NS	2812220	$561	1.0076	$565	$1,017	$1,605	284%
23	Reybold	DE	Detroit	MI	NS	2819315	$2,067	1.0076	$2,082	$3,748	$7,812	375%
24	Reybold	DE	Fort Mill	SC	NS	2819315	$2,072	1.0076	$2,087	$3,757	$6,108	293%
25	Reybold	DE	Morrisville	PA	NS	2819315	$650	1.0076	$655	$1,180	$3,614	551%
Exhibit B - Joint Moves												
1	Belle	WV	Anaheim	CA	NS-CHGO-UP	2813980	$1,782	1.0076	$1,796	$3,233	$12,100	674%
2	Belle	WV	Bayport	TX	NS ESTL-UP	2818620	$2,242	1.0076	$2,259	$4,066	$11,812	523%
3	Removed											
4	Belle	WV	Brownsville	TX	NS ESTL-UP	2818221	$2,217	1.0076	$2,234	$4,021	$11,812	529%
5	Belle	WV	Burley	ID	NS-CHGO-UP	2813934	$1,782	1.0076	$1,796	$3,233	$12,100	674%
6	Belle	WV	Cadet	MO	NS-KCITY-UP	2813934	$2,776	1.0076	$2,797	$5,035	$19,539	699%
7	Removed											
8	Belle	WV	Channelview	TX	NS-ESTL-UP	2818130	$2,051	1.0076	$2,067	$3,721	$11,812	571%
9	Belle	WV	City of Commerce	CA	NS-STRTR BNSF	2818221	$1,935	1.0076	$1,949	$3,509	$10 242	525%
10	Belle	WV	Conroe	TX	NS-ESTL-BNSF	2813934	$2,210	1.0076	$2,227	$4,009	$14,136	635%
11	Belle	WV	Corsicana	TX	NS-ESTL-UP	2813934	$2,099	1.0076	$2,115	$3,807	$14 136	668%
12	Removed											
13	Belle	WV	East Billings	MT	NS-CHGO-BNSF	2818130	$1 739	1.0076	$1,773	$3,191	$8,533	481%
14	Belle	WV	Ethyl	AR	NS ESTL-UP-MCNEI-UNW	2813934	$2,117	1.0076	$2,133	$3,840	$14,136	663%
15	Belle	WV	Finley	WA	NS-CHGO-BNSF	2813934	$1,783	1.0076	$1,797	$3,234	$12,100	673%
16	Removed											
17	Belle	WV	Freeport	TX	NS-ESTL-UP	2818130	$1,950	1.0076	$1 965	$3 537	$11,812	601%
18	Belle	WV	Garyville	LA	NS-NTWOR-CN	2813934	$3,207	1.0076	$3,232	$5,817	$22,732	703%
19	Belle	WV	Gramar	LA	NS-NTWOR-CN	2813934	$2,928	1.0076	$2,950	$5,311	$22,732	770%
20	Belle	WV	Janesville	WI	NS-CHGO-UP	2818131	$1,745	1.0076	$1,758	$3,165	$12,100	688%
21	Belle	WV	Laredo	TX	NS ESTL-UP	2818221	$2,217	1.0076	$2,234	$4,021	$11,812	529%
22	Belle	WV	Laredo	TX	NS-ESTL-UP	2818131	$2,217	1.0076	$2,234	$4,021	$14,136	633%
23	Belle	WV	Lorenzo	IL	NS-CHGO-BNSF	2813980	$1,773	1.0076	$1,787	$3,217	$12,100	677%
24	Belle	WV	Los Angeles	CA	NS STRTR BNSF	2813934	$1,987	1.0076	$2,002	$3,603	$13,450	672%
25	Belle	WV	Los Angeles	CA	NS-CHGO UP	2818130	$1,770	1.0076	$1,783	$3,210	$8,533	479%
26	Removed											
27	Belle	WV	Mulladale	IL	NS-CHGO-CN	2818131	$1 753	1.0076	$1,766	$3,179	$12,100	685%
28	Removed											
29	Belle	WV	Saint Paul	MN	NS-CHGO-BNSF	2818221	$1 944	1.0076	$1,959	$3,526	$8,533	436%
30	Belle	WV	San Dimas	CA	NS-CHGO UP	2813980	$1,986	1.0076	$1,921	$3 457	$12,100	630%
31	Removed											
32	Belle	WV	St Gabriel	LA	NS-NTWOR-CN	2813934	$3,176	1.0076	$3,200	$5,760	$22,732	710%
33	Belle	WV	St Joseph	MO	NS-KCITY UP	2818130	$2 779	1.0076	$2,800	$5,040	$13,535	483%
34	Removed											
35	Belle	WV	Strang	TX	NS-ESTL-UP	2818221	$2,304	1.0076	$2,322	$4 179	$11 812	509%
36	Belle	WV	Strang	TX	NS ESTL-BNSF	2813934	$1,891	1.0076	$1,905	$3,429	$14,136	742%
37	Belle	WV	Strang	TX	NS-ESTL-UP	2819183	$2,021	1.0076	$2,036	$3,665	$5,139	252%
38	Removed											
39	Belle	WV	Texas City	TX	NS-ESTL-UP	2813934	$2,116	1.0076	$2,132	$3,838	$14,136	663%
40	Belle	WV	Verona	MO	NS-ESTL-BNSF	2813934	$2,197	1.0076	$2,213	$3,984	$14 136	639%
41	Belle	WV	West Memphis	AR	NS-KCITY UP	2813934	$2,765	1.0076	$2,786	$5,014	$19,539	701%
42	Belle	WV	Winfield Spur	LA	NS-MERID KCS	2813980	$2,677	1.0076	$2,697	$4,855	$19,888	737%
43	Belle	WV	Wichita	KS	NS ESTL-BNSF	2813934	$2 241	1.0076	$2,258	$4,065	$14,136	626%
44	Bloomington	TX	Greenville	SC	UP-NEWOR-NS	2821142	$1,931	1.0076	$1,946	$3,503	$6,113	314%
45	Bloomington	TX	Washington, Warren	NJ	UP-ESTL-NS	2821142	$2,689	1.0076	$2,710	$4 878	$9 644	356%
46	Removed											
47	Charleston, Bradley	TN	Woodstock	TN	NS MEMPH CN	2812220	$1,205	1.0076	$1,214	$2,186	$4 170	343%
48	Crump	WV	Edgemoor	DE	CSXT HAGTN NS	2991315	$747	1.0076	$753	$1,356	$3 591	477%
49	Dowling	TX	Fort Mill	SC	KCS MERID-NS	2815112	$2 018	1.0076	$2,033	$3,660	$7,690	378%
50	Edgemoor	DE	Garland	TX	NS-MERID-KCS	2816130	$3 247	1.0076	$3,272	$5,890	$9,388	287%
51	Edgemoor	DE	Green	MI	NS-CHGO-CN	2816130	$2,481	1.0076	$2,500	$4 499	$9,844	394%
52	Edgemoor	DE	Laredo	TX	NS ESTL-UP	2816130	$2 871	1.0076	$2,893	$5,208	$10,991	380%
53	Edgemoor	DE	Madawaska	ME	NS ROUPT CN	2816130	$1,481	1.0076	$1 492	$2,686	$5,029	337%
54	Edgemoor	DE	Pasadena	TX	NS-ESTL-UP	2819971	$2,811	1.0076	$2,832	$5,098	$24,453	863%
55	Edgemoor	DE	Port Huron	MI	NS-BUFF-CN	2816130	$1,931	1.0076	$1,945	$3,501	$7,404	381%
56	Edgemoor	DE	Portland	ME	NS MCV-PAS AYERM-ST	2816130	$1,478	1.0076	$1,490	$2,681	$5,029	338%
57	Edgemoor	DE	Portland	OR	NS-CHGO BNSF	2816130	$2,504	1.0076	$2,523	$4,541	$9,844	390%
58	Edgemoor	DE	Quanesec	MI	NS CHGO-CN	2816130	$2 479	1.0076	$2,498	$4 496	$9,844	394%
59	Edgemoor	DE	Raleys	ME	NS-MCV-PAS AYERM-ST	2816130	$1,482	1.0076	$1,494	$2,689	$5,029	337%
60	Edgemoor	DE	Rumford	ME	NS-MCV-PAS AYERM ST	2816130	$1,478	1.0076	$1,489	$2,680	$5,029	338%
61	Removed											
62	Edgemoor	DE	Shawmut	ME	NS-MCV PAS-AYERM-ST	2816130	$1,479	1.0076	$1,491	$2,683	$5,029	337%

Variable Cost, Jurisdictional Threshold, Tariff Rate and
Revenue/Variable Cost Ratios Per Car for DuPont Movements - 1Q12

	Origin City (1)	ST	Destination City (2)	ST	Railroad(s) (3)	Commodity (4)	Phase III Cost Base Year 2011 (5)	1Q2012 Index to 1Q12 (6)	1Q2012 Phase III Cost 1/ (7)	1Q2012 Jurisdictional Threshold 2/ (8)	1Q2012 Tariff Rate 3/ (9)	1Q2012 Revenue/Variable Cost Ratio 4/ (10)
63	Edgemoor	DE	Sneboy	CA	NS-CHGO-UP	2816130	$2,508	1.0076	$2,527	$4 549	$9,844	390%
64	Edgemoor	DE	Sneboy	CA	NS-STRTR-BNSF	2816130	$2,699	1.0076	$2,720	$4,895	$10,944	402%
65	Edgemoor	DE	St Paul	MN	NS-CHGO-UP	2816130	$2,507	1.0076	$2,526	$4,547	$9,844	390%
66	Removed											
67	Edgemoor	DE	Wes. Monroe	LA	NS-MERID KCS	2816110	$1 258	1.0076	$1 283	$5 909	$9 388	286%
68	Edgemoor	DE	Wheeling	IL	NS-CHGO-CN	2816130	$2,525	1.0076	$2,544	$4,579	$9,844	387%
69	Enid	OK	Edgemoor	DE	BNSF-ESTL-NS	2991315	$2,893	1.0076	$2,915	$5,247	$12,624	433%
70	Removed											
71	Gregory	TX	Dragon	MS	UP-NEWOR-NS	2813984	$573	1.0076	$577	$1,039	$2,486	431%
72	Removed											
73	Gregory	TX	Royse	NJ	UP-ESTL-NS	2813984	$3,050	1.0076	$3,073	$5 531	$21,912	713%
74	Removed											
75	Lemont	IL	Edgemoor	DE	BNSF-CHGO-NS	2991315	$2,374	1.0076	$2,392	$4,306	$8,384	350%
76	Lemoyne	AL	Artesia	MS	NS-MERID KCS	4810560	$1,410	1.0076	$1,421	$2 558	$8,983	632%
77	McIntosh	AL	Burnside	LA	NS-MOBIL-CN	2819330	$358	1.0076	$361	$649	$2,400	665%
78	McIntosh	AL	Delisle	MS	NS MOBIL CN HATBG-KCS	2812815	$362	1.0076	$365	$657	$2,900	794%
79	McIntosh	AL	Delisle	MS	NS MOBIL-CN-HATBG-KCS	2812220	$369	1.0076	$372	$669	$2,400	646%
80	McIntosh	AL	Orange	TX	NS-NEWOR-UP	2812220	$1,797	1.0076	$1,810	$3,259	$9,214	509%
81	McIntosh	AL	Woodstock	TN	NS-MOBIL-CN	2812220	$368	1.0076	$371	$668	$2,400	647%
82	Orange	TX	Greenville	SC	UP-NEWOR-NS	2821141	$3,357	1.0076	$3,375	$4,174	$6,113	257%
83	Orange	TX	Washington Warren	NJ	UP-ESTL-NS	2821142	$2,512	1.0076	$2,531	$4,556	$9,644	381%
84	Pascagoula	MS	Fort Mill	SC	MSE-MOBIL-NS	2815112	$2,349	1.0076	$2,367	$4,261	$8,928	377%
85	Pascagoula	MS	Lemoyne	AL	MSE-MOBIL NS	2815112	$314	1.0076	$316	$569	$2,758	872%
86	Strang	TX	Lemoyne	AL	UP-NEWOR NS	2812350	$2 011	1.0076	$2,026	$3 648	$6,899	340%
87	Beauharnois	PQ	Edgemoor	DE	CSXT BUFF-NS	2812815	$1,613	1.0076	$1,626	$2,926	$12,375	761%
88	Removed											
89	Belle	WV	Gainesville	GA	NS-CINTI-CSXT	2813980	$1,635	1.0076	$1,648	$2,966	$10,487	636%
90	Belle	WV	Fort Bienvil e	MS	NS-ATLA-CSXT-ANSLE-PBVR	2813934	$2,754	1.0076	$2,775	$4,994	$12,839	463%
91	Belle	WV	Theodore	AL	NS-CINTI-CSXT	2813934	$1,625	1.0076	$1,637	$2,947	$10,487	641%
92	Bellwood	VA	Dallas	GA	CSXT-PTRSB NS	2819315	$2,602	1.0076	$2,622	$4,719	$8,926	340%
93	Bellwood	VA	Fort Mill	SC	CSXT CHLTE-NS	2819315	$643	1.0076	$648	$1,166	$1,061	164%
94	Bellwood	VA	Rockwell	NC	CSXT-PTRSB NS	2819315	$1 106	1.0076	$1,114	$2,006	$3 431	308%
95	Removed											
96	Danville	VA	Amphill	VA	NS PTRSD-CSXT	3274110	$718	1.0076	$723	$1,302	$1,910	264%
97	Edgemoor	DE	New Johnsonville	TN	NS-CINTI-CSXT	2816130	$2,375	1.0076	$2,393	$4,307	$9 594	401%
98	Enid	OK	Edgemoor	DE	BNSF-ESTL-NS	2991315	$3,602	1.0076	$3,630	$6,534	$14,518	400%
99	Loudon	TN	Grainger	NC	NS-CHATT-CSXT	2818512	$642	1.0076	$647	$1,164	$1,490	230%
100	Loudon	TN	Grainger	NC	NS-CHATT-CSXT	2818512	$493	1.0076	$497	$894	$1 684	339%
101	Miami Fort	OH	Dallas	GA	CSXT-CINTI-NS	2819315	$1,757	1.0076	$1,771	$3 187	$5,084	287%
102	Miami Fort	OH	Gracewood	GA	CSXT-CHATT NS	2819325	$1,551	1.0076	$1,563	$2,813	$9,761	625%
103	Miami Fort	OH	McIntosh	AL	CSXT CHATT NS	2819340	$1,090	1.0076	$1,098	$1,977	$8,664	789%
104	Removed											
105	Removed											
106	Miami Fort	OH	Pepper	VA	CSXT-CINTI-NS	2819345	$2,350	1.0076	$2,368	$4 263	$5,174	218%
107	Nitrium	WV	Belle	WV	CSXT-CINTI-NS	2812220	$1,665	1.0076	$1,677	$3,019	$8,532	509%
108	Nitrium	WV	Danville	VA	CSXT-LYNCH NS	2812220	$426	1.0076	$429	$772	$2,696	628%
109	New Johnsonville	TN	Chapman	PA	CSXT-CINTI NS	2816130	$2,356	1.0076	$2,374	$4 273	$7 652	322%
110	Removed											
111	New Johnsonville	TN	Morrow	GA	CSXT CHATT NS	2816130	$752	1.0076	$758	$1,364	$4,815	636%
112	Niagara Falls	NY	Belle	WV	CSXT-CLMBS-NS	2812220	$831	1.0076	$837	$1,507	$3 260	391%
113	Niagara Falls	NY	Edgemoor	DE	CSXT BUFF NS	2812815	$1,621	1.0076	$1,633	$2,940	$12,375	758%
114	Niagara Falls	NY	Edgemoor	DE	CSXT BUFF-NS	2812220	$1 653	1.0076	$1,666	$2,999	$4,444	267%
115	Pascagoula	MS	Fort Mill	SC	CSXT-ATLA-NS	2815112	$1,337	1.0076	$1,347	$2,425	$5,350	397%
116	Starke	FL	Huntsville	AL	CSXT DCTUR-NS	1441325	$321	1.0076	$323	$581	$1,910	591%
117	Starke	FL	Huntsville	AL	CSXT DCTUR-NS	1441325	$511	1.0076	$515	$927	$1 910	371%
118	Wurtland	KY	Fort Mill	SC	CSXT-CHLTE NS	2819315	$646	1.0076	$651	$1,172	$1 061	163%
119	Wurtland	KY	McIntosh	AL	CSXT-BHAM NS	2819315	$875	1.0076	$882	$1,587	$2,633	299%
120	Belle	WV	Devine	IL	NS-PINE-CN	2813980	$1,683	1.0076	$1 696	$3,052	$11,342	681%
121	Belle	WV	Mapleton	IL	NS LOGPT-TPW	2813934	$1 488	1.0076	$1,499	$2,699	$7,845	523%
122	Buranda	LA	Gracewood	GA	CN NEWOR-NS	2819325	$2,139	1.0076	$2,175	$3,915	$18,406	846%
123	Lemont	IL	Edgemoor	DE	BNSF-CHGO-NS	2991315	$3,025	1.0076	$3,049	$5,487	$9,864	324%
124	New Johnsonville	TN	McDonough	GA	CSXT-CHATT NS	2816130	$1,056	1.0076	$1,064	$1,916	$4,815	452%
125	Charleston	TN	Woodstock	TN	NS-MEMPH-CN	2812410	$1,189	1.0076	$1,198	$2,157	$9,265	773%
126	Reybold	DE	Albuquerque	NM	NS-STRTR-BNSF	2819315	$2,580	1.0076	$2,599	$4,679	$10,844	417%
127	Reybold	DE	Baltimore	MD	NS-BALBV-CSXT	2819315	$449	1.0076	$453	$815	$3 900	862%
128	Reybold	DE	Blair	NE	NS-CHGO-UP	2819315	$2,395	1.0076	$2,414	$4,344	$10,008	415%
129	Reybold	DE	Bowman	AL	NS-BHAM-CSXT	2819315	$2 711	1.0076	$2,731	$4,916	$10,476	384%
130	Reybold	DE	Camp Lejeune	NC	NS-CHLTT-CSXT	2819315	$1 879	1.0076	$1,894	$3,408	$5,844	309%
131	Reybold	DE	Clifton	AZ	NS-KCITY-UP	2819315	$3,444	1.0076	$3,471	$6,247	$14,928	430%
132	Reybold	DE	Corson	SD	NS-CHGO-BNSF	2819315	$2,394	1.0076	$2,412	$4,342	$10 008	415%
133	Removed											
134	Reybold	DE	Ferguson	MS	NS MEMPHIS-CN	2819315	$3,130	1.0076	$3,154	$5,677	$12,882	408%
135	Reybold	DE	Hastings	NE	NS-CHGO-BNSF	2819315	$2,394	1.0076	$2,413	$4 343	$10 008	415%
136	Reybold	DE	Indianapolis	IN	NS-CINTI-CSXT	2819315	$2,163	1.0076	$2,180	$3 924	$8,880	407%
137	Reybold	DE	Omaha	NE	NS-CHGO-UP	2819315	$2,395	1.0076	$2,413	$4,344	$10,008	415%
138	Reybold	DE	Orange	TX	NS-ESTL-BNSF	2819315	$2,859	1.0076	$2,881	$5,185	$12,192	423%
139	Reybold	DE	Phoenix	AZ	NS STRTR BNSF	2819315	$2,579	1.0076	$2,599	$4,678	$10,844	417%
140	Reybold	DE	Sioux City	IA	NS-CHGO-BNSF	2819315	$2,394	1.0076	$2,413	$4,343	$10,008	415%
141	Reybold	DE	Toledo	OH	NS-TOLED-CSXT	2819315	$3,003	1.0076	$3,026	$5,446	$7 200	238%
142	Reybold	DE	Washington	WV	NS-HAGTN-CSXT	2819315	$718	1.0076	$724	$1,303	$6,444	890%

1/ Column (5) x Column (6)
2/ Column (7) x 1 8
3/ Tariff Rate from Rebuttal Exhibit II-A-16
4/ Column (9)/Column (7)

TAB 13

DuPont Rebuttal Miles Calculations

	Origin City (1)	ST	Destination City (2)	ST	Route (3)	PC Miler v 18 Practical Miles For No Data (4)	Rebuttal Miles Used For I&O 1/ (5)	NS Reply Miles (6)	Difference 2/ (7)
Exhibit A - Local Moves									
1.	Removed								
2	Bayway	NJ	Waynesville	NC	NS	830	838	838	0
3	Belle	WV	Danville	IL	NS	571	598	598	0
4	Removed								
5	Removed								
6.	Removed								
7	Removed								
8	Removed								
9	Belle	WV	Wyandotte	MI	NS	387	435	602	-167
10	Charleston	TN	Edgemoor	DE	NS	799	870	870	0
11.	Edgemoor	DE	Chicago	IL	NS	838	822	822	0
12	Edgemoor	DE	Chillicothe	OH	NS	669	797	797	0
13	Edgemoor	DE	Mabrt	AL	NS	1,113	1,098	1,098	0
14	Edgemoor	DE	Riverwood Intl	GA	NS	987	982	982	0
15	Edgemoor	DE	Wabash	IN	NS	723	841	841	0
16	Lemoyne	AL	Gaint	SC	NS	780	943	943	0
17	Loudon	TN	Braithwaite	LA	NS	593	664	679	-15
18	Louisville	KY	Decatur	IL	NS	386	385	385	0
19	Louisville	KY	Lafayette	IN	NS	393	522	522	0
20	Removed								
21	Removed								
22	McIntosh	AL	Lemoyne	AL	NS	21	60	78	-18
23.	Reybold	DE	Detroit	MI	NS	651	651	651	0
24	Reybold	DE	Fort Mill	SC	NS	653	653	653	0
25	Reybold	DE	Morrisville	PA	NS	97	97	97	0
Exhibit B - Joint Moves									
1	Belle	WV	Anaheim	CA	NS-CHGO-UP	570	607	607	0
2	Belle	WV	Bayport	TX	NS-ESTL-UP	757	737	785	-48
3	Removed								
4	Belle	WV	Brownsville	TX	NS-ESTL-UP	757	757	757	0
5	Belle	WV	Burley	ID	NS-CHGO-UP	570	607	607	0
6	Belle	WV	Cadet	MO	NS-KCITY-UP	985	1,001	1,100	-99
7	Removed								
8	Belle	WV	Channelview	TX	NS-ESTL-UP	757	735	735	0
9	Belle	WV	City of Commerce	CA	NS-STRTR-BNSF	648	648	648	0
10	Belle	WV	Conroe	TX	NS-ESTL-BNSF	757	774	774	0
11	Belle	WV	Corsicana	TX	NS-ESTL-UP	757	734	734	0
12	Removed								
13	Belle	WV	East Billings	MT	NS-CHGO-BNSF	570	601	601	0
14	Belle	WV	Ethyl	AR	NS-ESTL-UP-MCNEI-LNW	757	734	734	0
15	Belle	WV	Finley	WA	NS-CHGO-BNSF	570	602	602	0
16	Removed								
17.	Belle	WV	Freeport	TX	NS-ESTL-UP	757	732	732	0
18	Belle	WV	Garyville	LA	NS-NEWOR-CN	1,023	1,151	1,266	-115
19.	Belle	WV	Geismar	LA	NS-NEWOR-CN	1,023	1,023	1,023	0
20	Belle	WV	Janesville	WI	NS-CHGO-UP	570	600	600	0
21	Belle	WV	Laredo	TX	NS-ESTL-UP	757	757	757	0
22	Belle	WV	Laredo	TX	NS-ESTL-UP	757	757	757	0
23	Belle	WV	Lorenzo	IL	NS-CHGO-BNSF	570	593	593	0
24.	Belle	WV	Los Angeles	CA	NS-STRTR-BNSF	648	681	681	0
25	Belle	WV	Los Angeles	CA	NS-CHGO-UP	570	609	609	0
26	Removed								
27.	Belle	WV	Millsdale	IL	NS-CHGO-CN	570	598	598	0
28	Removed								
29.	Belle	WV	Saint Paul	MN	NS-CHGO-BNSF	570	603	603	0
30.	Belle	WV	San Dimas	CA	NS-CHGO-UP	570	650	650	0
31	Removed								
32.	Belle	WV	St Gabriel	LA	NS-NEWOR-CN	1,023	1,151	1,209	-58
33.	Belle	WV	St Joseph	MO	NS-KCITY-UP	985	1,006	1,006	0
34	Removed								
35	Belle	WV	Strang	TX	NS-ESTL-UP	757	736	736	0
36	Belle	WV	Strang	TX	NS ESTL-BNSF	757	735	735	0
37	Belle	WV	Strang	TX	NS-ESTL-UP	757	736	736	0
38	Removed								
39	Belle	WV	Texas City	TX	NS-ESTL-UP	757	737	737	0
40	Belle	WV	Verona	MO	NS-ESTL-BNSF	757	772	772	0
41	Belle	WV	West Memphis	AR	NS-KCITY-UP	985	1,001	1,001	0
42	Belle	WV	Winford Spur	LA	NS-MERID-KCS	824	957	1,058	-101

DuPont Rebuttal Miles Calculations

	Origin		Destination			PC Miler v 18 Practical Miles	Rebuttal Miles Used	NS Reply	
	City	ST	City	ST	Route	For No Data	For T&O 1/	Miles	Difference 2/
	(1)		(2)		(3)	(4)	(5)	(6)	(7)
43	Belle	WV	Wichita	KS	NS-ESTL-BNSF	757	786	786	0
44	Bloomington	TX	Greenville	SC	UP-NEWOR-NS	669	669	669	0
45	Bloomington	TX	Washington, Warren	NJ	UP-ESTL-NS	1,034	1,017	1,017	0
46	Removed								
47	Charleston, Bradley	TN	Woodstock	TN	NS-MEMPH-CN	352	352	352	0
48	Cresap	WV	Edgemoor	DE	CSXT-HAGTN-NS	209	197	197	0
49	Dowling	TX	Fort Mill	SC	KCS-MERID-NS	590	720	720	0
50	Edgemoor	DE	Garland	TX	NS-MERID-KCS	1,113	1,123	1,123	0
51	Edgemoor	DE	Grons	MI	NS-CHGO-CN	838	833	833	0
52	Edgemoor	DE	Laredo	TX	NS-ESTL-UP	1,021	1,021	1,021	0
53	Edgemoor	DE	Madawaska	ME	NS-ROUPT-CN	567	457	457	0
54	Edgemoor	DE	Pasadena	TX	NS-ESTL-UP	1,021	1,024	1,024	0
55	Edgemoor	DE	Port Huron	MI	NS-BUFF-CN	477	624	624	0
56	Edgemoor	DE	Portland	ME	NS-MCV-PAS-AYERM-ST	410	458	458	0
57	Edgemoor	DE	Portland	OR	NS-CHGO-BNSF	838	841	841	0
58	Edgemoor	DE	Quinnesec	MI	NS-CHGO-CN	838	834	834	0
59	Edgemoor	DE	Riley	ME	NS MCV-PAS-AYERM-S1	410	458	458	0
60	Edgemoor	DE	Rumford	ME	NS-MCV-PAS-AYERM-S1	410	456	456	0
61	Removed								
62	Edgemoor	DE	Shawmut	ME	NS-MCV-PAS-AYERM-ST	410	457	457	0
63	Edgemoor	DE	Snoboy	CA	NS-CHGO-UP	838	844	844	0
64	Edgemoor	DE	Snoboy	CA	NS-STRTR-BNSF	912	914	914	0
65	Edgemoor	DE	St Paul	MN	NS-CHGO-UP	838	844	844	0
66	Removed								
67	Edgemoor	DE	West Monroe	LA	NS-MERID-KCS	1,113	1,123	1,123	0
68	Edgemoor	DE	Wheeling	IL	NS-CHGO-CN	838	831	831	0
69	Enid	OK	Edgemoor	DE	BNSF-ESTL-NS	1,021	1,040	1,040	0
70	Removed								
71	Gregory	TX	Dragon	MS	UP-NEWOR-NS	118	118	118	0
72	Removed								
73	Gregory	TX	Royce	NJ	UP-ESTL-NS	1,058	1,063	1,063	0
74	Removed								
75	Lemont	IL	Edgemoor	DE	BNSF-CHGO-NS	866	838	838	0
76	Lemoyne	AL	Artesia	MS	NS-MERID-KCS	212	492	492	0
77	McIntosh	AL	Burnside	LA	NS-MOBIL-CN	41	41	41	0
78	McIntosh	AL	Delisle	MS	NS-MOBIL-CN-HATBG-KCS	41	41	41	0
79	McIntosh	AL	Delisle	MS	NS-MOBIL-CN-HATBG-KCS	41	41	41	0
80	McIntosh	AL	Orange	TX	NS-NEWOR-UP	390	585	585	0
81	McIntosh	AL	Woodstock	TN	NS-MOBIL-CN	41	41	41	0
82	Orange	TX	Greenville	SC	UP-NEWOR NS	669	991	991	0
83	Orange	TX	Washington, Warren	NJ	UP-ESTL-NS	1,034	1,092	1,092	0
84	Pascagoula	MS	Fort Mill	SC	MSE-MOBIL-NS	700	830	830	0
85	Pascagoula	MS	Lemoyne	AL	MSE-MOBIL-NS	19	19	47	-28
86	Strang	TX	Lemoyne	AL	UP-NEWOR-NS	412	655	655	0
87	Beauharnois	PQ	Edgemoor	DE	CSXT-BUFF-NS	477	542	542	0
88	Removed								
89	Belle	WV	Gainesville	GA	NS-CINTI-CSXT	323	545	545	0
90	Belle	WV	Port Bienville	MS	NS-ATLA-CSXT-ANSLE-PBVR	631	995	1,091	-96
91	Belle	WV	Theodore	AL	NS-CINTI-CSXT	323	543	543	0
92	Bellwood	VA	Dallas	GA	CSXT-PTRSB-NS	617	837	837	0
93	Bellwood	VA	Fort Mill	SC	CSXT-CHLTE-NS	23	144	144	0
94	Bellwood	VA	Rockwell	NC	CSXT-PTRSB-NS	297	306	306	0
95	Removed								
96	Danville	VA	Amphill	VA	NS-PTRSB-CSXT	187	189	189	0
97	Edgemoor	DE	New Johnsonville	TN	NS-CINTI-CSXT	744	796	881	-85
98	Enid	OK	Edgemoor	DE	BNSF-ESTL-NS	1,049	1,044	1,044	0
99	Loudon	TN	Grainger	NC	NS-CHATT-CSXT	84	156	156	0
100	Loudon	TN	Grainger	NC	NS-CHATT-CSXT	84	84	147	-63
101	Miami Fort	OH	Dallas	GA	CSXT-CINTI-NS	441	541	541	0
102	Miami Fort	OH	Gracewood	GA	CSXT-CHATT-NS	408	508	508	0
103	Miami Fort	OH	McIntosh	AL	CSXT-CHATT-NS	367	365	365	0
104	Removed								
105	Removed								
106	Miami Fort	OH	Pepper	VA	CSXT-CINTI-NS	490	795	795	0
107	Natrium	WV	Belle	WV	CSXT-CINTI-NS	323	531	542	-11
108	Natrium	WV	Danville	VA	CSXT-LYNCH-NS	63	63	63	0
109	New Johnsonville	TN	Chapman	PA	CSXT-CINTI-NS	720	795	795	0
110	Removed								
111	New Johnsonville	TN	Morrow	GA	CSXT-CHATT-NS	171	188	188	0
112	Niagara Falls	NY	Belle	WV	CSXT-CLMBO-NS	201	217	217	0

DuPont Rebuttal Miles Calculations

	Origin City (1)	ST	Destination City (2)	ST	Route (3)	PC Miler v 18 Practical Miles For No Data (4)	Rebuttal Miles Used For T&O 1/ (5)	NS Reply Miles (6)	Difference 2/ (7)
113	Niagara Falls	NY	Edgemoor	DE	CSXT-BUFF-NS	477	535	535	0
114	Niagara Falls	NY	Edgemoor	DE	CSXT-BUFF-NS	477	514	514	0
115	Pascagoula	MS	Fort Mill	SC	CSXT-ATLA-NS	273	433	482	-49
116	Starke	FL	Huntsville	AL	CSXT-DCTUR-NS	24	24	24	0
117	Starke	FL	Huntsville	AL	CSXT-DCTUR-NS	24	24	24	0
118	Wurtland	KY	Fort Mill	SC	CSXT-CHLTE-NS	23	144	144	0
119	Wurtland	KY	McIntosh	AL	CSXT-BHAM-NS	223	231	231	0
120	Belle	WV	Divine	IL	NS-PINE-CN	550	573	573	0
121	Belle	WV	Mapleton	IL	NS-LOGPT-TPW	489	583	583	0
122	Burnside	LA	Gracewood	GA	CN-NEWOR-NS	770	765	765	0
123	Lemont	IL	Edgemoor	DE	BNSF-CHGO-NS	866	838	838	0
124	New Johnsonville	TN	McDonough	GA	CSXT-CHATT-NS	182	301	329	-28
125	Charleston	TN	Woodstock	TN	NS MEMPH-CN	352	352	352	0
126	Reybold	DE	Albuquerque	NM	NS-STR IR BNSF	907	907	907	0
127	Reybold	DE	Baltimore	MD	NS-BALBV-CSXT	64	64	64	0
128	Reybold	DE	Blair	NE	NS-CHGO-UP	834	834	834	0
129	Reybold	DE	Brewton	AL	NS-BHAM-CSXT	955	955	955	0
130	Reybold	DE	Castle Hayne	NC	NS-CHL TE CSXT	631	631	631	0
131	Reybold	DE	Clifton	AZ	NS-KCITY-UP	1,245	1,245	1,245	0
132	Reybold	DE	Corson	SD	NS-CHGO-BNSF	834	834	834	0
133	Removed								
134	Reybold	DE	Ferguson	MS	NS-MEMPHIS-CN	1,120	1,120	1,120	0
135	Reybold	DE	Hastings	NE	NS-CHGO-BNSF	834	834	834	0
136	Reybold	DE	Indianapolis	IN	NS-CINTI-CSXT	740	740	740	0
137	Reybold	DE	Omaha	NE	NS-CHGO-UP	834	834	834	0
138	Reybold	DE	Orange	TX	NS-ESTL-BNSF	1,016	1,016	1,016	0
139	Reybold	DE	Phoenix	AZ	NS-STR IR-BNSF	907	907	907	0
140	Reybold	DE	Sioux City	IA	NS-CHGO-BNSF	834	834	834	0
141	Reybold	DE	Toledo	OH	NS-TOLED-CSXT	600	600	600	0
142	Reybold	DE	Washington	WV	NS-HAGTN-CSXT	179	179	179	0

1/ DuPont Rebuttal miles based on a weighted average for each lane, excluding NS and Duport "Outliers Dropped" and routes that make up less than 10% of a lane's traffic See work paper "DuPont Issue Traffic Mileages_DuPont Rebuttal xlsx" for summary of "outliers" dropped

2/ Column (5) - Column (6)

TAB 14

Summary of DuPont's Rebuttal Tons Per Car Calculations

	Origin City (1)	ST	Destination City (2)	ST	Route (3)	Car Type (4)	Tons Per Car: DuPont Rebuttal (5)	Tons Per Car: NS Reply (6)	Tons Per Car: Difference (7)
Exhibit A - Local Moves									
1	Removed								
2	Bayway	NJ	Waynesville	NC	NS	Tank Car < 22,000 Gallons	98 3	98 3	0 0
3	Belle	WV	Danville	IL	NS	Tank Car > 22,000 Gallons	78 6	78 6	0 0
4	Removed								
5	Removed								
6	Removed								
7.	Removed								
8	Removed								
9	Belle	WV	Wyandotte	MI	NS	Tank Car < 22,000 Gallons	77 9	77 9	0 0
10	Charleston	TN	Edgemoor	DE	NS	Tank Car < 22,000 Gallons	89 9	89 9	0 0
11	Edgemoor	DE	Chicago	IL	NS	Tank Car < 22,000 Gallons	99 9	99 9	0 0
12.	Edgemoor	DE	Chillicothe	OH	NS	Tank Car < 22,000 Gallons	99.8	99 8	0 0
13	Edgemoor	DE	Mahrt	AL	NS	Tank Car < 22,000 Gallons	100 5	100 5	0 0
14	Edgemoor	DE	Riverwood Intl	GA	NS	Tank Car < 22,000 Gallons	100 5	100 5	0 0
15	Edgemoor	DE	Wabash	IN	NS	Tank Car < 22,000 Gallons	100 7	100 8	0 0
16.	Lemoyne	AL	Giant	SC	NS	Tank Car > 22,000 Gallons	74 8	74 8	0 0
17	Loudon	TN	Braithwaite	LA	NS	Tank Car > 22,000 Gallons	93.7	93 7	0 0
18	Louisville	KY	Decatur	IL	NS	Tank Car < 22,000 Gallons	98 6	98 6	0 0
19	Louisville	KY	Lafayette	IN	NS	Tank Car < 22,000 Gallons	98 1	98 1	0 0
20	Removed								
21	Removed								
22	McIntosh	AL	Lemoyne	AL	NS	Tank Car < 22,000 Gallons	98 3	98 3	0 0
23	Reybold	DE	Detroit	MI	NS	Tank Car < 22,000 Gallons	93 4	96.2	-2 8
24	Reybold	DE	Fort Mill	SC	NS	Tank Car < 22,000 Gallons	93 4	96 2	-2 8
25.	Reybold	DE	Morrisville	PA	NS	Tank Car < 22,000 Gallons	93 4	96 2	-2 8
Exhibit B - Joint Moves									
1	Belle	WV	Anaheim	CA	NS-CHGO-UP	Tank Car > 22,000 Gallons	78.0	78 0	0 0
2	Belle	WV	Bayport	TX	NS-ESTL-UP	Tank Car > 22,000 Gallons	90 2	90 2	0 0
3.	Removed								
4.	Belle	WV	Brownsville	TX	NS-ESTL-UP	Tank Car > 22,000 Gallons	83 2	95 3	-12 2
5	Belle	WV	Burley	ID	NS-CHGO-UP	Tank Car > 22,000 Gallons	78 0	78 0	0 0
6	Belle	WV	Cadet	MO	NS-KCITY-UP	Tank Car > 22,000 Gallons	78 1	78 1.	0 0
7	Removed								
8	Belle	WV	Channelview	TX	NS-ESTL-UP	Tank Car > 22,000 Gallons	73 1	73 1	0 0
9	Belle	WV	City of Commerce	CA	NS-STRTR-BNSF	Tank Car > 22,000 Gallons	83 2	96.5	-13 4
10	Belle	WV	Conroe	TX	NS-ESTL-BNSF	Tank Car > 22,000 Gallons	78 7	78 7	0 0
11	Belle	WV	Corsicana	TX	NS-ESTL-UP	Tank Car > 22,000 Gallons	77 7	77 7	0 0
12	Removed								
13	Belle	WV	East Billings	MT	NS-CHGO-BNSF	Tank Car > 22,000 Gallons	77 0	77 0	0 0
14	Belle	WV	Ethyl	AR	NS-ESTL-UP-MCNEI-LNW	Tank Car > 22,000 Gallons	79 3	79 3	0 0
15	Belle	WV	Finley	WA	NS-CHGO-BNSF	Tank Car > 22,000 Gallons	79 5	79 5	0 0
16	Removed								
17	Belle	WV	Freeport	TX	NS-ESTL-UP	Tank Car > 22,000 Gallons	64 4	64 4	0 0
18	Belle	WV	Garyville	LA	NS-NEWOR-CN	Tank Car > 22,000 Gallons	78 8	78 8	0 0
19	Belle	WV	Geismar	LA	NS-NEWOR-CN	Tank Car > 22,000 Gallons	83 2	74 6	8 5
20	Belle	WV	Janesville	WI	NS-CHGO-UP	Tank Car < 22,000 Gallons	86 5	86 5	0 0
21	Belle	WV	Laredo	TX	NS-ESTL-UP	Tank Car > 22,000 Gallons	83 2	95 3	-12 2
22	Belle	WV	Laredo	TX	NS-ESTL-UP	Tank Car > 22,000 Gallons	83 2	89 9	-6 7
23	Belle	WV	Lorenzo	IL	NS-CHGO-BNSF	Tank Car > 22,000 Gallons	78 9	78 9	0 0
24	Belle	WV	Los Angeles	CA	NS-STRTR-BNSF	Tank Car > 22,000 Gallons	79 9	79 9	0 0
25	Belle	WV	Los Angeles	CA	NS-CHGO-UP	Tank Car > 22,000 Gallons	76 0	76 0	0 0
26	Removed								
27	Belle	WV	Millsdale	IL	NS-CHGO-CN	Tank Car < 22,000 Gallons	86 8	86.8	0.0
28	Removed								
29	Belle	WV	Saint Paul	MN	NS-CHGO-BNSF	Tank Car > 22,000 Gallons	97.0	97 0	0 0
30	Belle	WV	San Dimas	CA	NS-CHGO-UP	Tank Car > 22,000 Gallons	79.7	79 7	0 0
31.	Removed								
32	Belle	WV	St Gabriel	LA	NS-NEWOR-CN	Tank Car > 22,000 Gallons	78 3	78 3	0 0
33	Belle	WV	St Joseph	MO	NS-KCITY-UP	Tank Car > 22,000 Gallons	76 1	76 1	0 0
34	Removed								
35	Belle	WV	Strang	TX	NS-ESTL-UP	Tank Car > 22,000 Gallons	96 2	96 2	0 0
36	Belle	WV	Strang	TX	NS-ESTL-BNSF	Tank Car > 22,000 Gallons	58 3	58 3	0 0
37	Belle	WV	Strang	TX	NS-ESTL-UP	Tank Car < 22,000 Gallons	82 1	82 1	0 0
38	Removed								
39	Belle	WV	Texas City	TX	NS-ESTL-UP	Tank Car > 22,000 Gallons	78 6	78 6	0 0
40	Belle	WV	Verona	MO	NS-ESTL-BNSF	Tank Car > 22,000 Gallons	77.7	77 7	0 0
41	Belle	WV	West Memphis	AR	NS-KCITY-UP	Tank Car > 22,000 Gallons	77 4	77 5	0 0
42	Belle	WV	Winford Spur	LA	NS-MERID-KCS	Tank Car > 22,000 Gallons	78 8	78 8	0 0
43	Belle	WV	Wichita	KS	NS-ESTL-BNSF	Tank Car > 22,000 Gallons	78 7	78 7	0 0
44	Bloomington	TX	Greenville	SC	UP-NEWOR-NS	Covered Hopper	93 9	83 2	10 8

Summary of DuPont's Rebuttal Tons Per Car Calculations

	Origin City (1)	ST	Destination City (2)	ST	Route (3)	Car Type (4)	Tons Per Car: DuPont Rebuttal (5)	Tons Per Car: NS Reply (6)	Difference (7)
45	Bloomington	TX	Washington, Warren	NJ	UP-ESTL-NS	Covered Hopper	87.3	87.3	0.0
46.	Removed								
47	Charleston, Bradley	TN	Woodstock	TN	NS-MEMPH-CN	Tank Car < 22,000 Gallons	98.0	98.0	0.0
48	Cresap	WV	Edgemoor	DE	CSXT-HAGTN-NS	Covered Hopper	94.0	94.0	0.0
49	Dowling	TX	Fort Mill	SC	KCS-MERID-NS	Tank Car > 22,000 Gallons	73.3	73.3	0.0
50	Edgemoor	DE	Garland	TX	NS-MERID-KCS	Tank Car < 22,000 Gallons	100.2	100.2	0.0
51	Edgemoor	DE	Gross	MI	NS-CHGO-CN	Tank Car < 22,000 Gallons	100.4	100.4	0.0
52	Edgemoor	DE	Laredo	TX	NS-ESTL-UP	Tank Car < 22,000 Gallons	93.4	100.0	-6.6
53	Edgemoor	DE	Madawaska	ME	NS-ROUPT-CN	Tank Car < 22,000 Gallons	100.8	100.8	0.0
54	Edgemoor	DE	Pasadena	TX	NS-ESTL-UP	Tank Car < 22,000 Gallons	88.8	88.8	0.0
55	Edgemoor	DE	Port Huron	MI	NS-BUFF-CN	Tank Car < 22,000 Gallons	100.9	100.9	0.0
56.	Edgemoor	DE	Portland	ME	NS-MCV-PAS-AYERM-ST	Tank Car < 22,000 Gallons	99.9	99.9	0.0
57	Edgemoor	DE	Portland	OR	NS-CHGO-BNSF	Tank Car < 22,000 Gallons	100.9	100.9	0.0
58	Edgemoor	DE	Quinnesec	MI	NS-CHGO-CN	Tank Car < 22,000 Gallons	100.3	100.3	0.0
59	Edgemoor	DE	Rileys	ME	NS-MCV-PAS-AYERM-ST	Tank Car < 22,000 Gallons	100.6	100.6	0.0
60.	Edgemoor	DE	Rumford	ME	NS-MCV-PAS-AYERM-ST	Tank Car < 22,000 Gallons	100.7	100.7	0.0
61	Removed								
62	Edgemoor	DE	Shawmutt	ME	NS-MCV-PAS-AYERM-ST	Tank Car < 22,000 Gallons	100.6	100.6	0.0
63	Edgemoor	DE	Snoboy	CA	NS-CHGO-UP	Tank Car < 22,000 Gallons	100.6	100.6	0.0
64	Edgemoor	DE	Snoboy	CA	NS-STRTR-BNSF	Tank Car < 22,000 Gallons	101.0	101.0	0.0
65	Edgemoor	DE	St Paul	MN	NS-CHGO-UP	Tank Car < 22,000 Gallons	100.3	100.3	0.0
66	Removed								
67.	Edgemoor	DE	West Monroe	LA	NS-MERID KCS	Tank Car < 22,000 Gallons	100.4	100.4	0.0
68	Edgemoor	DE	Wheeling	IL	NS-CHGO-CN	Tank Car < 22,000 Gallons	100.1	100.1	0.0
69	Enid	OK	Edgemoor	DE	BNSF-ESTL-NS	Covered Hopper	97.7	97.7	0.0
70	Removed								
71.	Gregory	TX	Dragon	MS	UP-NEWOR-NS	Tank Car > 22,000 Gallons	87.2	87.2	0.0
72	Removed								
73	Gregory	TX	Royce	NJ	UP-ESTL-NS	Tank Car > 22,000 Gallons	85.8	85.8	0.0
74.	Removed								
75	Lemont	IL	Edgemoor	DE	BNSF-CHGO-NS	Covered Hopper	96.6	96.6	0.0
76	Lemoyne	AL	Artesia	MS	NS-MERID-KCS	Tank Car < 22,000 Gallons	76.8	76.8	0.0
77.	McIntosh	AL	Burnside	LA	NS-MOBIL-CN	Tank Car < 22,000 Gallons	83.3	83.3	0.0
78	McIntosh	AL	Delisle	MS	NS-MOBIL-CN-HATBG-KCS	Tank Car < 22,000 Gallons	89.6	89.6	0.0
79	McIntosh	AL	Delisle	MS	NS-MOBIL-CN-HATBG-KCS	Tank Car < 22,000 Gallons	98.9	98.9	0.0
80	McIntosh	AL	Orange	TX	NS-NEWOR-UP	Tank Car < 22,000 Gallons	97.9	97.9	0.0
81.	McIntosh	AL	Woodstock	TN	NS-MOBIL-CN	Tank Car < 22,000 Gallons	98.5	98.5	0.0
82	Orange	TX	Greenville	SC	UP NEWOR-NS	Covered Hopper	67.2	67.2	0.0
83	Orange	TX	Washington, Warren	NJ	UP-ESTL-NS	Covered Hopper	65.1	65.1	0.0
84	Pascagoula	MS	Fort Mill	SC	MSE-MOBIL-NS	Tank Car > 22,000 Gallons	89.1	89.1	0.0
85	Pascagoula	MS	Lemoyne	AL	MSE-MOBIL-NS	Tank Car > 22,000 Gallons	95.0	95.0	0.0
86	Strang	TX	Lemoyne	AL	UP-NEWOR-NS	Tank Car > 22,000 Gallons	89.1	89.1	0.0
87	Beauharnois	PQ	Edgemoor	DE	CSXT-BUFF-NS	Tank Car < 22,000 Gallons	89.2	89.2	0.0
88	Removed								
89	Belle	WV	Gainesville	GA	NS-CINTI-CSXT	Tank Car > 22,000 Gallons	78.9	78.9	0.0
90	Belle	WV	Port Bienville	MS	NS-ATLA-CSXT-ANSLD-PBVR	Tank Car > 22,000 Gallons	77.7	77.7	0.0
91	Belle	WV	Theodore	AL	NS-CINTI-CSXT	Tank Car > 22,000 Gallons	78.3	78.3	0.0
92	Bellwood	VA	Dallas	GA	CSXT-PTRSB-NS	Tank Car < 22,000 Gallons	99.6	99.6	0.0
93	Bellwood	VA	Fort Mill	SC	CSXT-CHLTE-NS	Tank Car < 22,000 Gallons	99.8	99.9	0.0
94	Bellwood	VA	Rockwell	NC	CSXT-PTRSB-NS	Tank Car < 22,000 Gallons	97.5	97.5	0.0
95	Removed								
96	Danville	VA	Amphill	VA	NS-PTRSB-CSXT	Covered Hopper	83.9	83.9	0.0
97	Edgemoor	DE	New Johnsonville	TN	NS-CINTI-CSXT	Tank Car < 22,000 Gallons	99.8	99.8	0.0
98	Enid	OK	Edgemoor	DE	BNSF-ESTL-NS	Covered Hopper	93.4	93.4	0.0
99	Loudon	TN	Grainger	NC	NS-CHATT-CSXT	Tank Car < 22,000 Gallons	86.0	86.0	0.0
100.	Loudon	TN	Grainger	NC	NS-CHATT-CSXT	Tank Car > 22,000 Gallons	95.0	95.0	0.0
101.	Miami Fort	OH	Dallas	GA	CSXT-CINTI-NS	Tank Car < 22,000 Gallons	99.2	99.2	0.0
102	Miami Fort	OH	Gracewood	GA	CSXT-CHATT-NS	Tank Car < 22,000 Gallons	92.1	92.1	0.0
103	Miami Fort	OH	McIntosh	AL	CSXT-CHATT-NS	Tank Car < 22,000 Gallons	74.2	74.2	0.0
104	Removed								
105	Removed								
106	Miami Fort	OH	Pepper	VA	CSXT-CINTI-NS	Tank Car < 22,000 Gallons	90.5	90.5	0.0
107	Natrium	WV	Belle	WV	CSXT-CINTI-NS	Tank Car < 22,000 Gallons	99.2	99.2	0.0
108	Natrium	WV	Danville	VA	CSXT-LYNCH-NS	Tank Car < 22,000 Gallons	98.2	98.2	0.0
109	New Johnsonville	TN	Chapman	PA	CSXT-CINTI-NS	Tank Car < 22,000 Gallons	98.5	98.5	0.0
110	Removed								
111	New Johnsonville	TN	Morrow	GA	CSXT-CHATT NS	Tank Car < 22,000 Gallons	96.8	96.8	0.0
112	Niagara Falls	NY	Belle	WV	CSXT-CLMBO-NS	Tank Car < 22,000 Gallons	98.1	98.1	0.0
113.	Niagara Falls	NY	Edgemoor	DE	CSXT-BUFT-NS	Tank Car < 22,000 Gallons	89.7	89.7	0.0
114	Niagara Falls	NY	Edgemoor	DE	CSXT-BUFF-NS	Tank Car < 22,000 Gallons	100.7	100.7	0.0
115	Pascagoula	MS	Fort Mill	SC	CSXT-ATLA-NS	Tank Car > 22,000 Gallons	88.4	88.4	0.0
116	Starke	FL	Huntsville	AL	CSXT-DCTUR-NS	Covered Hopper	98.2	98.2	0.0

Summary of DuPont's Rebuttal Tons Per Car Calculations

	Origin		Destination				Tons Per Car		
	City (1)	ST	City (2)	ST	Route (3)	Car Type (4)	DuPont Rebuttal (5)	NS Reply (6)	Difference (7)
117.	Starke	FL	Huntsville	AL	CSXT-DCTUR-NS	Covered Hopper	98 8	98 8	0 0
118	Wurtland	KY	Fort Mill	SC	CSXT-CHLTE-NS	Tank Car < 22,000 Gallons	101 3	101 3	0 0
119	Wurtland	KY	McIntosh	AL	CSXT-BHAM-NS	Tank Car < 22,000 Gallons	100 3	100.3	0 0
120	Belle	WV	Divine	IL	NS-PINE-CN	Tank Car > 22,000 Gallons	75 2	75 2	0 0
121	Belle	WV	Mapleton	IL	NS-LOGPT-TPW	Tank Car > 22,000 Gallons	50 4	50 4	0 0
122	Burnside	LA	Gracewood	GA	CN-NEWOR-NS	Tank Car < 22,000 Gallons	86 4	86 4	0 0
123	Lemont	IL	Edgemoor	DE	BNSF-CHGO-NS	Covered Hopper	96 7	96 7	0.0
124	New Johnsonville	TN	McDonough	GA	CSXT-CHATT-NS	Tank Car < 22,000 Gallons	98 8	98 8	0 0
125	Charleston	TN	Woodstock	TN	NS-MEMPH-CN	Tank Car < 22,000 Gallons	95 0	95 0	0 0
126	Reybold	DE	Albuquerque	NM	NS-STRTR-BNSF	Tank Car < 22,000 Gallons	93 4	96 2	-2 8
127.	Reybold	DE	Baltimore	MD	NS-BALBV-CSXT	Tank Car < 22,000 Gallons	93 4	96 2	-2.8
128	Reybold	DE	Blair	NE	NS-CHGO-UP	Tank Car < 22,000 Gallons	93 4	96 2	-2.8
129	Reybold	DE	Brewton	AL	NS-BHAM CSXT	Tank Car < 22,000 Gallons	93 4	96 2	-2.8
130	Reybold	DE	Castle Hayne	NC	NS-CHLTL-CSXT	Tank Car < 22,000 Gallons	93 4	96.2	-2 8
131	Reybold	DE	Clifton	AZ	NS-KCITY-UP	Tank Car < 22,000 Gallons	93 4	96 2	-2 8
132	Reybold	DE	Corson	SD	NS-CHGO-BNSF	Tank Car < 22,000 Gallons	93.4	96 2	-2 8
133	Removed								
134	Reybold	DE	Ferguson	MS	NS-MEMPHIS-CN	Tank Car < 22,000 Gallons	93 4	96 2	-2 8
135	Reybold	DE	Hastings	NE	NS-CHGO BNSF	Tank Car < 22,000 Gallons	93 4	96 2	-2 8
136	Reybold	DE	Indianapolis	IN	NS-CINTI-CSXT	Tank Car < 22,000 Gallons	93 4	96 2	-2 8
137	Reybold	DE	Omaha	NE	NS-CHGO-UP	Tank Car < 22,000 Gallons	93 4	96 2	-2 8
138	Reybold	DE	Orange	TX	NS-ESTL-BNSF	Tank Car < 22,000 Gallons	93 4	96 2	-2 8
139	Reybold	DE	Phoenix	AZ	NS-STRTR-BNSF	Tank Car < 22,000 Gallons	93.4	96 2	-2 8
140	Reybold	DE	Sioux City	IA	NS-CHGO-BNSF	Tank Car < 22,000 Gallons	93 4	96 2	-2 8
141	Reybold	DE	Toledo	OH	NS-TOLED-CSXT	Tank Car < 22,000 Gallons	93 4	96 2	-2 8
142	Reybold	DE	Washington	WV	NS-HAGTN-CSXT	Tank Car < 22,000 Gallons	93 4	96 2	-2 8

TAB 15

Summary of Traffic and Operating Characteristics for DuPont Movements

	Origin City (1)	ST	Destination City (2)	ST	Route (3)	Miles (4)	Shipment Type(s) (5)	Cars Per Train (6)	Car Type (7)	Car Owner (8)	Tons Per Car (9)	Commodity (Full STCC) (10)	Movement Type (11)
Exhibit A - Local Moves													
1	Removed												
2	Bayway	NJ	Waynesville	NC	NS	0	ORIG & TERM	1.0	Tank Car < 22,000 Gallons	Private	98 3	2819315	Single Car
3	Belle	WV	Danville	IL	NS	0	ORIG & TERM	1 0	Tank Car > 22,000 Gallons	Private	78 6	2813980	Single Car
4	Removed												
5	Removed												
6	Removed												
7	Removed												
8	Removed												
9	Belle	WV	Wyandotte	MI	NS	0	ORIG & TERM	1 0	Tank Car < 22,000 Gallons	Private	77 9	2813934	Single Car
10	Charleston	TN	Edgemoor	DE	NS	0	ORIG & TERM	1 0	Tank Car < 22,000 Gallons	Private	89 9	2812815	Single Car
11	Edgemoor	DE	Chicago	IL	NS	0	ORIG & TERM	1 0	Tank Car < 22,000 Gallons	Private	99 9	2816130	Single Car
12	Edgemoor	DE	Chillicothe	OH	NS	0	ORIG & TERM	1 0	Tank Car < 22,000 Gallons	Private	99 8	2816130	Single Car
13	Edgemoor	DE	Mahn	AL	NS	0	ORIG & TERM	1 0	Tank Car < 22,000 Gallons	Private	100 5	2816130	Single Car
14	Edgemoor	DE	Riverwood Intl	GA	NS	0	ORIG & TERM	1 0	Tank Car < 22,000 Gallons	Private	100 5	2816130	Single Car
15	Edgemoor	DE	Wabash	IN	NS	0	ORIG & TERM	1 0	Tank Car < 22,000 Gallons	Private	100 7	2816130	Single Car
16	Lemoyne	AL	Gantt	SC	NS	0	ORIG & TERM	1 0	Tank Car > 22,000 Gallons	Private	74 8	4810560	Single Car
17	Loudon	TN	Braithwaite	LA	NS	0	ORIG & TERM	1 0	Tank Car > 22,000 Gallons	Private	93 7	2818512	Single Car
18	Louisville	KY	Decatur	IL	NS	0	ORIG & TERM	1 0	Tank Car < 22,000 Gallons	Private	98 6	2819450	Single Car
19	Louisville	KY	Lafayette	IN	NS	0	ORIG & TERM	1 0	Tank Car < 22,000 Gallons	Private	98 1	2819450	Single Car
20	Removed												
21	Removed												
22	McIntosh	AL	Lemoyne	AL	NS	0	ORIG & TERM	1 0	Tank Car < 22,000 Gallons	Private	98 3	2812220	Single Car
23	Reybold	DE	Detroit	MI	NS	0	ORIG & TERM	1 0	Tank Car < 22,000 Gallons	Private	93 4	2819315	Single Car
24	Reybold	DE	Fort Mill	SC	NS	0	ORIG & TERM	1 0	Tank Car < 22,000 Gallons	Private	93 4	2819315	Single Car
25	Reybold	DE	Morrisville	PA	NS	0	ORIG & TERM	1 0	Tank Car < 22,000 Gallons	Private	93 4	2819315	Single Car
Exhibit B - Joint Moves													
1	Belle	WV	Anaheim	CA	NS-CHOO-UP	0	ORIG & DELIVER	1 0	Tank Car > 22,000 Gallons	Private	78 0	2813980	Single Car
2	Belle	WV	Bayport	TX	NS ESTL-UP	0	ORIG & DELIVER	1 0	Tank Car > 22,000 Gallons	Private	90 2	2818620	Single Car
3	Removed												
4	Belle	WV	Brownsville	TX	NS ESTL-UP	0	ORIG & DELIVER	1 0	Tank Car > 22,000 Gallons	Private	83 2	2818221	Single Car
5	Belle	WV	Burley	ID	NS-CHOO UP	0	ORIG & DELIVER	1 0	Tank Car > 22,000 Gallons	Private	78 0	2813934	Single Car
6	Belle	WV	Cadet	MO	NS-KCITY-UP	0	ORIG & DELIVER	1 0	Tank Car > 22,000 Gallons	Private	78 1	2813934	Single Car
7	Removed												
8	Belle	WV	Channelview	TX	NS-ESTL-UP	0	ORIG & DELIVER	1 0	Tank Car > 22,000 Gallons	Private	73 1	2816130	Single Car
9	Belle	WV	City of Commerce	CA	NS-STRTR-BNSF	0	ORIG & DELIVER	1 0	Tank Car > 22,000 Gallons	Private	83 2	2818221	Single Car
10	Belle	WV	Conroe	TX	NS ESTL BNSF	0	ORIG & DELIVER	1 0	Tank Car > 22,000 Gallons	Private	78 7	2813934	Single Car
11	Belle	WV	Corsicana	TX	NS ESTL-UP	0	ORIG & DELIVER	1 0	Tank Car > 22,000 Gallons	Private	77 7	2813934	Single Car
12	Removed												
13	Belle	WV	East Billings	MT	NS-CHGO-BNSF	0	ORIG & DELIVER	1 0	Tank Car > 22,000 Gallons	Private	77 0	2818130	Single Car
14	Belle	WV	Ethyl	AR	NS ESTL-UP-MCNEI LNW	0	ORIG & DELIVER	1 0	Tank Car > 22,000 Gallons	Private	79 3	2813934	Single Car
15	Belle	WV	Fraley	WA	NS-CHGO-BNSF	0	ORIG & DELIVER	1 0	Tank Car > 22,000 Gallons	Private	79 5	2813934	Single Car
16	Removed												
17	Belle	WV	Freeport	TX	NS-ESTL-UP	0	ORIG & DELIVER	1 0	Tank Car > 22,000 Gallons	Private	64 4	2818130	Single Car
18	Belle	WV	Garyville	LA	NS-NEWOR-CN	0	ORIG & DELIVER	1 0	Tank Car > 22,000 Gallons	Private	78 8	2813934	Single Car
19	Belle	WV	Gramar	LA	NS NEWOR-CN	0	ORIG & DELIVER	1 0	Tank Car > 22,000 Gallons	Private	83 2	2813934	Single Car
20	Belle	WV	Janesville	WI	NS-CHGO-UP	0	ORIG & DELIVER	1 0	Tank Car < 22,000 Gallons	Private	86.5	2818131	Single Car
21	Belle	WV	Laredo	TX	NS-ESTL-UP	0	ORIG & DELIVER	1.0	Tank Car > 22,000 Gallons	Private	83 2	2818221	Single Car
22	Belle	WV	Laredo	TX	NS-ESTL-UP	0	ORIG & DELIVER	1 0	Tank Car > 22,000 Gallons	Private	83 2	2818131	Single Car
23	Belle	WV	Lemont	IL	NS-CHGO BNSF	0	ORIG & DELIVER	1 0	Tank Car > 22 000 Gallons	Private	78 9	2813980	Single Car
24	Belle	WV	Los Angeles	CA	NS-STRTR-BNSF	0	ORIG & DELIVER	1 0	Tank Car > 22,000 Gallons	Private	79 9	2813934	Single Car
25	Belle	WV	Los Angeles	CA	NS-CHGO-UP	0	ORIG & DELIVER	1.0	Tank Car > 22,000 Gallons	Private	76 0	2818130	Single Car
26	Removed												
27	Belle	WV	Milldale	IL	NS-CHGO-CN	0	ORIG & DELIVER	1 0	Tank Car < 22,000 Gallons	Private	86 8	2818131	Single Car
28	Removed												
29	Belle	WV	Saint Paul	MN	NS-CHGO BNSF	0	ORIG & DELIVER	1 0	Tank Car > 22,000 Gallons	Private	97 0	2818221	Single Car
30	Belle	WV	San Dimas	CA	NS-CHGO-UP	0	ORIG & DELIVER	1 0	Tank Car > 22,000 Gallons	Private	79 7	2813980	Single Car
31	Removed												
32	Belle	WV	St Gabriel	LA	NS NEWOR-CN	0	ORIG & DELIVER	1 0	Tank Car > 22,000 Gallons	Private	78 3	2813934	Single Car
33	Belle	WV	S Joseph	MO	NS KCITY UP	0	ORIG & DELIVER	1 0	Tank Car > 22,000 Gallons	Private	76 1	2818130	Single Car
34	Removed												
35	Belle	WV	Strang	TX	NS ESTL-UP	0	ORIG & DELIVER	1 0	Tank Car > 22 000 Gallons	Private	96 2	2818221	Single Car
36	Belle	WV	Strang	TX	NS-ESTL BNSF	0	ORIG & DELIVER	1 0	Tank Car > 22,000 Gallons	Private	58 3	2813934	Single Car
37	Belle	WV	Strang	TX	NS ESTL-UP	0	ORIG & DELIVER	1 0	Tank Car < 22,000 Gallons	Private	82 1	2819183	Single Car
38	Removed												
39	Belle	WV	Texas City	TX	NS ESTL-UP	0	ORIG & DELIVER	1 0	Tank Car > 22,000 Gallons	Private	78 6	2813934	Single Car
40	Belle	WV	Verona	MO	NS ESTL-BNSF	0	ORIG & DELIVER	1 0	Tank Car > 22,000 Gallons	Private	77 7	2813934	Single Car
41	Belle	WV	West Memphis	AR	NS KCITY-UP	0	ORIG & DELIVER	1 0	Tank Car > 22,000 Gallons	Private	77.4	2813934	Single Car
42	Belle	WV	Winfield Spur	LA	NS MERID-KCS	0	ORIG & DELIVER	1 0	Tank Car > 22,000 Gallons	Private	78 8	2813980	Single Car
43	Belle	WV	Wichita	KS	NS-ESTL-BNSF	0	ORIG & DELIVER	1 0	Tank Car > 22 000 Gallons	Private	78 7	2813934	Single Car
44	Bloomington	TX	Greenville	SC	UP NEWOR NS	0	RECEIVE & TERM	1 0	Covered Hopper	Private	93 9	2821142	Single Car
45	Bloomington	TX	Washington, Warren	NJ	UP ESTL-NS	0	RECEIVE & TERM	1 0	Covered Hopper	Private	87.3	2821142	Single Car
46	Removed												
47	Charleston, Bradley	TN	Woodstock	TN	NS MEMPH-CN	0	ORIG & DELIVER	1 0	Tank Car < 22,000 Gallons	Private	98 0	2812220	Single Car
48	Crespo	WV	Edgemoor	DE	CSXT-HAGTN NS	0	RECEIVE & TERM	1 0	Covered Hopper	Private	94 0	2911315	Single Car
49	Dowling	TX	Fort Mill	SC	KCS MERID-NS	0	RECEIVE & TERM	1 0	Tank Car > 22,000 Gallons	Private	73 3	2815112	Single Car
50	Edgemoor	DE	Garland	TX	NS-MERID KCS	0	ORIG & DELIVER	1 0	Tank Car < 22,000 Gallons	Private	100 2	2816130	Single Car
51	Edgemoor	DE	Grace	MI	NS-CHOO-CN	0	ORIG & DELIVER	1 0	Tank Car < 22,000 Gallons	Private	100.4	2816130	Single Car
52	Edgemoor	DE	Laredo	TX	NS ESTL-UP	0	ORIG & DELIVER	1 0	Tank Car < 22,000 Gallons	Private	97 4	2816130	Single Car
53	Edgemoor	DE	Madawaska	ME	NS-ROUPT-CN	0	ORIG & DELIVER	1 0	Tank Car < 22,000 Gallons	Private	100 8	2816130	Single Car
54	Edgemoor	DE	Pasadena	TX	NS-ESTL-UP	0	ORIG & DELIVER	1 0	Tank Car < 22,000 Gallons	Private	88 8	2819971	Single Car
55	Edgemoor	DE	Port Huron	MI	NS BUFF-CN	0	ORIG & DELIVER	1 0	Tank Car < 22,000 Gallons	Private	100 9	2816130	Single Car
56	Edgemoor	DE	Portland	ME	NS-MCV-PAS AYERM-ST	0	ORIG & DELIVER	1 0	Tank Car < 22,000 Gallons	Private	99 9	2816130	Single Car
57	Edgemoor	DE	Portland	OR	NS-CHGO-BNSF	0	ORIG & DELIVER	1 0	Tank Car < 22,000 Gallons	Private	100 9	2816130	Single Car
58	Edgemoor	DE	Quinsigamond	MI	NS-CHOO-CN	0	ORIG & DELIVER	1 0	Tank Car < 22,000 Gallons	Private	100 3	2816130	Single Car
59	Edgemoor	DE	Searsport	ME	NS-MCV-PAS-AYERM-ST	0	ORIG & DELIVER	1 0	Tank Car < 22,000 Gallons	Private	100 6	2816130	Single Car
60	Edgemoor	DE	Rumford	ME	NS-MCV-PAS-AYERM-ST	0	ORIG & DELIVER	1 0	Tank Car < 22,000 Gallons	Private	100 7	2816130	Single Car
61	Removed												
62	Edgemoor	DE	Skowhegan	ME	NS MCV-PAS-AYERM-ST	0	ORIG & DELIVER	1 0	Tank Car < 22,000 Gallons	Private	100 6	2816130	Single Car
63	Edgemoor	DE	Sneboy	CA	NS-CHOO-UP	0	ORIG & DELIVER	1 0	Tank Car < 22,000 Gallons	Private	100 6	2816130	Single Car
64	Edgemoor	DE	Sneboy	CA	NS-STRTR-BNSF	0	ORIG & DELIVER	1 0	Tank Car < 22,000 Gallons	Private	101 0	2816130	Single Car
65	Edgemoor	DE	St Paul	MN	NS-CHGO-UP	0	ORIG & DELIVER	1 0	Tank Car < 22,000 Gallons	Private	100 3	2816130	Single Car
66	Removed												

Summary of Traffic and Operating Characteristics for DuPont Movements

	Origin City (1)	ST	Destination City (2)	ST	Route (3)	Miles (4)	Shipment Type(s) (5)	Cars Per Train (6)	Car Type (7)	Car Owner (8)	Tons Per Car (9)	Commodity (Rail STCC) (10)	Movement Type (11)
67	Edgemoor	DP	West Monroe	LA	NS MERID-KCS	0	ORIG & DELIVER	1.0	Tank Car < 22,000 Gallons	Private	100.4	2816130	Single Car
68	Edgemoor	DE	Wheeling	IL	NS-CHGO-CN	0	ORIG & DELIVER	1.0	Tank Car < 22,000 Gallons	Private	100.1	2816130	Single Car
69	Enid	OK	Edgemoor	DE	BNSF ESTL-NS	0	RECEIVE & TERM	1.0	Covered Hopper	Private	97.7	2991315	Single Car
70	Removed												
71	Gregory	TX	Dragon	MS	UP NEWOR-NS	0	RECEIVE & TERM	1.0	Tank Car > 22,000 Gallons	Private	87.2	2813984	Single Car
72	Removed												
73	Gregory	TX	Royce	NJ	UP ESTL-NS	0	RECEIVE & TERM	1.0	Tank Car > 22,000 Gallons	Private	85.8	2813984	Single Car
74	Removed												
75	Lemont	IL	Edgemoor	DE	BNSF-CHGO-NS	0	RECEIVE & TERM	1.0	Covered Hopper	Private	96.6	2991315	Single Car
76	Lemoyne	AL	Artesia	MS	NS-MERID KCS	0	ORIG & DELIVER	1.0	Tank Car < 22,000 Gallons	Private	76.8	4810560	Single Car
77	McIntosh	AL	Burnside	LA	NS MOBIL-CN	0	ORIG & DELIVER	1.0	Tank Car < 22,000 Gallons	Private	83.3	2819330	Single Car
78	McIntosh	AL	Delisle	MS	NS MOBIL-CN HATBG-KCS	0	ORIG & DELIVER	1.0	Tank Car < 22,000 Gallons	Private	89.6	2812815	Single Car
79	McIntosh	AL	Delisle	MS	NS-MOBIL-CN HATBG-KCS	0	ORIG & DELIVER	1.0	Tank Car < 22,000 Gallons	Private	98.9	2812220	Single Car
80	McIntosh	AL	Orange	TX	NS-NEWOR-UP	0	ORIG & DELIVER	1.0	Tank Car < 22,000 Gallons	Private	97.9	2812220	Single Car
81	McIntosh	AL	Woodstock	TN	NS-MOBIL-CN	0	ORIG & DELIVER	1.0	Tank Car < 22,000 Gallons	Private	98.5	2812220	Single Car
82	Orange	TX	Greenville	SC	UP-NEWOR-NS	0	RECEIVE & TERM	1.0	Covered Hopper	Private	67.2	2821142	Single Car
83	Orange	TX	Washington, Warren	NJ	UP ESTL-NS	0	RECEIVE & TERM	1.0	Covered Hopper	Private	65.1	2821142	Single Car
84	Pascagoula	MS	Fort Mill	SC	MSE MOBIL-NS	0	RECEIVE & TERM	1.0	Tank Car > 22,000 Gallons	Private	89.1	2815112	Single Car
85	Pascagoula	MS	Lemoyne	AL	MSE MOBIL-NS	0	RECEIVE & TERM	1.0	Tank Car > 22,000 Gallons	Private	95.0	2815112	Single Car
86	Strang	TX	Lemoyne	AL	UP-NEWOR-NS	0	RECEIVE & TERM	1.0	Tank Car > 22,000 Gallons	Private	89.1	2812350	Single Car
87	Beauharnois	PQ	Edgemoor	DE	CSXT-BUFF-NS	0	RECEIVE & TERM	1.0	Tank Car < 22,000 Gallons	Private	89.2	2812813	Single Car
88	Removed												
89	Belle	WV	Gainesville	GA	NS-CINTI-CSXT	0	ORIG & DELIVER	1.0	Tank Car > 22,000 Gallons	Private	78.9	2813980	Single Car
90	Belle	WV	Port Bienville	MS	NS-ATLA-CSXT ANSI E-PBVR	0	ORIG & DELIVER	1.0	Tank Car > 22,000 Gallons	Private	77.7	2813934	Single Car
91	Belle	WV	Theodore	AL	NS-CINTI-CSXT	0	ORIG & DELIVER	1.0	Tank Car > 22,000 Gallons	Private	78.3	2813934	Single Car
92	Bellwood	VA	Dallas	GA	CSXT-PTRSB NS	0	RECEIVE & TERM	1.0	Tank Car < 22,000 Gallons	Private	99.6	2819315	Single Car
93	Bellwood	VA	Fort Mill	SC	CSXT-CHITE-NS	0	RECEIVE & TERM	1.0	Tank Car < 22,000 Gallons	Private	99.8	2819315	Single Car
94	Bellwood	VA	Rockwell	NC	CSXT PTRSB NS	0	RECEIVE & TERM	1.0	Tank Car < 22,000 Gallons	Private	97.5	2819315	Single Car
95	Removed												
96	Danville	VA	Ampthill	VA	NS-PTRSB-CSXT	0	ORIG & DELIVER	1.0	Covered Hopper	Private	83.9	3274110	Single Car
97	Edgemoor	DE	New Johnsonville	TN	NS-CINTI-CSXT	0	ORIG & DELIVER	1.0	Tank Car < 22,000 Gallons	Private	99.8	2816130	Single Car
98	Enid	OK	Edgemoor	DE	BNSF ESTL-NS	0	RECEIVE & TERM	1.0	Covered Hopper	Railroad	93.4	2991315	Single Car
99	Loudon	TN	Grainger	NC	NS-CHATT-CSXT	0	ORIG & DELIVER	1.0	Tank Car < 22,000 Gallons	Private	86.0	2815312	Single Car
100	Loudon	TN	Grainger	NC	NS CHATT-CSXT	0	ORIG & DELIVER	1.0	Tank Car < 22,000 Gallons	Private	95.0	2815312	Single Car
101	Miami Fort	OH	Dallas	GA	CSXT-CINTI-NS	0	RECEIVE & TERM	1.0	Tank Car < 22,000 Gallons	Private	99.2	2819315	Single Car
102	Miami Fort	OH	Gracewood	GA	CSXT-CHATT-NS	0	RECEIVE & TERM	1.0	Tank Car < 22,000 Gallons	Private	92.1	2819325	Single Car
103	Miami Fort	OH	McIntosh	AL	CSXT-CHATT-NS	0	RECEIVE & TERM	1.0	Tank Car < 22,000 Gallons	Private	74.2	2819340	Single Car
104	Removed												
105	Removed												
106	Miami Fort	OH	Pepper	VA	CSXT-CINTI-NS	0	RECEIVE & TERM	1.0	Tank Car < 22,000 Gallons	Private	90.5	2819345	Single Car
107	Nitrium	WV	Belle	WV	CSXT-CINTI-NS	0	RECEIVE & TERM	1.0	Tank Car < 22,000 Gallons	Private	99.2	2812220	Single Car
108	Nitrium	WV	Danville	VA	CSXT LYNCH-NS	0	RECEIVE & TERM	1.0	Tank Car < 22,000 Gallons	Private	98.2	2812220	Single Car
109	New Johnsonville	TN	Chapman	PA	CSXT CINTI-NS	0	RECEIVE & TERM	1.0	Tank Car < 22,000 Gallons	Private	98.5	2816130	Single Car
110	Removed												
111	New Johnsonville	TN	Morrow	GA	CSXT-CHATT-NS	0	RECEIVE & TERM	1.0	Tank Car < 22,000 Gallons	Private	96.8	2816130	Single Car
112	Niagara Falls	NY	Belle	WV	CSXT-CLMBO-NS	0	RECEIVE & TERM	1.0	Tank Car < 22,000 Gallons	Private	98.1	2812220	Single Car
113	Niagara Falls	NY	Edgemoor	DE	CSXT BUFF-NS	0	RECEIVE & TERM	1.0	Tank Car < 22,000 Gallons	Private	89.7	2812815	Single Car
114	Niagara Falls	NY	Edgemoor	DE	CSXT-BUFF-NS	0	RECEIVE & TERM	1.0	Tank Car < 22,000 Gallons	Private	100.7	2812220	Single Car
115	Pascagoula	MS	Fort Mill	SC	CSXT-ATLA-NS	0	RECEIVE & TERM	1.0	Tank Car > 22,000 Gallons	Private	88.4	2815112	Single Car
116	Starke	FL	Huntsville	AL	CSXT DCTUR NS	0	RECEIVE & TERM	1.0	Covered Hopper	Private	98.2	1441325	Single Car
117	Starke	FL	Huntsville	AL	CSXT DCTUR NS	0	RECEIVE & TERM	1.0	Covered Hopper	Railroad	98.8	1441325	Single Car
118	Wurtland	KY	Fort Mill	SC	CSXT-CHLTE-NS	0	RECEIVE & TERM	1.0	Tank Car < 22,000 Gallons	Private	101.3	2819315	Single Car
119	Wurtland	KY	McIntosh	AL	CSXT BHAM-NS	0	RECEIVE & TERM	1.0	Tank Car < 22,000 Gallons	Private	100.3	2819315	Single Car
120	Belle	WV	Devine	IL	NS-PINE-CN	0	ORIG & DELIVER	1.0	Tank Car > 22,000 Gallons	Private	75.2	2813980	Single Car
121	Belle	WV	Mapleton	IL	NS LOGPT-TPW	0	ORIG & DELIVER	1.0	Tank Car > 22,000 Gallons	Private	80.4	2813934	Single Car
122	Burnside	LA	Gracewood	GA	CN-NEWOR-NS	0	RECEIVE & TERM	1.0	Tank Car < 22,000 Gallons	Private	86.4	2819325	Single Car
123	Lemont	IL	Edgemoor	DP	BNSF-CHGO-NS	0	RECEIVE & TERM	1.0	Covered Hopper	Railroad	96.7	2991315	Single Car
124	New Johnsonville	TN	McDonough	GA	CSXT-CHATT-NS	0	RECEIVE & TERM	1.0	Tank Car < 22,000 Gallons	Private	98.8	2816130	Single Car
125	Charleston	TN	Woodstock	TN	NS-MLMPH-CN	0	ORIG & DELIVER	1.0	Tank Car < 22,000 Gallons	Private	95.0	2812410	Single Car
126	Reybold	DE	Albuquerque	NM	NS-STRTR-BNSF	0	ORIG & DELIVER	1.0	Tank Car < 22,000 Gallons	Private	93.4	2819315	Single Car
127	Reybold	DE	Baltimore	MD	NS BALBV-CSXT	0	ORIG & DELIVER	1.0	Tank Car < 22,000 Gallons	Private	93.4	2819315	Single Car
128	Reybold	DE	Blair	NE	NS-CHGO-UP	0	ORIG & DELIVER	1.0	Tank Car < 22,000 Gallons	Private	93.4	2819315	Single Car
129	Reybold	DE	Brewton	AL	NS BHAM-CSXT	0	ORIG & DELIVER	1.0	Tank Car < 22,000 Gallons	Private	93.4	2819315	Single Car
130	Reybold	DE	Cattle Haven	NC	NS-CHLTE-CSXT	0	ORIG & DELIVER	1.0	Tank Car < 22,000 Gallons	Private	93.4	2819315	Single Car
131	Reybold	DE	Clifton	AZ	NS KCITY-UP	0	ORIG & DELIVER	1.0	Tank Car < 22,000 Gallons	Private	93.4	2819315	Single Car
132	Reybold	DE	Carson	SD	NS-CHGO-BNSF	0	ORIG & DELIVER	1.0	Tank Car < 22,000 Gallons	Private	93.4	2819315	Single Car
133	Removed												
134	Reybold	DE	Ferguson	MS	NS-MEMPHIS-CN	0	ORIG & DELIVER	1.0	Tank Car < 22,000 Gallons	Private	93.4	2819315	Single Car
135	Reybold	DE	Hastings	NE	NS-CHGO BNSF	0	ORIG & DELIVER	1.0	Tank Car < 22,000 Gallons	Private	93.4	2819315	Single Car
136	Reybold	DE	Indianapolis	IN	NS-CINTI-CSXT	0	ORIG & DELIVER	1.0	Tank Car < 22,000 Gallons	Private	93.4	2819315	Single Car
137	Reybold	DE	Omaha	NE	NS-CHGO UP	0	ORIG & DELIVER	1.0	Tank Car < 22,000 Gallons	Private	93.4	2819315	Single Car
138	Reybold	DE	Orange	TX	NS-ESTL-BNSF	0	ORIG & DELIVER	1.0	Tank Car < 22,000 Gallons	Private	93.4	2819315	Single Car
139	Reybold	DE	Phoenix	AZ	NS-STRTR BNSF	0	ORIG & DELIVER	1.0	Tank Car < 22,000 Gallons	Private	93.4	2819315	Single Car
140	Reybold	DE	Sioux City	IA	NS-CHGO-BNSF	0	ORIG & DELIVER	1.0	Tank Car < 22,000 Gallons	Private	93.4	2819315	Single Car
141	Reybold	DE	Toledo	OH	NS-TOLED-CSXT	0	ORIG & DELIVER	1.0	Tank Car < 22,000 Gallons	Private	93.4	2819315	Single Car
142	Reybold	DE	Washington	WV	NS HAGTN-CSXT	0	ORIG & DELIVER	1.0	Tank Car < 22,000 Gallons	Private	93.4	2819315	Single Car

TAB 16

Summary of Tariff Rates for DuPont Movements 3Q09 - 1Q12

	Origin		Destination			3Q09 Average	3Q09 Average	4Q09 Average	1Q10 Average	2Q10 Average	3Q10 Average	4Q10 Average	1Q11 Average	2Q11 Average	3Q11 Average	4Q11 Average	1Q12 Average
	City (1)	ST	City (2)	ST	Commodity (3)	Rate (4)	Rate 1/ (5)	Rate (6)	Rate (7)	Rate 1/ (8)	Rate (9)	Rate (10)	Rate (11)	Rate (12)	Rate (13)	Rate (14)	Rate (15)
Exhibit A - Local Moves																	
1	Removed																
2	Bayway	NJ	Waynesville	NC	SULFURIC ACID	xxx	xxx	xxx	xxx	$12,014	$12,014	$12,014	$12,855	$12,855	$12,855	$12,855	$12,855
3	Belle	WV	Danville	IL	DIMETHYL ETHER	xxx	xxx	xxx	xxx	$4,626	$4,626	$4,626	$11,836	$11,836	$11,836	$11 836	$11,836
4	Removed																
5	Removed																
6	Removed																
7	Removed																
8	Removed																
9	Belle	WV	Wyandotte	MI	METHYLAMINE AN	xxx	xxx	xxx	xxx	$6,264	$6,264	$6,264	$8,814	$8,814	$8,814	$8,814	$8,814
10	Charleston	TN	Edgemoor	DE	CHLORINE	xxx	xxx	xxx	xxx	$13,638	$13,638	$13,638	$18,562	$18,562	$18,562	$18,562	$18,562
11	Edgemoor	DE	Chicago	IL	TITANIUM DIOXIDE	xxx	xxx	xxx	xxx	$9,200	$9,200	$9,200	$9,844	$9,844	$9,844	$9,844	$9,844
12	Edgemoor	DE	Chillicothe	OH	TITANIUM DIOXIDE	xxx	xxx	xxx	xxx	$6,084	$6,084	$6,084	$6,510	$6,510	$6,510	$6,510	$6,510
13	Edgemoor	DE	Mobil	AL	TITANIUM DIOXIDE	xxx	xxx	xxx	xxx	$11,566	$11,566	$11,566	$12,376	$12,376	$12,376	$12,376	$12,376
14	Edgemoor	DE	Riverwood Intl	GA	TITANIUM DIOXIDE	xxx	xxx	xxx	xxx	$5,860	$5,860	$5 860	$6,270	$6,270	$6,270	$6,270	$6,270
15	Edgemoor	DE	Wabash	IN	TITANIUM DIOXIDE	xxx	xxx	xxx	xxx	$6,193	$6,193	$6,193	$6,627	$6,627	$6,627	$6,627	$6,627
16	Lexoyne	AL	Cleat	SC	WASTE FLAMMABLE L	xxx	xxx	xxx	xxx	$4,800	$4,800	$4,800	$5,136	$5,136	$5,136	$5,136	$5,136
17	Louden	TN	Braithwaite	LA	PROPANEDIOL BIO	xxx	xxx	xxx	xxx	$4,125	$4,125	$4,125	$4,125	$4,125	$4,125	$4 125	$4 125
18	Louisville	KY	Decatur	IL	ACID MURIATIC (HY	xxx	xxx	xxx	xxx	$3,302	$3,302	$3,302	$4,596	$4,596	$4,596	$4,596	$4,596
19	Louisville	KY	Lafayette	IN	ACID MURIATIC (HY	xxx	xxx	xxx	xxx	$3,752	$3 752	$3,752	$6,139	$6,139	$6,139	$6,139	$6,139
20	Removed																
21	Removed																
22	McIntosh	AL	Lexoyne	AL	SODIUM CAUSTIC	xxx	xxx	xxx	xxx	$1,500	$1,500	$1,500	$1,605	$1,605	$1,605	$1,605	$1,605
23	Reybold	DE	Detroit	MI	SULFURIC ACID	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	$7,812	$7,812	$7,812	$7,812
24	Reybold	DE	Fort Mill	SC	SULFURIC ACID	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	$6,108	$6,108	$6,108	$6,108
25	Reybold	DE	Morrisville	PA	SULFURIC ACID	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	$3,614	$3,614	$3,614	$3,614
Exhibit B - Joint Moves																	
1	Belle	WV	Anaheim	CA	DIMETHYL ETHER	$7,715	$7,715	$7,715	$7,715	$7,937	$8,975	$8,975	$12,100	$12,100	$12,100	$12,100	$12,100
2	Belle	WV	Bayport	TX	ACID GLYCOLIC	$4,537	$4,851	$5,500	$5,500	$5,500	$5,950	$5,950	$11 812	$11,812	$11,812	$11,812	$11,812
3	Removed																
4	Belle	WV	Brownsville	TX	DIMETHYL FORMAMID	$4,537	$4,851	$5,500	$5,500	$5,579	$5,950	$5,950	$11,812	$11 812	$11,812	$11,812	$11,812
5	Belle	WV	Burley	ID	METHYLAMINE AN	$7 715	$7 715	$7,715	$7,715	$7,715	$8,975	$8,975	$12,100	$12,100	$12,100	$12,100	$12,100
6	Belle	WV	Cadet	MO	METHYLAMINE AN	$9,563	$8,086	$7,875	$7,875	$8,495	$11,400	$11,400	$19,539	$19,539	$19,539	$19,539	$19,539
7	Removed																
8	Belle	WV	Channelview	TX	METHYLAMINE, AQU	$4,537	$5,019	$5,500	$5,500	$5,569	$5,950	$5,950	$11,812	$11,812	$11,812	$11 812	$11,812
9	Belle	WV	City of Commerce	CA	DIMETHYL FORMAMID	$8,561	$8,561	$8,561	$8,561	$8 561	$8,561	$8,561	$10,242	$10,242	$10,242	$10,242	$10,242
10	Belle	WV	Conroe	TX	METHYLAMINE AN	$8,093	$8,093	$8,093	$8,093	$8,214	$9,000	$9 000	$14 136	$14 136	$14 136	$14 136	$14,136
11	Belle	WV	Corsicana	TX	METHYLAMINE AN	$8,093	$8,093	$8,093	$8,093	$8,093	$9,000	$9,000	$14 136	$14,136	$14,136	$14 136	$14,136
12	Removed																
13	Belle	WV	East Billings	MT	METHYLAMINE, AQU	$5,112	$5,516	$5,900	$5,900	$5,900	$6,000	$6,000	$8,533	$8,533	$8,533	$8,533	$8,533
14	Belle	WV	Ethyl	AR	METHYLAMINE AN	$8,093	$8,093	$8,093	$8,093	$8,163	$9,000	$9,000	$14,136	$14,136	$14,136	$14 136	$14,136
15	Belle	WV	Finley	WA	METHYLAMINE AN	$7 715	$7,715	$7,715	$7,715	$8 975	$8,975	$8,975	$12,100	$12,100	$12,100	$12,100	$12,100
16	Removed																
17	Belle	WV	Freeport	TX	METHYLAMINE, AQU	$4,537	$4,851	$5,500	$5,500	$5,500	$5,950	$5,950	$11 812	$11 812	$11,812	$11 812	$11,812
18	Belle	WV	Garyville	LA	METHYLAMINE AN	$10,560	$10,560	$10,560	$10,560	$11,892	$14,555	$14,555	$22,732	$22,732	$22,732	$22,732	$22,732
19	Belle	WV	Geismar	LA	METHYLAMINE AN	$10,560	$10,560	$10,560	$10,560	$11,262	$14 555	$14,555	$22,732	$22,732	$22,732	$22,732	$22,732
20	Belle	WV	Janesville	WI	DIMETHYL SULFATE	$7,715	$7,715	$7,715	$7,715	$7,715	$8,975	$8,975	$12,100	$12,100	$12,100	$12,100	$12,100
21	Belle	WV	Laredo	TX	DIMETHYL FORMAMID	$4,537	$4,851	$5,500	$5,500	$5,579	$5,950	$5,950	$11,812	$11,812	$11,812	$11,812	$11,812
22	Belle	WV	Laredo	TX	DIMETHYL SULFATE	$8,093	$8,093	$8 093	$8,093	$8,252	$9,000	$9 000	$14,136	$14,136	$14,136	$14 136	$14,136
23	Belle	WV	Lawrence	IL	DIMETHYL ETHER	$7,715	$7,715	$7,715	$7,715	$7 715	$8,975	$8,975	$12,100	$12,100	$12,100	$12,100	$12,100
24	Belle	WV	Los Angeles	CA	METHYLAMINE AN	$6,649	$6,649	$6,649	$6,649	$7,283	$8,975	$8,975	$12,450	$13,450	$13,450	$13,450	$13,450
25	Belle	WV	Los Angeles	CA	METHYLAMINE, AQU	$5,132	$5,324	$5 900	$5,900	$5,917	$6,000	$6,000	$8,533	$8,533	$8,533	$8,533	$8,533
26	Removed																
27	Belle	WV	Midsdale	IL	DIMETHYL SULFATE	$7 715	$7,715	$7,715	$7,715	$7,967	$8,975	$8,975	$12,100	$12,100	$12,100	$12,100	$12,100
28	Removed																
29	Belle	WV	Saint Paul	MN	DIMETHYL FORMAMID	$5,132	$5,411	$5,900	$5,900	$5,917	$6,000	$6,000	$8,533	$8,533	$8,533	$8,533	$8,533
30	Belle	WV	San Dimas	CA	DIMETHYL ETHER	$7,715	$7,715	$7,715	$7 715	$8,975	$8,975	$8,975	$12,100	$12,100	$12,100	$12,100	$12,100
31	Removed																
32	Belle	WV	St Gabriel	LA	METHYLAMINE AN	$10,560	$10,560	$10,560	$10,560	$11,226	$14,555	$14 555	$22,732	$22 732	$22,732	$22,732	$22,732
33	Belle	WV	St Joseph	MO	METHYLAMINE, AQU	$6,465	$6,465	$6,465	$6,465	$6,465	$6,465	$6,465	$13,535	$13,535	$13,535	$13,535	$13,535
34	Removed																
35	Belle	WV	Sarang	TX	DIMETHYL FORMAMID	$4,537	$4,778	$5,500	$5,500	$5 590	$5,950	$5,950	$11,812	$11,812	$11,812	$11,812	$11,812
36	Belle	WV	Sarang	TX	METHYLAMINE AN	$8,093	$8,093	$8,093	$8,093	$8,093	$9,000	$9,000	$14 136	$14,136	$14,136	$14 136	$14,136
37	Belle	WV	Sarang	TX	MONOMETHYL FORMAM	$4,157	$4,157	$4,157	$4,157	$4 157	$4,157	$4,214	$4,531	$4,606	$5,011	$5,139	$5,139
38	Removed																
39	Belle	WV	Texas City	TX	METHYLAMINE AN	$8,093	$8,093	$8,093	$8,093	$8,093	$9,000	$9,000	$14 136	$14 136	$14,136	$14,136	$14,136
40	Belle	WV	Verona	MO	METHYLAMINE AN	$8,093	$8,093	$8,093	$8,093	$8,660	$9,000	$9,000	$14,136	$14,136	$14,136	$14,136	$14,136
41	Belle	WV	West Memphis	AR	METHYLAMINE AN	$9,563	$7,875	$7,875	$7 875	$7 875	$11,400	$11,400	$19,539	$19,539	$19,539	$19,539	$19,539
42	Belle	WV	Winfield Spur	LA	DIMETHYL ETHER	$8,939	$8,939	$8,939	$8,939	$8,939	$12,588	$12 588	$19,888	$19 888	$19,888	$19,888	$19,888
43	Belle	WV	Wichita	KS	METHYLAMINE AN	$8,093	$8,093	$8,093	$8,093	$9,000	$9,000	$9,000	$14,136	$14 136	$14,136	$14,136	$14,136
44	Bloomington	TX	Greenville	SC	POLYETHYLENE	$5,713	$5,713	$5,713	$5,713	$5,713	$5,713	$5,713	$6,113	$6,113	$6,113	$6,113	$6,113
45	Bloomington	TX	Washington, Warren	NJ	POLYETHYLENE	$9,013	$9,013	$9,013	$9,013	$9,013	$9,013	$9,013	$9,644	$9,644	$9,644	$9,644	$9,644
46	Removed																
47	Charleston Bradley	TN	Woodstock	TN	SODIUM CAUSTIC	$1,911	$1,911	$1,911	$1,911	$3,000	$3,000	$3,000	$4,170	$4 170	$4,170	$4 170	$4,170
48	Cresap	WV	Edgemoor	DE	COKE PETROLEUM CA	$2,341	$2,341	$2,341	$2,341	$2,519	$3,356	$3 356	$3,591	$3,591	$3 591	$3,591	$3,591
49	Dowling	TX	Fort Mill	SC	OIL ANILINE	$4 450	$4,450	$4 450	$4,450	$4,450	$5,425	$5,425	$7,690	$7,690	$7,690	$7,690	$7,690
50	Edgemoor	DE	Garland	TX	TITANIUM DIOXIDE	$6,246	$7,828	$8,200	$8,200	$8,200	$8,774	$8 774	$9,388	$9,388	$9,388	$9,388	$9,388
51	Edgemoor	DE	Green	MI	TITANIUM DIOXIDE	$5,689	$5,814	$6,500	$6,500	$6,976	$9,200	$9,200	$9,844	$9,844	$9,844	$9 844	$9,844
52	Edgemoor	DE	Laredo	TX	TITANIUM DIOXIDE	$6,093	$6,093	$6,093	$6,093	$6,828	$10,272	$10,272	$10,991	$10 991	$10,991	$10 991	$10,991
53	Edgemoor	DE	Madawaska	ME	TITANIUM DIOXIDE	$3,530	$3,677	$4,000	$4,000	$4,088	$4,700	$4 700	$5,029	$5,029	$5,029	$5,029	$5,029
54	Edgemoor	DE	Pasadena	TX	TITANIUM TETRACHL	$10,747	$11,817	$13,600	$13,600	$13,733	$13,865	$13,865	$24 453	$24 453	$24,453	$24 453	$24 453
55	Edgemoor	DE	Port Huron	MI	TITANIUM DIOXIDE	$4,880	$4 880	$4 880	$4,880	$5,171	$6,920	$6,920	$7,404	$7 404	$7,404	$7,404	$7,404
56	Edgemoor	DE	Portland	ME	TITANIUM DIOXIDE	$3,149	$3,392	$4,000	$4,000	$4,140	$4,700	$4,700	$5 029	$5,029	$5,029	$5,029	$5,029
57	Edgemoor	DE	Portland	OR	TITANIUM DIOXIDE	$5,689	$5 779	$6,500	$6,500	$7,100	$9,200	$9,200	$9,844	$9,844	$9 844	$9,844	$9,844
58	Edgemoor	DE	Quinnesec	MI	TITANIUM DIOXIDE	$5,689	$6,095	$6,500	$6,500	$6,500	$9,200	$9,200	$9,844	$9,844	$9,844	$9,844	$9,844
59	Edgemoor	DE	Riley	ME	TITANIUM DIOXIDE	$3,149	$3,362	$4,000	$4,000	$4 140	$4 700	$4,700	$5,029	$5,029	$5,029	$5,029	$5,029
60	Edgemoor	DE	Rumford	ME	TITANIUM DIOXIDE	$3,149	$3,433	$4,000	$4,000	$4,233	$4 700	$4,700	$5,029	$5,029	$5,029	$5,029	$5,029
61	Removed																
62	Edgemoor	DE	Shawmut	ME	TITANIUM DIOXIDE	$3,149	$3,514	$4 000	$4,000	$4,140	$4,700	$4,700	$5,029	$5,029	$5,029	$5,029	$5,029
63	Edgemoor	DE	Shoboy	CA	TITANIUM DIOXIDE	$5,689	$5,824	$6,500	$6,500	$6,500	$9,200	$9,200	$9 844	$9,844	$9,844	$9,844	$9,844
64	Edgemoor	DE	Shoboy	CA	TITANIUM DIOXIDE	$5,101	$5,101	$5,101	$5,101	$5,101	$5,101	$5,101	$6,205	$10,944	$10,944	$10,944	$10,944
65	Edgemoor	DE	St Paul	MN	TITANIUM DIOXIDE	$5,689	$5,993	$6,500	$6,500	$6,950	$9,200	$9,200	$9,844	$9,844	$9,844	$9,844	$9,844
66	Removed																

Summary of Tariff Rates for DuPont Movements 2009 - 1Q12

	Origin City (1)	ST	Destination City (2)	ST	Commodity (3)	2Q09 Average Rate (4)	3Q09 Average Rate 1/ (5)	4Q09 Average Rate (6)	1Q10 Average Rate (7)	2Q10 Average Rate 1/ (8)	3Q10 Average Rate (9)	4Q10 Average Rate (10)	1Q11 Average Rate (11)	2Q11 Average Rate (12)	3Q11 Average Rate (13)	4Q11 Average Rate (14)	1Q12 Average Rate (15)
67	Edgemoor	DE	West Monroe	LA	TITANIUM DIOXIDE	$6,246	$6,863	$8,200	$8,200	$8,286	$8,774	$8,774	$9,388	$9,388	$9,388	$9,388	$9,388
68	Edgemoor	DE	Wheeling	IL	TITANIUM DIOXIDE	$5,689	$6,037	$6,500	$6,500	$6,745	$9,200	$9,200	$9,844	$9 844	$9,844	$9,844	$9,844
69	Enid	OK	Edgemoor	DE	COKE PETROLEUM CA	$5,364	$5,364	$5,364	$5,364	$5,881	$6,075	$6,075	$12,624	$12,624	$12,624	$12,624	$12,624
70.	Removed																
71	Gregory	TX	Dragon	MS	DIFLUOROETHANE	$2,373	$2,373	$2,373	$2,373	$2,387	$2,450	$2,450	$2,486	$2,486	$2,486	$2,486	$2,486
72	Removed																
73	Gregory	TX	Royce	NJ	DIFLUOROETHANE	$10,123	$10,123	$10,123	$10,123	$11,325	$13,730	$13,730	$21,912	$21,912	$21,912	$21,912	$21,912
74	Removed																
75	Lemoyne	IL	Edgemoor	DE	COKE PETROLEUM CA	$4,608	$4,659	$4,905	$4,905	$5,223	$6,389	$6,389	$8,384	$8,384	$8,384	$8,384	$8,384
76	Lemoyne	AL	Artesia	MS	WASTE FLAMMABLE L	$3,550	$3,958	$4 800	$4,800	$5,432	$8,395	$8,395	$8,983	$8,983	$8,983	$8,983	$8,983
77	McIntosh	AL	Burnside	LA	ACID SULFURIC,SPE	$1,092	$1,296	$1,603	$1,603	$1,645	$1,700	$1,700	$2,400	$2,400	$2,400	$2,400	$2,400
78	McIntosh	AL	Delisle	MS	CHLORINE	$2,184	$1 982	$1,700	$1 700	$1,700	$1,700	$1,700	$2,900	$2 900	$2,900	$2,900	$2,900
79	McIntosh	AL	Delisle	MS	SODIUM CAUSTIC	$1,993	$1,993	$1 500	$1,500	$1,535	$1,700	$1,700	$2,400	$2,400	$2,400	$2,400	$2,400
80.	McIntosh	AL	Orange	TX	SODIUM CAUSTIC	$3,658	$4,096	$5,000	$5,000	$5,635	$8,611	$8,611	$9,214	$9,214	$9 214	$9,214	$9,214
81	McIntosh	AL	Woodstock	TN	SODIUM CAUSTIC	$1 993	$1,993	$1 500	$1,500	$1,535	$1,700	$1,700	$2,400	$2,400	$2,400	$2,400	$2,400
82	Orange	TX	Greenville	SC	POLYETHYLENE	$5,713	$5,713	$5,713	$5,713	$5,713	$5,713	$5,713	$6,113	$6,113	$6,113	$6,113	$6,113
83	Orange	TX	Washington, Warren	NJ	POLYETHYLENE	$9 013	$9,013	$9,013	$9,013	$9 013	$9,013	$9,013	$9,644	$9 644	$9,644	$9,644	$9,644
84	Pascagoula	MS	Fort Mill	SC	OIL ANILINE	$4,068	$4,698	$6,000	$6,000	$6,092	$6,295	$6,295	$8,928	$8,928	$8,928	$8,928	$8,928
85.	Pascagoula	MS	Lemoyne	AL	OIL ANILINE	$1,092	$1,092	$1,092	$1,092	$1,353	$2,577	$2,577	$2,758	$2,758	$2,758	$2,758	$2,758
86	Sterlg	TX	Lemoyne	AL	SODIUM METHYLATE	$4 003	$4,328	$5,000	$5,000	$5 038	$5,215	$5,215	$6,899	$6,899	$6,899	$6,899	$6,899
87	Beauharnois	PQ	Edgemoor	DE	CHLORINE	xxx	xxx	xxx	xxx	$7 022	$7,022	$7,022	$12,375	$12,375	$12,375	$12,375	$12,375
88	Removed																
89	Belle	WV	Gainesville	GA	DIMETHYL ETHER	xxx	xxx	xxx	xxx	$7 281	$7,281	$7,281	$10,487	$10,487	$10,487	$10,487	$10,487
90	Belle	WV	Port Riverlie	MS	METHYLAMINE AN	xxx	xxx	xxx	xxx	$9,585	$9,585	$9,585	$12,839	$12,839	$12,839	$12,839	$12,839
91	Belle	WV	Theodore	AL	METHYLAMINE AN	xxx	xxx	xxx	xxx	$7,281	$7 281	$7,281	$10,487	$10,487	$10,487	$10,487	$10,487
92	Bellwood	VA	Dallas	GA	SULFURIC ACID	xxx	xxx	xxx	xxx	$5,051	$5,051	$5,051	$8,926	$8,926	$8,926	$8,926	$8 926
93	Bellwood	VA	Fort Mill	SC	SULFURIC ACID	xxx	xxx	xxx	xxx	$992	$992	$992	$1,061	$1,061	$1,061	$1 061	$1,061
94	Bellwood	VA	Rockwell	NC	SULFURIC ACID	xxx	xxx	xxx	xxx	$2,700	$2,700	$2,700	$3,431	$3,431	$3,431	$3 431	$3,431
95	Removed																
96	Danville	VA	Ampthill	VA	LIME COMMON OR HY	xxx	xxx	xxx	xxx	$1,585	$1,585	$1,585	$1,585	$1,585	$1,691	$1,910	$1,910
97	Edgemoor	DE	New Johnsonville	TN	TITANIUM DIOXIDE	xxx	xxx	xxx	xxx	$8,946	$8 966	$8,966	$9,085	$8,966	$9,394	$9,394	$9,594
98	Enid	OK	Edgemoor	DE	COKE PETROLEUM CA	xxx	xxx	xxx	xxx	$6,986	$6,986	$6,986	$8,409	$6,986	$14,518	$14 518	$14,518
99	Loudon	TN	Grainger	NC	PROPANEDIOL BIO	xxx	xxx	xxx	xxx	$1,490	$1,490	$1,490	$1 490	$1,490	$1,490	$1,490	$1,490
100	Loudon	TN	Grainger	NC	PROPANEDIOL BIO	xxx	xxx	xxx	xxx	$1,684	$1,684	$1,684	$1,684	$1,684	$1,684	$1,684	$1,684
101.	Miami Fort	OH	Dallas	GA	SULFURIC ACID	xxx	xxx	xxx	xxx	$3,532	$3,532	$3,532	$3,825	$3 532	$5,084	$5,084	$5,084
102	Miami Fort	OH	Gracewood	GA	SULFUR TRIOXIDE	xxx	xxx	xxx	xxx	$5,400	$5,400	$5,400	$6,224	$5 400	$9 761	$9,761	$9,761
103	Miami Fort	OH	McIntosh	AL	ACID FUMING SULFU	xxx	xxx	xxx	xxx	$5,638	$5,638	$5,638	$8,210	$5 638	$8,664	$8,664	$8,664
104	Removed																
105	Removed																
106	Miami Fort	OH	Pepper	VA	ACID FUMING SULFU	xxx	xxx	xxx	xxx	$3,000	$3,000	$3,000	$3 411	$3,000	$5 174	$5,174	$5,174
107	Nitrium	WV	Belle	WV	SODIUM CAUSTIC	xxx	xxx	xxx	xxx	$4,800	$4,800	$4,800	$5,505	$4 800	$8,532	$8,532	$8,532
108	Nitrium	WV	Danville	VA	SODIUM CAUSTIC	xxx	xxx	xxx	xxx	$2,520	$2,520	$2,520	$2,553	$2,520	$2,696	$2,696	$2,696
109	New Johnsonville	TN	Chapman	PA	TITANIUM DIOXIDE	xxx	xxx	xxx	xxx	$7,151	$7,151	$7 151	$7,246	$7 151	$7,652	$7,652	$7,652
110	Removed																
111	New Johnsonville	TN	Morrow	GA	TITANIUM DIOXIDE	xxx	xxx	xxx	xxx	$4,500	$4,500	$4,500	$4,560	$4,500	$4,815	$4,815	$4,815
112	Niagara Falls	NY	Belle	WV	SODIUM CAUSTIC	xxx	xxx	xxx	xxx	$3,000	$3,000	$3,000	$3,051	$3,000	$3 269	$3,269	$3 269
113	Niagara Falls	NY	Edgemoor	DE	CHLORINE	xxx	xxx	xxx	xxx	$7,022	$7,022	$7,022	$8,033	$7,022	$12,375	$12,375	$12,375
114	Niagara Falls	NY	Edgemoor	DE	SODIUM CAUSTIC	xxx	xxx	xxx	xxx	$3,800	$3,800	$3,800	$3,922	$3,800	$4,444	$4,444	$4,444
115	Pascagoula	MS	Fort Mill	SC	OIL ANILINE	xxx	xxx	xxx	xxx	$5,000	$5,000	$5,000	$5,066	$5,000	$5,350	$5,350	$5,350
116	Starke	FL	Huntsville	AL	SAND ZIRCON	xxx	xxx	xxx	xxx	$1,025	$1,025	$1,025	$1,025	$1,025	$1,214	$1,910	$1,910
117	Starke	FL	Huntsville	AL	SAND ZIRCON	xxx	xxx	xxx	xxx	$1,128	$1,128	$1,128	$1,128	$1,128	$1,383	$1,910	$1,910
118	Wurtland	KY	Fort Mill	SC	SULFURIC ACID	xxx	xxx	xxx	xxx	$992	$992	$992	$1,005	$992	$1,061	$1 061	$1,061
119	Wurtland	KY	McIntosh	AL	SULFURIC ACID	xxx	xxx	xxx	xxx	$2,000	$2,000	$2,000	$2,120	$2,000	$2,633	$2,633	$2,633
120	Belle	WV	Divine	IL	DIMETHYL ETHER	xxx	$7,502	$7,502	$7,502	$7 502	$7,502	$7,502	$8,265	$7,502	$11,542	$11,542	$11,542
121	Belle	WV	Mapleton	IL	METHYLAMINE AN	xxx	$5,843	$5,843	$5 843	$6,106	$7,332	$7,332	$7,845	$7,845	$7,845	$7 845	$7,845
122	Burnside	LA	Gracewood	GA	SULFUR TRIOXIDE	xxx	$4,200	$4,200	$4,200	$5,044	$9,000	$9,000	$10,777	$9,000	$18,406	$18,406	$18,406
123	Lemont	IL	Edgemoor	DE	COKE PETROLEUM CA	xxx	xxx	$5,641	$5,641	$5 788	$7,347	$7,347	$9 864	$9,864	$9,864	$9,864	$9 864
124	New Johnsonville	TN	McDonough	GA	TITANIUM DIOXIDE	$2,951	$2,951	$2,951	$2,951	$3,467	$4,500	$4,500	$4,500	$4,815	$4 815	$4 815	$4 815
125	Charleston	TN	Woodstock	TN	POTASSIUM HYDROXIDE	xxx	xxx	xxx	xxx	xxx	xxx	xxx	$9,265	$9,265	$9,265	$9,265	$9,265
126	Reybold	DE	Albuquerque	NM	SULFURIC ACID	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	$10,844	$10,844	$10,844	$10,844
127	Reybold	DE	Baltimore	MD	SULFURIC ACID	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	$3,900	$3,900	$3,900	$3,900
128	Reybold	DE	Blair	NE	SULFURIC ACID	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	$10,008	$10,008	$10,008	$10,008
129	Reybold	DE	Brewton	AL	SULFURIC ACID	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	$10,476	$10,476	$10,476	$10,476
130	Reybold	DE	Castle Hayne	NC	SULFURIC ACID	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	$5,344	$5,344	$5,344	$5,344
131.	Reybold	DE	Clifton	AZ	SULFURIC ACID	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	$14,928	$14 928	$14 928	$14 928
132	Reybold	DE	Carson	SD	SULFURIC ACID	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	$10,008	$10,008	$10,008	$10,008
133	Removed																
134	Reybold	DE	Ferguson	MS	SULFURIC ACID	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	$12,882	$12,882	$12,882	$12,882
135	Reybold	DE	Hastings	NE	SULFURIC ACID	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	$10,008	$10,008	$10,008	$10,008
136	Reybold	DE	Indianapolis	IN	SULFURIC ACID	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	$8,880	$8,880	$8,880	$8,880
137	Reybold	DE	Omaha	NE	SULFURIC ACID	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	$10,008	$10,008	$10,008	$10,008
138	Reybold	DE	Orange	TX	SULFURIC ACID	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	$12 192	$12,192	$12,192	$12 192
139	Reybold	DE	Phoenix	AZ	SULFURIC ACID	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	$10,844	$10,844	$10,844	$10,844
140	Reybold	DE	Sioux City	IA	SULFURIC ACID	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	$10,008	$10,008	$10,008	$10,008
141	Reybold	DE	Toledo	OH	SULFURIC ACID	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	$7 200	$7,200	$7,200	$7,200
142	Reybold	DE	Washington	WV	SULFURIC ACID	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	$6,444	$6,444	$6,444	$6,444

1/ 3Q09 and 2Q10 rates are a weighted average as the rates changed mid quarter For movements with NS Waybill records, the weighted average is based on actual car loads shipped for the lane For all other lanes the rates equal the weighted average based on the number of days the rate was applicable for the quarter For calculations see workpaper "DuPont Issue Lead Unit Waybills_2009 & 2010 Data for T&D Final.xlsx" tabs "3Q09 Rates Development" and "2Q10 Rates Development"

TAB 17

Summary of Outlier Miles Excluded

	Lane	NS CarEvent Origin	NS CarEvent Destination	Miles	Carloads	% of Total Lane Traffic	"Outlier" Segment	% Increase In Miles Over Non-Circuitous Route
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
A. Lane B112 Outlier Dropped by NS								
1 a	B112	Columbus, OH	Belle, WV	210	16	43 2%		
1 b.	B112	Columbus, OH	Belle, WV	421	10	27 0%	Watkins Yd, OH - Bellevue, OH - Watkins Yd, OH	194%
1 c.	B112	Columbus, OH	Belle, WV	731	8	21 6%		
1 d	Weighted Average Miles with Outliers			277				
1. e.	Weighted Average Miles without Outliers			217				
B. Lanes That Contain a Segment Similar to the Segment Excluded of the "Outliers Removed" by NS in Lane B112 1/								
1 a	A9	Belle, WV	Wyandotte, MI	672	10	27 8%	Swanton Scanner, OH - Elkhart, IN - Swanton Scanner, OH	154%
1 b	A9	Belle, WV	Wyandotte, MI	435	8	22 2%		
1. c	A9	Belle, WV	Wyandotte, MI	680	8	22 2%	Swanton Scanner, OH - Elkhart, IN - Swanton Scanner, OH	156%
1 d	Weighted Average Miles with Outliers			602				
1 e.	Weighted Average Miles without Outliers			435				
2 a	A17	Loudon, TN	Braithwaite, LA	663	20	57 1%		
2 b	A17	Loudon, TN	Braithwaite, LA	734	7	20 0%	Knoxville, TN - Loudon, TN - Knoxville, TN	111%
2 c	A17	Loudon, TN	Braithwaite, LA	667	5	14 3%		
2. d	Weighted Average Miles with Outliers			679				
2 e	Weighted Average Miles without Outliers			664				
3 a	B2	Belle, WV	Salem, IN	732	13	35.1%		
3. b	B2	Belle, WV	Salem, IN	747	6	16 2%		
3 c	B2	Belle, WV	Salem, IN	3	5	13 5%	NS Designated "Outlier"	
3. d	B2	Belle, WV	Salem, IN	966	5	13 5%	Watkins Yard, OH - Hobson, OH - Watkins Yard, OH	131%
3 e.	Weighted Average Miles with Outliers			650				
3. f.	Weighted Average Miles without NS Outlier			785				
3 g	Weighted Average Miles without ALL Outliers			737				
4 a	B6	Belle, WV	Kansas City, MO	1,001	6	75.0%		
4 b.	B6	Belle, WV	Kansas City, MO	1,395	2	25.0%	Watkins Yd, OH - Belle, WV - Watkins Yd OH	139%
4. c.	Weighted Average Miles with Outliers			1,100				
4. d	Weighted Average Miles without Outliers			1,001				
5 a	B18	Belle, WV	New Orleans, LA	1,352	8	44 4%	Watkins Yd, OH- Bellevue, OH - Buckeye Yd, OH	117%
5 b	B18	Belle, WV	New Orleans, LA	1,151	6	33 3%		
5. c.	Weighted Average Miles with Outliers			1,266				
5 d	Weighted Average Miles without Outliers			1,151				
6 a	B32	Belle, WV	New Orleans, LA	1,352	9	25 0%	Watkins Yd, OH- Bellevue, OH - Buckeye Yd, OH	117%
6. b	B32	Belle, WV	New Orleans, LA	1,151	22	61.1%		
6 c.	Weighted Average Miles with Outliers			1,209				
6. d.	Weighted Average Miles without Outliers			1,151				
7 a	B42	Belle, WV	Meridian, MS	957	5	45 5%		
7. b.	B42	Belle, WV	Meridian, MS	1,159	5	45 5%	Watkins Yd, OH- Bellevue, OH - Buckeye Yd, OH	121%
7. c.	Weighted Average Miles with Outliers			1,058				
7. d	Weighted Average Miles without Outliers			957				
8 a	B90	Belle, WV	Atlanta, GA	1,196	64	37 2%	Watkins Yd, OH- Bellevue, OH - Buckeye Yd, OH	120%
8 b.	B90	Belle, WV	Atlanta, GA	995	70	40 7%		
8. c.	Weighted Average Miles with Outliers			1,091				
8 d	Weighted Average Miles without Outliers			995				
9 a	B97	Edgemoor, DE	Cincinnati, OH	802	143	36 7%		
9 b	B97	Edgemoor, DE	Cincinnati, OH	777	44	11 3%		
9 c	B97	Edgemoor, DE	Cincinnati, OH	993	49	12 6%	Conway, PA - Elkhart, IN - Sharonville, OH	125%
9 d	B97	Edgemoor, DE	Cincinnati, OH	996	91	23 3%	Conway, PA - Elkhart, IN - Sharonville, OH	125%
9 e.	Weighted Average Miles with Outliers			881				
9 g	Weighted Average Miles without ALL Outliers			796				
10 a	B100	Loudon, TN	Chattanooga, TN	156	297	83 4%	Loudon, TN - Knoxville, TN - Loudon, TN	186%
10 b	B100	Loudon, TN	Chattanooga, TN	84	40	11 2%		
10. c.	Weighted Average Miles with Outliers			147				
10 d	Weighted Average Miles without Outliers			84				

Summary of Outlier Miles Excluded

	Lane (1)	NS CarEvent Origin (2)	NS CarEvent Destination (3)	Miles (4)	Carloads (5)	% of Total Lane Traffic (6)	"Outlier" Segment (7)	% Increase In Miles Over Non-Circuitous Route (8)
11. a	B107	Cincinnati, OH	Belle, WV	588	1	20.0%	Dickinson, WV - Nitro, WV - Dickinson, WV	111%
11. b	B107	Cincinnati, OH	Belle, WV	531	4	80.0%		
11. c.	Weighted Average Miles with Outliers			542				
11. d.	Weighted Average Miles without Outliers			531				
12. a	B115	Atlanta, GA	Ft Mill, SC	600	10	26.3%	Rock Hill, SC - Linwood, SC - Rock Hill, SC	139%
12. b.	B115	Atlanta, GA	Ft Mill, SC	433	24	63.2%		
12. c.	Weighted Average Miles with Outliers			482				
12. d	Weighted Average Miles without Outliers			433				
13. a.	B124	Chattanooga, TN	McDonough, GA	301	13	43.3%		
13. b	B124	Chattanooga, TN	McDonough, GA	353	15	50.0%	McDonough, GA - South Yard, GA - McDonough, GA	117%
13. c.	Weighted Average Miles with Outliers			329				
13. d	Weighted Average Miles without Outliers			301				

1/ In Reply Exhibit II-A-1, NS disregarded its "10%" criteria for Lane B112. As NS did not provide an explanation as to why the miles for Lane B112 were excluded, DuPont concluded that NS believed its data is not accurate and it was necessary to exclude miles that account for over 10% of a lanes' traffic when an obvious out-of-route movement was included in its records. The lanes listed in this Rebuttal Exhibit are mirror images of Lane B112.

PART II-B

TAB 1

COMPARISON OF CHANGES IN NS COSTS AND RCAF – 1997 TO 2009

NS claims that the rates at issue in this proceeding are in line with the market. NS asserts that the large rate increase in 2009, when the contract ended and was replaced with tariff rates, is a function of {{[redacted]}}[1] The NS/DuPont transportation contract included rates that were negotiated in 1997 and terminated in 2009.[2] During the term of the NS/DuPont contract, {{[redacted]}}[3]

This Rebuttal Exhibit II-B-1 responds to NS's claims that the expiring contract adjustment mechanism {[redacted]} did not keep pace with inflation. As demonstrated in the remainder of this Rebuttal Exhibit, NS's cost changes do not support NS's 2009 massive rate increases on DuPont's traffic which are the subject of this proceeding.

For the 1997 through 2009 time period, {{[redacted]}} resulted in rate increases of 46.8 percent.[4]

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1 *See* NS Reply, p II-B-92.
2 *Id*
3 *See* NS Reply, p II-B-93.
4 *See* DuPont Rebuttal e-workpaper "RCAFChanges 1997 to 2009.xlsx."

COMPARISON OF CHANGES IN NS COSTS AND RCAF – 1997 TO 2009

NS claimed that DuPont's rates did not keep up with inflation Column (6) and Column (7) on Attachment No. 1 to this Rebuttal Exhibit II-B-1 identifies the average NS variable costs, by 7-digit commodity, for the DuPont shipments that are the subject of this proceeding. The weighted average variable costs for 1997 and 2009 equal $945.55 per carload and $1,483 67 per carload, respectively The simple average variable costs for 1997 and 2009 equal $917.16 per carload and $1,441.05 per carload, respectively The percent change in variable costs for the 1997 through 2009 time period equals 56 9 percent on a weighted average basis and 57.1 percent on a simple average basis [5] A large portion of this change is attributable to the acquisition premium in variable costs associated with NS's purchase of Conrail's assets. The conclusion to draw from this part of the analysis is that the contract adjustment mechanism accounted for all but seven (7) percent of the change in NS costs over 12 years However, the rate increases imposed in NS's tariff at the end of term of the NS/DuPont contract – averaging approximately 90 percent – vastly exceeded the shortfall due to the failure of the contract adjustment mechanism to keep pace with NS cost changes [6]

Table 1 below summarizes the analysis shown in Attachment No. 1 to this Rebuttal Exhibit II-B-1 The percent change in NS's variable costs and DuPont's contract rates between 1997 and 2009 are shown on Line 1 of Table 1 below. The main differences between the change in expired contract rates and NS's variable costs that were not covered by the contract adjustment mechanism are shown on Line 2 of Table 1 below The average percent changes in the rate increases imposed by NS after the NS/DuPont contract expired are shown on Line 3 of Table 1 below.

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[5] *See* Column (8) of Attachment No 1 to this Rebuttal Exhibit II-B-1
[6] *See* Column (9) of Attachment No 1 to this Rebuttal Exhibit II-B-1

COMPARISON OF CHANGES IN NS COSTS AND RCAF – 1997 TO 2009

Rebuttal Exhibit II-B-1
Table 1
Summary of Changes in
NS Variable Costs and DuPont Rates
1997 to 2009

Item	Source	Cumulative Percent Change for DuPont Commodities: Simple Average	Cumulative Percent Change for DuPont Commodities: Weighted Average
(1)	(2)	(3)	(4)
1. Percent Change from 1997 to 2009			
a NS Variable Costs	1/	57.1%	56.9%
b. DuPont Contract Rates	2/	46.8%	46.8%
2. Portion of Change Not Covered by NS/DuPont Contract Adjustor	3/	7 0%	6.9%
3. NS Post Contract Rate Increases for DuPont Lanes – 2009 to 2011	4/	95%	90%

1/ Attachment No 1 to Rebuttal Exhibit II-B-1, Column (8)
2/ Contract rates were adjusted semi- annually based on {{ [redacted] }}
3/ Attachment No 1 to Rebuttal Exhibit II-B-1, Column (9)
4/ Attachment No. 1 to Rebuttal Exhibit II-B-1, Column (10)

As demonstrated above, NS cannot justify its huge 2009 increases in DuPont rates based on a claim that the rates were included in an expired legacy contract and therefore below market rate levels.

SUMMARY OF CHANGES IN NS VARIABLE COSTS AND CONTRACT ADJUSTMENT MECHANISM -- 1997 TO 2009

	Commodity Name (1)	7-digit commodity (2)	No of Carloads in Complaint1/ 2009 (3)	2010 (4)	Total (5)	NS Variable Costs 2/ 1997 (6)	2009 (7)	Percent Change 3/ (8)	Not covered by Contract Escalator 4/ (9)	Post-Contract Contested Lane NS Rate Increase 5/ (10)
1	Zircon Sand	1441325	27	46	73	$ 238 88	$ 454 23	90 1%	29.5%	8%
2	Sodium Caustic	2812220	1118	482	1600	$ 421 09	$ 659 32	56 6%	6.7%	88%
3	Sodium Methylate	2812350	4	4	8	$ 1,111 28	$ 1,740.96	56 7%	6.7%	38%
4	Potassium Caustic	2812410	75	113	188	$ 661 27	$ 1,021.74	54 5%	5 3%	385%
5	Anhydrous Methylamines	2813934	428	456	884	$ 1,220.81	$ 1,887.75	54 6%	5 3%	75%
6	Dimethyl Ether	2813980	154	136	290	$ 1,029.69	$ 1,598 61	55 3%	5.8%	151%
7	Aniline Oil	2815112	33	46	79	$ 873.43	$ 1,339 27	53 3%	4 5%	41%
8	Titanium Dioxide	2816130	934	1082	2016	$ 1,354.38	$ 2,085 34	54 0%	4 9%	65%
9	Aqueous Methylamines	2818130	68	70	138	$ 1,092.63	$ 1,690.51	54 7%	5 4%	76%
10	Dimethyl Sulfate	2818131	46	42	88	$ 991 59	$ 1,512 24	52 5%	3.9%	57%
11	Dimethyl Formamide	2818221	72	62	134	$ 1,114.63	$ 1,754 42	57 4%	7 2%	58%
12	Sulfuric Acid	2819315	74	28	102	$ 929 29	$ 1,433 95	54 3%	5.1%	79%
13	Sulfur Trioxide	2819325	24	56	80	$ 1,049.49	$ 1,602 83	52 7%	4 0%	435%
14	Spent Sulfuric Acid	2819330	131	257	388	$ 196 35	$ 315 70	60 8%	9 5%	50%
15	Fuming Sulfuric Acid (TIH)	2819340	18	24	42	$ 628.11	$ 954.44	52.0%	3.5%	29%
16	Fuming Sulfuric Acid (non-TIH)	2819345	37	37	74	$ 1,291 32	$ 1,970.86	52 6%	4 0%	117%
17	Muriatic Acid	2819450	254	250	504	$ 919 51	$ 1,418.03	54 2%	5.1%	141%
18	Polyethylene	2821142	17	18	35	$ 1,258 84	$ 2,105 92	67 3%	14 0%	7%
19	Petroleum Coke	2991315	280	375	655	$ 1,139 48	$ 1,989.85	74 6%	19 0%	77%
20	Lime	3274110	41	61	102	$ 363 01	$ 606.56	67 1%	13 8%	-25%
21	Flammable Liq Waste	4810560	25	12	37	$ 1,375.31	$ 2,119.53	54 1%	5 0%	40%
22	Total/Weighted Average 6/	xxx	3860	3657	7517	$ 945 55	$ 1,483 67	56 9%	6 9%	90%
23	Total/Simple Average 7/	xxx	3860	3657	7517	$ 917 16	$ 1,441.05	57 1%	7 0%	95%

1/ Carloads from Dup Op Exh II-B-3 {{ }} (1997-2009)
2/ 1997 variable costs from workpapers and 2009 variable costs from Dup. Rebuttal Exh II-A-1. 46.80%
3/ (Column (7) / Column (6)) - 1
4/ Column (7) divided by (Column (6) x (1+ change in {{ }} of 46.8%)) -1
5/ Weighted average cumulative increase for each contested lane of this commodity from Dup Op Ex II-B-3
6/ Sum for Column (3), Column (4) and Column (5). Column (6) and Column (7) weighted on the carloads in Column (5)
7/ Sum for Column (3), Column (4) and Column (5) Simple average for Column (6) and Column (7)

TAB 2

Highly Confidential Information

Redacted

PART İII-A

TAB 1

CROSS-OVER TRAFFIC

The Board should not apply the limitations upon cross-over traffic that it has proposed in *Rate Regulation Reforms*, or any other cross-over traffic limitations that may be adopted in that proceeding, for the following four independent reasons:

A. The Board Already Has Decided Not To Apply Any Cross-Over Traffic Limits Proposed Or Adopted In *Ex Parte 715* To Pending Cases;

B. Retroactive Application Of The *Ex Parte 715* Proposals To DuPont Would Be Highly Prejudicial;

C. The Rationale For Restricting Cross-Over Traffic In *Ex Parte 715* Is Flawed, and

D. DuPont Has Not Abused Cross-Over Traffic.

A. THE BOARD ALREADY HAS DECIDED NOT TO APPLY ANY CROSS-OVER TRAFFIC LIMITS PROPOSED OR ADOPTED IN *EX PARTE 715* TO PENDING CASES

The Board expressly decided not to apply any new restrictions upon cross-over traffic proposed or adopted in *Ex Parte 715* to pending cases. In the *Ex Parte 715* Notice, the Board stated that "[w]e do not propose to apply any new limitation ..to any pending rate dispute that was filed with the agency before this decision was served."[1] DuPont filed its Complaint on October 7, 2010, which was nearly two years before the *Ex Parte 715* Notice was served.

The Board's determination not to apply any proposed or newly-adopted cross-over restrictions to pending cases was not a preliminary determination upon which the Board was merely soliciting public comment. If the Board was only soliciting comments upon whether to apply the proposed cross-over rules to pending cases, it would have stayed those cases until that determination was made in order to avoid the potentially unnecessary waste of resources. The

[1] *See Ex Parte 715*, p. 17, n. 11.

proposed restrictions could have such an impact on pending cases that any attempt to apply those rules retroactively could require the submission of all new evidence.

In the past, when the Board has solicited comment upon whether to apply a proposed rule to pending cases, it has stayed those cases precisely to avoid this type of unnecessary waste. For example, when the Board first proposed the "Average Total Cost," or "ATC," methodology for allocating cross-over revenue in 2006, it explicitly suspended the procedural schedule in one case and held the schedules of two other proceedings in abeyance, while inviting comment on "whether or to what extent it would be inequitable to apply the changes proposed herein, or parts thereof, to their pending cases."[2] In addition, the Board explicitly stated its intent to apply whatever new methodology it might adopt to pending cases and invited comment upon that proposal.[3] Finally, the Board declared that "[t]he procedural schedule for this rulemaking proceeding will be expedited in the interest of fairness to the parties in the pending cases."[4] In *Rate Regulation Reforms*, the Board has taken none of these actions precisely because it has decided not to apply any newly-adopted cross-over traffic rules to pending cases.

The Board reaffirmed its decision against retroactive application to pending cases in its November 29, 2012 decision denying NS's "Motion To Hold Case In Abeyance Pending Completion of Rulemaking." The Board stated, at pages 4-5:

> We have already clearly stated that "[w]e do not propose to apply any new limitation [that may be adopted in *Ex Parte 715*] retroactively to...any pending rate dispute that was filed with the agency before the decision was served." Rate Regulation Reforms, slip op. at 17 n. 11. We believed there that allowing those cases to continue "would be fair to those complainants, who relied on our prior precedent in litigating those cases." Id. Hence, it was the Board's intention that cases pending prior to the service of Rate

[2] *Major Issues NPRM*, slip op. p. 2.
[3] *Id.*
[4] *Id.*, slip op. at 3.

CROSS-OVER TRAFFIC

> Regulation Reforms should proceed as normal, absent some compelling reason or distinguishing factor that makes it more appropriate to place them in abeyance

DuPont's "fairness" and "reliance" interests are stronger now even than they were then. DuPont's "reliance" interest in particular only grows stronger the further into the process that the case proceeds Indeed, the Board's concern with a complainant's reliance interest only makes sense in the context of retroactive application of new rules to pending cases because DuPont has relied upon that precedent when deciding to file its Complaint and to develop its evidence. There would not be any point to citing a "reliance" interest solely for the purpose of allowing the case to proceed if the Board were to apply new rules retroactively at the end of the case anyway

B. RETROACTIVE APPLICATION OF THE *EX PARTE 715* PROPOSALS TO DUPONT WOULD BE HIGHLY PREJUDICIAL

The SAC methodology is dauntingly complex, long, and expensive When the Board's *Coal Rate Guidelines* decision was affirmed on appeal, these concerns were clearly on the mind of the Court In a concurring opinion, Judge Becker cautioned:

> Although I join the majority in upholding the Commission's adoption of Stand Alone Cost modeling within its guidelines, I also write separately to identify the serious problems that I see developing if the Commission does not effectively minimize the costs incurred by shippers in challenging the carrier's rates (either through a Stand Alone Cost model or through any other Constrained Market Pricing constraint) and maximize the discovery available to them when doing so. The shippers argue forcefully that rate challenges will be frustrated by the complexity of the Commission's inhospitable rules and procedures. Because I agree that rules and regulation that produce such futility would violate the shipper's statutory right to challenge rates, I write to note my belief that future courts may have to set aside the rules if the Commission does not resolve these problems [5]

[5] *See Consolidated Rail Corp v U S.*, 812 F 2d 1444, 1457-58 (3rd Cir 1987) (Becker, J concurring in part and dissenting in part).

CROSS-OVER TRAFFIC

The SAC process has only become more complex since Judge Becker expressed those concerns. The prejudice from applying the proposed cross-over traffic restrictions to DuPont, which already has expended substantial time and money to bring this case and submit Opening Evidence in substantial reliance upon well-established precedent concerning the use of cross-over traffic, would be incalculable. In recognition of this fact, the Board has justifiably determined not to apply any new cross-over rules proposed or adopted in *Ex Parte 715* to DuPont's pending rate case.

The use of cross-over traffic in the SAC analysis has been well-established precedent for nearly 20 years. It was founded upon basic SAC principles and the need to ensure effective access to regulatory remedies through a manageable SAC process. The Board first approved the use of cross-over traffic in *Nevada Power II*, because excluding cross-over traffic "would weaken the SAC test" by "depriv[ing] the SARR of the ability to take advantage of the same economies of scale, scope and density that the incumbents enjoy over the identical route of movement."[6] The SAC analysis attempts to replicate a contestable market rate,[7] which is one of two economic theories that are central to the principle of constrained market pricing that is at the core of the SAC analysis.[8] "A contestable market is one into which entry is absolutely free and exit absolutely costless where the new entrant suffers no disadvantage relative to the incumbent."[9] If the SARR may not select from the same traffic that is available to the

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[6] *See Nevada Power II*, p. 265, n. 12
[7] *Id*, p. 266
[8] *See Coal Rate Guidelines*, pp. 528-29
[9] *See Nevada Power II*, p. 266, citing *Guidelines* p. 528

incumbent, including cross-over traffic, then the SAC analysis cannot truly replicate a contestable market because the SARR suffers a disadvantage relative to the incumbent.[10]

In 2004, ten years after *Nevada Power II*, the STB observed that "[t]he use of cross-over traffic to simplify the SAC presentation is a well-established practice."[11] The STB identified multiple reasons why cross-over traffic is both necessary and desirable, which remain true today and which would be undermined by the proposed limits on cross-over traffic.

First, the Board observed that "[p]ermitting [the complainant] to use cross-over traffic in its SAC presentation...keeps the SAC analysis properly focused on the core inquiry—whether the defendant railroad is earning adequate revenues on the portion of its rail system that serves the complaining shipper... Creating a SARR to serve the same traffic group without using the cross-over traffic device would dramatically enlarge the geographic scope of a SARR" by requiring a complainant to build a SARR capable of handling the cross-over traffic from its origin to its destination, thus including far more facilities than those needed to handle the issue movement.[12] The Board's proposed limits upon cross-over traffic would completely undermine this benefit by requiring the very expansion of a SARR that the Board previously has determined

[10] Because contestable market theory holds that an entrant into a market need not replace the incumbent in its entirety, the SARR may replace a subset of the incumbent's products or services That subset of services can take two forms The SARR may choose to carry any subset of traffic on a particular line segment and it may choose to provide only a portion of the total service for the traffic it selects. In both cases, the SARR is choosing to serve a subset of the incumbent's relevant market, as contemplated by contestable market theory The latter form specifically includes cross-over traffic. Thus, restricting cross-over traffic would violate the tenants of sustainability required for a contestable market See Baumol, William J , John C. Panzar, and Robert D. Willig, "*Contestable Markets and the Theory of Industry Structure*," New York, Harcourt Brace Jovanovich (1982) ("Baumol, Panzar and Willig") at page 197

[11] *See PSCo/Xcel*, p 601 [citations omitted] [underline added]

[12] *Id.*

to be undesirable Instead of focusing upon the portion of the defendant's rail system that handles the issue traffic, a SARR would become many multiples larger.[13]

Second, the Board correctly observed that expanding the SARR will not eliminate cross-over traffic, but simply create new groups of cross-over traffic [14] Because each extension of the SARR to originate and/or terminate one group of cross-over traffic would create a new group of cross-over traffic over the added line segments, a shipper would have to extend its SARR even further in order "to generate the same economies of density" that the defendant railroad enjoys over the newly-extended SARR. This quickly becomes a "cascading analysis [that] could result eventually in a complainant having to replicate almost all of [the defendant's] system. The scope and complexity of the proceeding would expand exponentially."[15]

This leads to the third and final observation of the Board, which is that:

> [t]he use of cross-over traffic thus provides a reasonable measure of simplification that allows SAC presentations to be more manageable. Curtailing the geographic scope of the SARR greatly simplifies the operating plans that must be developed, thus limiting the complexity of what is nevertheless still a dauntingly large and detailed task. Without cross-over traffic, captive shippers might be deprived of a practicable means by which to present their rate complaints to the agency."[16]

Also in *PSCo/Xcel*, the Board observed the following consequences from expanding a SARR to originate and/or terminate cross-over traffic:

> While the WCC is a relatively small and straight-forward SARR, the parties had to produce, and the Board analyze, dozens of volumes of evidence on the costs associated with acquiring the land, designing, building, and operating this short SARR (approximately 400 route-miles). It is difficult to imagine the amount of materials that would have to be produced and analyzed to put

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[13] *See*, e g , *Id* (the 400 mile Xcel SARR would need to be 10 times larger to serve the destinations); *Nevada Power II* p. 263 (the 1400 mile SARR would double to 2800 miles)
[14] *See PSCo/Xcel*, p 602.
[15] *Id*
[16] *Id*, p 603

> together the evidence needed to design a railroad 10 times larger The number of disputed issues would also escalate, and the operating plans and computer simulation models would become so complicated as to risk being intractable.[17]

Based upon these prior Board observations, an inevitable consequence of the Board's proposed cross-over limits would be to increase SARRs exponentially, or to deny a shipper any regulatory remedy at all because the cost and complexity of the SAC analysis will have become so overwhelming that it would not be practical for a shipper to pursue its remedies.

The Board very recently held that both of these consequences are unacceptable In *WFA/Basin*, the Board reaffirmed its rationale for using cross-over traffic as a modeling device·

> [T]his device has become an indispensable part of administering a workable test. Without cross-over traffic, the SARR would need to replicate the entire service provided by the defendant railroad for all of the traffic included in the SAC analysis .. Such an expanded SAC analysis, however, could be impracticable and would not allow us to meet our regulatory objectives, and we must guard against the SAC process becoming so complex and expensive as to deny captive shippers meaningful access to the rate review provided for under Guidelines [footnote omitted][18]

The Board similarly noted that:

> Without cross-over traffic, captive shippers might be deprived of a practicable means by which to present their rate complaints to the agency. This would be contrary to the policy directives set by Congress in 49 U.S.C 10101(2) (to require fair and expeditious regulatory decisions when regulation is required), 10101(6) (to maintain reasonable rates where there is an absence of effective competition), and 10101(15) (to provide for the expeditious handling and resolution of all rail proceedings required or permitted to be brought before the Board).[19]

This precedent demonstrates that the Board's proposed limits upon cross-over traffic will leave shippers with a choice between two impermissible options that would violate SAC principles and deny captive shippers meaningful access to the regulatory process.

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[17] *Id*
[18] *See WFA/Basin*, p 11
[19] *See PSCo/Xcel*, p 16

CROSS-OVER TRAFFIC

In the face of the foregoing 20 years of precedent holding that the use of cross-over traffic is "well-established" and "indispensable," DuPont could not have been on notice that all of this was about to change at the time DuPont filed its opening evidence. Even the Board's decision in *AEPCO*, served on June 27, 2011, gave no hint that the Board was even considering restrictions upon cross-over traffic, much less restrictions as far reaching and drastic as those the Board eventually would propose in *Ex Parte 715*.

The only concern expressed by the Board in *AEPCO* was "with how the parties have developed the variable costs for the traffic movements on the SARR submitted by AEPCO" because "most of AEPCO's traffic group moves in trainload service, but most of the variable costs calculated for that group are costed assuming it is moved in carload and multi-car service."[20] Moreover, this concern was posited solely in the context of the Maximum Markup Methodology ("MMM") calculation, not the proper use of cross-over traffic, and the Board never suggested that the proper way to address this issue would be to restrict cross-over traffic in any manner. Rather, the Board attempted to address its concern by instructing the parties "to submit revised variable cost calculations, reflecting actual operating characteristics of the movement on the SARR, for the traffic group submitted on rebuttal."[21] Thus, it simply is not credible to suggest that DuPont could and should have divined that the Board would propose any restrictions upon cross-over traffic from just two sentences in the 142-page *AEPCO* decision. The only subject that reasonably could be considered to be in "flux" after this decision was the calculation of variable costs in the MMM methodology.

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[20] *See AEPCO*, p. 2.
[21] *Id.*

CROSS-OVER TRAFFIC

Nor did the Board's final decision in *AEPCO*, served on November 22, 2011, provide any hint of impending cross-over traffic restrictions Because the Board determined that the revised variable cost calculations submitted by the parties in response to the June 27, 2011 decision was immaterial to the outcome of the case, it declined to resolve the concerns expressed in that decision. The Board, however, declared that "[t]he June 27 decision has properly framed this issue for future rate litigants to consider and brief"[22] This reference to the June 27 decision provided no additional guidance or notice beyond that already described in the preceding paragraph.

The first time DuPont received any notice that the Board was considering any restrictions upon cross-over traffic was on July 25, 2012, when the Board served the *Ex Parte 715* Notice. This was three months after DuPont filed its Opening Evidence Moreover, DuPont had been preparing its Opening Evidence for over six months prior to actually filing it. The selection of traffic for the SARR, which includes the selection of cross-over traffic, is one of the very first steps in the SAC analysis DuPont relied extensively on the Board's well-established precedent in doing so, and subsequently expended an enormous amount of time and money to construct its entire SARR around that traffic group. Thus, the prejudice to DuPont if the Board were to apply any cross-over restrictions retroactively to this case is obvious.

[22] *Id.* p 36

CROSS-OVER TRAFFIC

C. THE RATIONALE FOR RESTRICTING CROSS-OVER TRAFFIC IN *EX PARTE 715* IS FLAWED

1. The Board Has Not Provided A Cogent Rationale For Departing From Established Precedent

The fundamental premise of the Board's proposals to limit cross-over traffic is that there may be a disconnect, when handling a certain type of cross-over traffic, between the cross-over revenue allocation methodology (which the Board also has proposed to modify in *Rate Regulation Reforms*, but for different reasons) and the SARR's costs of handling such cross-over traffic, which, allegedly, creates a bias in favor of shippers under certain SARR operational constructs.[23] But this perceived "disconnect," even if it were real, which it is not, would not justify the Board's proposed cross-over traffic restrictions because the Board never intended any connection between ATC revenue allocations and the SARR's operations. Rather, ATC revenue allocations are intended to reflect the incumbent railroad's operations over the line segments replicated by the SARR. The Board's attempt to create a connection with the SARR's operations is an unacknowledged and unexplained departure from precedent.

The Board attributes this newly-perceived disconnect to the increased use of overhead carload and multi-carload cross-over traffic in Full-SAC cases.

> There is a disconnect between the hypothetical cost of providing service to these movements over the segments replicated by the SARR and the revenue allocated to those facilities. When the proposed SARR includes cross-over traffic of carload and multi-carload traffic, it generally would handle the traffic for only a few hundred miles after the traffic would be combined into a

[23] *See Ex Parte 715*, p 16. The alleged "disconnect" is really imprecision caused by differences between the incumbent's actual movement-specific costs and the URCS Phase III program's use of system averages to estimate variable costs for individual movements. This imprecision would exist regardless of the SARR's operations. This is neither inappropriate nor a problem, because such imprecision exists in all aspects of URCS when used in the SAC analysis. Moreover, if it were a problem, there are far less intrusive ways to address it than to restrict a SARR's access to cross-over traffic.

> single train As such, the "cost" to the SARR of handling this traffic would be very low. In recent cases, litigants have proposed SARRs that would simply hook up locomotives to the train, would haul it a few hundred miles without breaking the train apart, and then would deliver the train back to the residual defendant. All of the costs of handling that kind of traffic (meaning the costs of originating, terminating, and gathering the single cars into a single train heading in the same direction) would be borne by the residual railroad. However, when it comes time to allocate revenue to the facilities replicated by the SARR, URCS treats those movements as single-car or multi-car movements, rather than the more efficient, lower cost trainload movements that they would be. As a result, the SAC analysis appears to allocate more revenue to the facilities replicated by the SARR than is warranted.[21]

By this reasoning, the Board would attribute a purpose to ATC that it never intended and previously disavowed.

Specifically, the Board is using ATC to judge the fairness of cross-over revenue divisions based upon the SARR's costs, rather than the incumbent railroad's costs. The Board previously rejected such comparisons In *Major Issues*, the Board explained that ATC estimates the incumbent's cost of service over each line segment, and allocates revenues to those segments based on the incumbent's relative costs for each segment[25] In *WFA/Basin II*, the Board clarified that ATC should use the incumbent's traffic density over each line segment, not the SARR's density and that "the objective of ATC is to reflect the defendant carrier's relative costs of providing service over the relevant segments of its network."[26]

Consistent with this precedent, the Board also does not consider the SARR's costs when the SARR includes internal reroutes of cross-over traffic. For example, assume a cross-over movement of three equidistant 300 mile segments from origin A, to intermediate stations B and C, and then to destination D. Now, assume that the SARR constructs a different, lower density

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[24] *See Ex Parte 715*, p 16 [underline in original].
[25] *See Major Issues*, p 34.
[26] *See WFA/Basin II*, p 13 [underline added].

route between stations B and C that is 350 miles long and reroutes the cross-over traffic over that longer, less dense route. ATC allocates the cross-over revenue based upon the actual high-density 300 mile route rather than the SARR's longer, less dense, and more expensive 350 mile route. Although this is proper because the ATC divisions are intended to reflect the incumbent's costs rather than the SARR's, the Board's new logic would contradict this policy

The Board's attempt to align the ATC revenue divisions with the SARR's operations also is at odds with the long-held view that the SARR does not need to be another railroad [27] This understanding was one of three explanations that the Board provided in *WFA/Basin II* for using the incumbent's densities rather than the SARR's [28] Because the SARR does not need to be another railroad, how the SARR runs its operations should be immaterial to the division of cross-over revenue under the ATC methodology.

ATC works as the Board intended. In *Major Issues*, the Board stated that the purpose of ATC is to reflect, to the extent practicable, the incumbent's relative average costs of providing service over the on-SARR and off-SARR segments [29] If the incumbent performs more costly origin and termination switching of cross-over traffic on the off-SARR segment, URCS assigns additional costs to those segments, which means that ATC assigns additional cross-over revenue to those segments whether the traffic is single car, multi-car, or trainload traffic Thus, contrary to the Board's assumption in *Ex Parte 715*, ATC does not allocate revenue to the SARR for origin and termination services that the SARR does not perform. Not a single railroad party to *Ex Parte 715* challenged this fact in three rounds of comments.

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[27] *See Guidelines*, p. 543.
[28] *See WFA/Basin II*, p 14
[29] *See Major Issues*, p 31.

CROSS-OVER TRAFFIC

Although the Board has focused on origin and termination services, its concern actually seems to be with inter and intra-train ("I&I") switching costs, which URCS assigns on a system average basis in 200 mile increments, rather than based on where and the extent to which such switching actually occurs for individual movements. This was the issue in *AEPCO*, which the Board cites as the basis for its concern.[30] While this assumption creates imprecision, it does not create bias, because this imprecision can work equally in favor of the SARR or the residual incumbent. And in fact, in this case, the NS objects to the inclusion of cross-over traffic that places the residual NS – not the SARR – in the role of the overhead carrier whose efficient trainload operations[31] the Board believes may be over allocated revenues under the existing ATC formula. Thus, the Board has no basis to conclude that the ATC methodology fails to allocate sufficient revenue to the residual incumbent for the tasks that it performs.

Rather than demonstrate that ATC allocates insufficient revenue to the residual incumbent line segments, the Board argues that ATC appears to allocate more revenue to the SARR than is warranted for the tasks that the SARR performs.[32] The Board's presumption was never explored, much less proven. Even if the Board's presumption were correct, which it is not, this comparison is not relevant because the proper focus is upon the services that the incumbent performs over the same segments. Moreover, even if it were relevant, the proper remedial action would be to revisit how the URCS Phase III program allocates terminal and switching costs, or to reinstitute the use of movement-specific cost adjustments for regulatory purposes, not to restrict the use of cross-over traffic.

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[30] *See Ex Parte 715*, p. 16, n. 10
[31] NS labels this traffic "leapfrog" traffic
[32] *See Ex Parte 715*, p. 16.

CROSS-OVER TRAFFIC

The Board's logic for adopting cross-over traffic restrictions is inconsistent with the foregoing precedent, because the ATC methodology for allocating cross-over revenue has nothing to do with the SARR's operations, but is entirely linked to the incumbent's real-world operations. The Board cannot have its logic both ways. If the Board uses the SARR's operations to determine the fairness of cross-over revenue allocations, it must use the SARR's operations (e.g., density) for all other elements of ATC. On the one hand, if there is a connection, the Board must use the SARR's density rather than the incumbent's in the ATC methodology, which it currently does not do. On the other hand, if there is no intended connection, any alleged "disconnect" discussed in *Rate Regulation Reforms* cannot provide the rationale for limiting the use of cross-over traffic.

Inexplicably, the Board now appears to be abandoning precedent by claiming that there is a problem caused by a "disconnect" between revenue allocations and the SARR's cost of providing service when no such "connection" was ever intended. The Board either must adhere to its precedent, or recognize its reasoning as a departure from precedent and provide a rational justification for its departure.

2. The Board's Proposals Would Bias The SAC Analysis

As demonstrated in the preceding section, there is no bias in the existing cross-over revenue allocation methodology, when applied to carload and multi-carload traffic, to justify the Board's proposed restrictions upon such cross-over traffic. In contrast, the proposed restrictions themselves would create a significant anti-SARR bias.

CROSS-OVER TRAFFIC

a. The Board's Proposals Are Overbroad

Even if the Board had identified a real bias, there is a tremendous disconnect between the perceived problem that the Board has identified and its two *Ex Parte 715* proposals to address that problem. Both proposals would eliminate not only the perceived "problem" traffic, but also a significant amount of traffic that does not possess the problem characteristics.

In *Ex Parte 715*, the Board explains that its newly-expressed concern with cross-over traffic has arisen due to a shift in recent cases from cross-over traffic that is predominantly trainload service to cross-over traffic that includes large amounts of carload and multi-carload movements.[33] The Board, however, is not concerned with all carload and multi-carload cross-over traffic. Rather, the Board is concerned with SARRs that construct a short segment over a high-density line and primarily serve as a bridge carrier that handles most of its traffic (a significant portion of which is single car and multiple car traffic) in so-called "hook-and-haul" overhead trainload service, leaving the residual incumbent to perform more costly terminal and gathering activities.[34] Therefore, the Board has solicited comments on two options for restricting this type of cross-over traffic. Both options, however, are so broad that they would eliminate significant amounts of cross-over traffic that the Board has not identified as a potential "problem."

The first option would exclude all cross-over traffic unless the SARR either originates or terminates that traffic.[35] The Board's presumption seems to be that a SARR that does not

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[33] *See Ex Parte 715*, p. 16. This shift has primarily arisen due to the Board's creation of internal cross-subsidy analyses, which require the shipper to include sufficient traffic over the investment and operating cost of each SARR segment.

[34] *Id.*

[35] *Id.*, p. 17

originate or terminate a movement will not perform any "costly" switching and handling services, such as I&I switching Although such cross-over traffic may not move in the "hook-and-haul" service that concerns the Board, the first proposal nevertheless would exclude all such traffic (including traffic that the SARR re-blocks at intermediate yards).

The second option would exclude all cross-over traffic except for trainload movements.[36] In other words, the only cross-over traffic that would be allowed on the SARR would be real-world unit train movements. This would eliminate all carload and multi-carload cross-over traffic, even if the SARR actually originated or terminated that traffic

For the reasons presented above, the Board may not, and should not, impose any limits upon cross-over traffic. However, even assuming arguendo that the Board has identified a problem with cross-over traffic that should be addressed, both of its proposed solutions would eliminate far more than just the alleged "problem" traffic

b. The Board's Proposed Cross-Over Traffic Restrictions Would Result In Severely Under-Allocated Cross-Over Revenue To The SARR Using Either Modified ATC Or Alternate ATC

The Board's attempt to avoid the misperception that ATC over-allocates revenue to the SARR based on SARR operations would in practice substantially under-allocate revenue to the SARR This is because, although ATC allocates cross-over revenue to the on-SARR and off-SARR line segments based upon the real-world traffic densities of the incumbent, the proposed restrictions upon cross-over traffic will restrict the SARR from the opportunity to achieve the traffic density of the incumbent. Not only does this amount to an entry barrier, but the result would be to create a significant "disconnect" between the high per-unit fixed costs the SARR

[36] *Id*

would need to recover over the replicated lines and the incumbent's low per-unit fixed costs reflected in the ATC divisions. This is true for both Modified ATC and Alternate ATC, although the under allocation is magnified by Alternate ATC.

Traffic density is the central tenet of ATC. "The ATC method calculates the average total cost per ton associated with the segments at issue," which will be higher on light density segments than on high density segments. As a result, ATC will allocate more revenue to lighter-density line segments based on the segments' relative fixed cost components.[37]

Because the SARR will have access to much lower traffic density than the incumbent over the same line segment due to the cross-over traffic restrictions, it will have a higher average total cost per ton for that segment. This means that the SARR requires more revenue to cover that higher cost. However, because ATC allocates cross-over revenue on the basis of the incumbent's higher real-world traffic density, ATC would not allocate sufficient revenue to the SARR under the Board's proposed cross-over restrictions. Therefore, despite its lower density, the SARR will receive less cross-over revenue even though it in fact needs more revenue to cover its average total cost per ton

In essence, the Board intends to justify cross-over traffic restrictions based upon a perceived "disconnect" between SARR variable costs and incumbent variable costs, but the restrictions themselves would create an even larger disconnect between SARR average fixed costs and incumbent average fixed costs Therefore, the Board would also need to use the SARR's traffic density to recalibrate the average fixed cost component for the on-SARR movement segment in the ATC calculation so as to avoid the creation of an even larger

[37] *See Major Issues*, pp. 33-35.

"disconnect" between the SARR's fixed cost recovery requirements and the revenue allocated to the SARR.

D. DUPONT HAS NOT ABUSED CROSS-OVER TRAFFIC

A fundamental predicate to the *Ex Parte 715* rulemaking is that there has been an abuse of cross-over traffic that creates a bias in favor of complainants in SAC proceedings That simply is not the case.

1. DuPont Has Used Cross-Over Traffic Consistent With STB Precedent

Cross-over traffic has been an essential tool in making the SAC analysis manageable for nearly 20 years. The Board first approved the use of cross-over traffic in *Nevada Power II* because excluding cross-over traffic "would weaken the SAC test" by "deprivfing] the SARR of the ability to take advantage of the same economies of scale, scope and density that the incumbents enjoy over the identical route of movement "[38] DuPont has used cross-over traffic in its SAC analysis consistent with the long line of STB precedent on this issue.[39]

In 2004, the STB, citing to this long line of precedent, confirmed that "[t]he use of cross-over traffic to simplify the SAC presentation is a well-established practice."[40] That was more than nine (9) years ago during which the practice has become even more entrenched. The STB pointed to multiple reasons why cross-over traffic is both necessary and desirable:

> Permitting [the complainant] to use cross-over traffic in its SAC presentation . keeps the SAC analysis properly focused on the core inquiry—whether the defendant railroad is earning adequate revenues on the portion of its rail system that serves the complaining shipper

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[38] *See Nevada Power II*, p 265, n 12

[39] *See*, e.g , *Otter Tail*, slip op at 13 ("Accordingly, we affirm the ability of a complainant to use cross-over traffic, which is now a bedrock feature of the SAC test" [emphasis added])

[40] *See PSCo/Xcel*, p 601 [citations omitted] [underline added]

CROSS-OVER TRAFFIC

***

> Creating a SARR to serve the same traffic group without using the cross-over traffic device would dramatically enlarge the geographic scope of a SARR" by requiring a complainant to build a SARR capable of handling the cross-over traffic from its origin to its destination, thus including far more facilities than those needed to handle the issue movement.
>
> ***
>
> Because each such extension of the SARR to handle one group of cross-over traffic from origin to destination would create a new group of cross-over traffic in order "to generate the same economies of density" that the defendant railroad enjoys over the extended SARR, "[t]he cascading analysis could result eventually in a complainant having to replicate almost all of [the defendant's] system. The scope and complexity of the proceeding would expand exponentially
>
> ***
>
> The use of cross-over traffic thus provides a reasonable measure of simplification that allows SAC presentations to be more manageable. Curtailing the geographic scope of the SARR greatly simplifies the operating plans that must be developed, thus limiting the complexity of what is nevertheless still a dauntingly large and detailed task Without cross-over traffic, captive shippers might be deprived of a practicable means by which to present their rate complaints to the agency [41]

If there ever was a case where the simplifying objectives of the cross-over traffic device were justified, it is this one. The DRR, which at more than 8,000 miles and 138 origin-destination pairs, already is the largest and most complex SARR ever presented to the Board, would be even larger and more complex if the Board were to require DuPont to include more facilities than those needed to handle the issue movements. Moreover, as the Board noted in *PSCo/Xcel*, each expansion of the SARR to include the facilities needed to handle one group of cross-over traffic would create a new group of cross-over traffic requiring another expansion,

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[41] *Id*, pp 601-603

until the SARR has replicated the entire NS network.[42] When the Board described the objective of cross-over traffic as "limiting the complexity of what is nevertheless still a dauntingly large and detailed task,"[43] it was referring to a single issue movement and a SARR that had only 396 2 route miles.[44] The DRR, which is 20 times larger and includes 138 issue movements, presents an even more compelling argument for the use of cross-over traffic.

DuPont has used cross-over traffic to accomplish the very objectives that underlie the Board's long-established precedent permitting such traffic. DuPont is trying to limit the complexity of an already "dauntingly large and detailed task." Without the cross-over traffic device, DuPont could be deprived of a practicable means by which to present its rate complaint to the Board.

2. The DRR Does Not Implicate The Concerns With Cross-Over Traffic Expressed in *Ex Parte 715*

In *Ex Parte 715*, the Board explained that its new-found concern with cross-over traffic has arisen due to a shift in recent cases from cross-over traffic that is predominantly trainload service to cross-over traffic that includes large amounts of carload and multi-carload movements.[45] The Board noted that:

> In recent cases, litigants have proposed SARRs that would simply hook up locomotives to the train, would haul it a few hundred miles without breaking the train apart, and then would deliver the train back to the residual defendant. All of the costs of handling that kind of traffic (meaning the costs of originating, terminating, and gathering the single cars into a single train heading in the same direction) would be borne by the residual railroad. However when it comes time to allocate revenue to the facilities replicated by the SARR, URCS treats

[42] *See PSCo/Xcel*, p. 602.
[43] *Id*, p. 603.
[44] *Id*, p. 632.
[45] *See Ex Parte 715*, slip op. at 16 and n. 10.

CROSS-OVER TRAFFIC

> those movements as single car or multi-car movements, rather than the more efficient, lower cost trainload movements that they would be. As a result, the SAC analysis appears to allocate more revenue to the facilities replicated by the SARR than is warranted.[46]

The Board has proposed new limits upon the use of cross-over traffic, because of this perceived "disconnect between the [presumed low] hypothetical cost of providing service to these movements over the segments replicated by the SARR and the revenue allocated to those facilities."[47] According to the Board, "[w]ithout a means of correcting or minimizing the bias.. , we need to address the use of cross-over traffic in Full-SAC cases."[48]

Because the Board has expressed concern with the nature of cross-over traffic, not the amount, handled by a SARR, any focus upon how much cross-over traffic the DRR handles is irrelevant Specifically, the Board is concerned with SARRs that construct a short segment over a high-density line and primarily serve as a bridge carrier that handles most of its traffic (a significant portion of which is single car and multiple car traffic) in hook-and-haul overhead trainload service, leaving the residual incumbent to perform more costly terminal activities. The DRR handles very little cross-over traffic of this type. In fact, it is the residual NS – not the SARR – that assumes the role of hook-and-haul overhead bridge carrier over high density segments (e.g , the Heartland Corridor) in this case. Amazingly, and completely contradictory to the Board's stated concerns in *Ex Parte 715*, NS claims that it is being placed at an economic disadvantage under this operational agreement in this case.

Less than 10 percent of the DRR's cross-over traffic constitutes the type of "hook-an-haul overhead trainload service" traffic that concerned the Board in *Rate Regulation Reforms*.

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[46] *Id*, p. 16.
[47] *Id*
[48] *Id*

CROSS-OVER TRAFFIC

This is because the DRR performs I&I switching on most of its overhead cross-over traffic This means that the DRR incurs comparable costs to those incurred by NS for intermediate handling. In addition, the residual NS frequently is the bridge carrier with the DRR providing the more costly terminal services For other cross-over movements where the DRR acts only as a bridge carrier, NS also is only a bridge carrier, but over a larger geographic footprint, which means that neither the DRR nor the residual NS provides more costly terminal services. Rather, they are both providing hook-and-haul service

Assuming, arguendo, that the Board has identified a genuine bias from certain types of cross-over traffic, only a small portion of the DRR's cross-over traffic is the type that creates this alleged bias Furthermore, NS has identified roughly 20 percent of the DRR traffic as "leapfrog" traffic that actually creates the reverse situation, where the alleged bias, if it existed, would be in the residual NS's favor. Consequently, there is no purpose in applying a cross-over traffic restriction in this proceeding.

TAB 2

Demonstration of DuPont and NS TCS/TDIS Intermodal Traffic Revenue Calculation Methodologies and
Development of Adjustment Indices Required to Correct DuPont Opening Overstatement and NS Reply Understatement

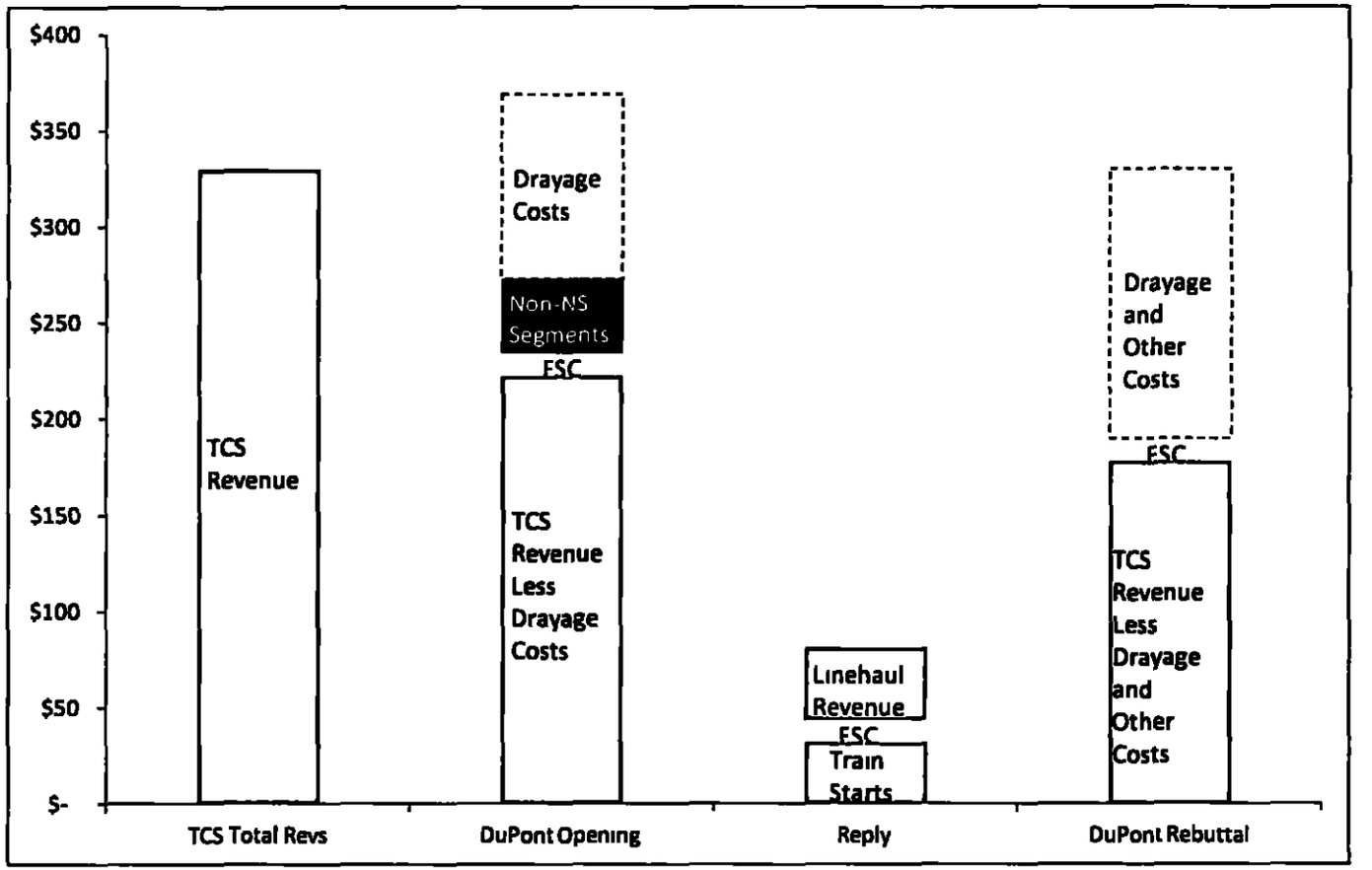
Item	2010 NS Data (Millions) TCS	TDIS	Total	Percent 1/	Source
(1)	(2)	(3)	(4)	(5)	(6)
Undisputed Facts					
1 NS Total Railway Operating Revenues			$9,516.4		NS 2010 R-1 Report to the STB, Schedule 210 Line 13, Column (b) 2/
2 NS Total Railway Operating Revenues			$9,516.0		NS 2010 Annual Report and 10-K filed with the SEC, Page k21 2/
3 NS Intermodal Operating Revenues			$1,796.0	100%	NS 2010 Annual Report and 10-K filed with the SEC
4 NS Intermodal Total Net Revenue on Line-Haul Moves in Provided Traffic Data			$1,440.0	80%	NS Reply Work Paper "DRR Selected NS Traffic.xlsx"
5 NS Intermodal Revenue not included in Traffic Data			$356.0	20%	Line 3 - Line 4
NS Reply Methodology					
6. TCS Train Starts Revenue	$35.1		$35.1		NS Reply Work Paper "TCS Misc WBs.xlsx"
7 NS Reply Model Calculation of NS Intermodal Revenues			$1,475.1	82%	Line 4 + Line 6
DuPont Opening Methodology					
8 Total TCS/TDIS Revenue Including Foreign Road Segments	$324.0	$51.5	$375.5		DuPont Rebuttal Workpaper "TCS-TDIS Per Unit PV v2 Reb.xlsx"
9 Total Drayage Costs	-$89.3	$18.6	-$107.9		DuPont Rebuttal Workpaper "TCS-TDIS Per Unit PV v2 Reb.xlsx"
10. Total TCS/TDIS Revenue Less Drayage Costs, Including Foreign Road Segments	$234.7	$32.9	$267.6		Line 8 + Line 9
11 TCS/TDIS Intermodal Line-Haul Payments to NS in Provided Traffic Data	$40.9	$22.7	-$63.6		TCS data from NS Reply Work Paper "TCS Misc WBs.xlsx", TDIS data from DuPont Rebuttal Work Paper "TDIS NS REV SUM.xlsx"
12 NS Intermodal Total Net Revenue in Provided Traffic Data Less TCS/TDIS Line-haul Revenue			$1,376.4		Line 4 + Line 11
13 DuPont Opening Model Calculation of Base NS Net Intermodal Revenues			$1,644.0	92%	Line 10 + Line 12
TCS/TDIS Expenses in Addition to Drayage Costs and NS Line-Haul Payments Identified by NS in Reply					
14 Payments to Foreign Roads	-$37.5	-$0.5	$38.0	3/	DuPont Rebuttal Workpaper "TCS TDIS AP Summary Reb.xlsx"
15 Payments to Terminal Operators	-$19.9	$0.9	$20.8	4/	DuPont Rebuttal Workpaper "TCS TDIS AP Summary Reb.xlsx"
16 Payments to IT Service Providers	-$4.2	-$0.9	-$5.1	3/	DuPont Rebuttal Workpaper "TCS TDIS AP Summary Reb.xlsx"
17 Payroll Expenses	-$15.8	-$2.7	-$18.5	3/	TCS from: Triple Crown Employee Data.xls, TDIS from: TDIS Personnel.xlsx
18 Office Space/Intermodal Facilities and Buildings/Trailer Leases	$1.3	-$0.3	-$1.7	5/	TCS from: TCS Leases_Reb.xls, TDIS from: TDIS Leases_Reb.xlsx
19 Total	$78.8	-$5.3	$84.1		Sum of Lines 14 through 18
20. Total Excluding Payments to Foreign Roads	$41.2	-$4.8	$46.0		Sum of Lines 15 through 18
DuPont Rebuttal Adjustments					
21 Total TCS/TDIS Revenue Excluding Foreign Road Segments	$286.5	$51.5	$337.9		DuPont Rebuttal Workpaper "TCS-TDIS Per Unit PV v2 Reb.xlsx"
22 Total TCS/TDIS Revenue Less Drayage Costs, Excluding Foreign Road Segments	$197.1	$32.9	$230.0		Line 21 + Line 9
23 DuPont Rebuttal Model Calculation of Base NS Net Intermodal Revenues			$1,606.4	89%	Line 22 + Line 12
24 DuPont Opening Model Calculation Less Additional TCS/TDIS Expenses Identified by NS			$1,560.4	87%	Line 23 + Line 20
Required NS Net Revenue Adjustment on TCS/TDIS Moves					
25 Adjustment Factor Required to Account for Additional TCS/TDIS Expenses (Apply to TCS/TDIS Net Revenues on TCS/TDIS Moves in DuPont Model)			0.800		[Line 24 - Line 12] / Line 22
26 Application Test.			$1,560.4	87%	Line 12 + [Line 22 x Line 25]
27 Adjustment Factor Required to Account for Additional TCS/TDIS NS Revenues (Apply to NS Line-Haul Revenues on TCS/TDIS Moves in NS Model)			2.341		[Line 24 - Line 7 - Line 11] / ABS (Line 11)
28 Application Test			$1,560.4	87%	Line 12 + Line 6 + [ABS (Line 11) * Line 27]

1/ Column (4) / Line 9, Column (4)
2/ See Rebuttal Work Paper "NS Revenue Reporting 2010.pdf"
3/ Matches totals cited in NS Reply at page III-A-62
4/ NS Reply page III-A-62 claimed "tens of millions of dollars"
5/ NS Reply page III-A-62 did not cite totals

SOURCE: "DRR Selected NS Traffic TCS Revenue v2.xlsx"

TAB 3

Comparison of DuPont and NS Revenue Calculation for TCS Moves



Source TCS Revenue Table_Reb.xlsx

PART III-C

TAB 1

DATA SUFFICIENCY REBUTTAL

A. INTRODUCTION

NS's Exhibit III-C-7 is an attempt to: (1) justify NS's production of deficient data; (2) minimize the significance of the effort DuPont was forced to expend to develop a workable model from NS's woefully deficient data, and (3) mischaracterize the nature of DuPont's approach as being simplistic and based on shortcuts NS fails on all counts

First, NS's data production was deficient On the very first page on NS's Exhibit III-C-7, it states:

> DuPont had all the information it needed, and more, to develop and present a complete and accurate SAC analysis. Despite the availability of that data, DuPont failed to present a feasible operating plan [1]

NS expounds at page 10.

> DuPont... was able to create a database from the NS data that contained all of the information needed for DuPont to develop a "complete" train service plan—but (inexplicably) chose not to use that database in preparing its operating plan.[2]

However, this statement is belied by the fact that NS found it necessary to use a computer program called MultiRail to develop an operating plan from the data NS provided to DuPont It is also belied by the fact that NS required the use of local and through train schedules, and not actual movement data to develop its operating plan. If the database DuPont created from all provided NS data actually contained all the data that was needed to develop a complete train service plan, then NS would not have had to use MultiRail and unsupported train schedules to develop alternate train data in order to develop the operating plan it submitted in Reply.

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[1] *See* NS Reply Exhibit III-C-7, p 1
[2] *See* NS Reply Exhibit III-C-7, p. 10, emphasis in original

DATA SUFFICIENCY REBUTTAL

No party in any rate case ever decided by the Board has needed to use MultiRail (or a similar program) to manipulate the provided data in order to develop a feasible operating plan.[3] In all prior cases decided by the Board, the complainants and railroads alike have developed operating plans based strictly on the provided waybill, car event, and train event data. In all cases, the railroads' waybill and car event data have been used to select SARR traffic and calculate revenue divisions. In all cases, the railroads' train event data have been used to model SARR operations and develop SARR operating plans. In this case, DuPont followed the well-established and mutually accepted practice of modeling described above, made exponentially more difficult than in prior cases for all the reasons explained in its Opening Exhibits III-A-2, III-A-3, and III-C-1.

NS now objects to the use of its data as provided, and instead uses a third party software program (i.e., MultiRail) to morph its provided data into something it contends is more suitable in developing a SARR operating plan. NS' language on the subject is intentionally misleading NS states.

> NS did not rely upon any data that was not made available to DuPont in discovery to ascertain the origins and destinations, customer locations, and classification and switching requirements for the merchandise and intermodal traffic that the DRR would carry [4]

While the statement above is technically correct, it misses the point. NS may have nominally used the same data it provided in discovery, but NS relied on an esoteric software package that

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[3] The RTC model, the Rail Dispatch and Capacity Analysis Model ("RDCAM") or the Railway Analysis and Interactive Line Simulator ("RAILS") used by railroads in prior SAC cases test the capacity of a railroad system by flowing trains over the system. Such analyses are different from the analyses developed using MultiRail, which develops the trains that are then input into capacity models.

[4] *See* NS Reply Exhibit III-C-7, pp. 1-2, emphasis in original.

costs six figures to manipulate the data it provided into something several degrees removed from the data it provided.

Second, NS strongly implies that, because DuPont "was able to use the NS data to develop a database that linked all waybills, car event data, and historical NS trains associated with all of the traffic that DuPont selected for the DRR,"[5] and because DuPont "managed to select a body of traffic and model[] a SARR," that somehow the obstacles it was forced to overcome must have been insignificant and are not worthy of discussion. The challenges DuPont was forced to overcome are well chronicled in the record, and they were numerous and substantial by any measure. NS correctly states that DuPont was able to overcome most of them, but doing so took great time and effort. NS's argument is akin to saying that constructing the Great Wall of China must not have been difficult, seeing as somebody "managed" to do it.

Third, NS grossly mischaracterizes DuPont's analyses and models as simplistic and reliant on shortcuts. As "data experts,"[6] NS witnesses Fisher and Matelis surely recognize that data-intensive modeling frameworks must be structured to ensure the development of repeatable results through documented processes using clearly defined algorithms. However, NS is critical of DuPont's modeling framework as being misguided because it is designed to be a "simple, repeatable, mechanical [and automated] process."[7] In addition, NS misstates the goal of DuPont's methodology—which is to use known, documented, repeatable, mechanical processes to develop its traffic group and operating plan from the provided data—as a desire to reduce the SAC analysis to a "mathematical exercise."[8] This is simply not the case. By NS's admission,

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[5] *See* NS Reply Exhibit III-C-7, p 1
[6] *See* NS Reply Exhibit III-C-7, p 3
[7] *Id*
[8] *See* NS Reply Exhibit III-C-7, p 7

DATA SUFFICIENCY REBUTTAL

DuPont "performed a detailed, multi-step analysis using several data sources provided by NS in discovery,"[9] and "was able to compile a complex database from NS data for its traffic and revenue purposes."[10] DuPont developed a detailed database and used it to identify the DRR traffic, calculate the NS net revenues, develop the DRR revenue divisions, and identify the trains moving the DRR traffic. As was well documented in DuPont's Opening Evidence, all of these tasks were "complicated process[es] that required expert analysis of traffic records and train and car movement data."[11] To suggest that DuPont's Opening Evidence was purely a "mathematical exercise" is ridiculous.

NS takes its critique one step further into the world of make believe through claims that DuPont's analysis employs several "shortcuts." Specifically:

> [I]n filing its Opening Evidence, DuPont took multiple shortcuts, which among the most egregious, include failing to model local train service, failing to serve certain issue origins and destinations, and (incorrectly) eliminating tens of thousands of necessary trains from its Operating Plan.
>
> DuPont failed to provide a plan that accounted for the movement of each carload from its specific origin, through the DRR network (such that the car is included in each connecting train and classified and blocked as necessary at intermediate yards) and to its specific destination. These evidentiary failures [are] the very sort of shortcuts that the Board expressly warned DuPont to avoid in granting DuPont's request for a 90-day extension.[12]

These allegations are complete fabrications. What NS calls "shortcuts" in the DuPont process are actually data deficiencies. DuPont could not model the operations of train that was not included in the provided data. DuPont could not model the end-to-end operations of carloads for which select train movement records were omitted from the provided data. Evidently NS

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[9] *See* NS Reply Exhibit III-C-7, p. 10.
[10] *See* NS Reply Exhibit III-C-7, p. 7.
[11] *Id.*
[12] *See* NS Reply Exhibit III-C-7, pp. 2-3.

believes DuPont should have divined where data provided by NS was missing or erroneous, and developed surrogates to fill the voids. DuPont's failure to model data it was not provided cannot reasonably be considered a "shortcut." The fact that NS did not base its own operating plan on the databases it states DuPont should have been able to use speaks volumes. NS developed an alternate universe of car and train movement data (using the MultiRail program) to use as inputs to its operating plan development

DuPont's Opening Exhibits III-A-2, III-A-3, and III-C-1 describe the decision tree DuPont was forced to undertake and the resulting analytical framework DuPont was forced to develop to utilize NS's flawed data sets, and explain the "significant delays" it encountered in undertaking those tasks.

NS saves its harshest criticism for the DuPont analyses that support the development of its DRR operating plan. Amazingly, most of NS's angst is caused not by DuPont's modeling techniques or underlying programming, but rather by the data DuPont used as inputs to its models. NS argues that the provided NS Train Event data is not a valid or reasonable input data source for developing an operating plan (largely because it lacks critical information), and that the operating plan should have been developed based on analysis of NS's car event and waybill data. For example:

> [T]o rely upon the train event data to develop a 'carload' based railroad is misguided [13]
>
> DuPont's attempt to rely upon 'train event' data to develop routing data and dwell points and to establish local service requirements, is fundamentally flawed. NS train event data is not maintained at such a granular level.[14]

[13] *See* NS Reply Exhibit III-C-7, p. 8
[14] *Id*

DATA SUFFICIENCY REBUTTAL

> [C]ar event data was the appropriate dataset for purposes of developing an operating plan.[15]
>
> One cannot develop an operating plan for a carload network by using only train event data [16]
>
> [C]reating instead a 'trainload' railroad that does not provide all of the required services to its' customers.[17]
>
> This is yet another example of DuPont's misplaced reliance on the train event data, which is not designed to provide the sort of detailed analysis DuPont was seeking to achieve [18]
>
> [T]his issue would have easily been remedied had DuPont not excluded the car-event data from its analysis.[19]
>
> This car-specific data could easily have been used to clarify any inconsistencies in the train sheets.[20]

NS openly and repeatedly attempts to discredit the reliability and usefulness of its own train event data, stating that this data is inadequate for the purpose of developing a plan for operating trains over the SARR As discussed in detail below, this thesis is flawed on both theoretical and mechanical levels. Furthermore, if the train event data are truly as unreliable and inadequate as NS describes them to be, NS's production of the data without disclaiming the deficiencies and errors contained therein is a text book case of sand-bagging.

NS points to an intermediate database DuPont created as part of its movement routing analysis used in its traffic selection process as proof that errors DuPont made—not data deficiencies—led to the supposed failure of DuPont's operating plan. NS states that this

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[15] *Id.* p 9.
[16] *Id*
[17] *Id.* p. 20
[18] *Id.* p. 50
[19] *Id.* p. 52.
[20] *Id.* p. 53

intermediate database contained all the data DuPont needed, and should have been used by DuPont to develop its operating plan. Specifically,

> DuPont developed a detailed database that linked each NS waybill with the car events (from NS's car event data) that defined the movement of each car over the DRR system The DuPont [] Database also identified the NS trains on which a particular car moved while traversing the DRR's service territory . The creation of this database required a detailed analysis of NS's car and intermodal event data. DuPont's ability to manipulate the data to create such a comprehensive database belies its criticisms of the NS data [21]

At the outset, it is important to note that NS fundamentally misunderstands what the database in question (which it incorrectly refers to as the "DuPont Car/Train Database") contains and how it was developed. NS asserts that the database contains, "linked waybill, train, and car movement data."[22] NS is wrong The database does not contain train data, it contains train identification data that was pulled from car event data. The database also contains linked waybill, car event, intermodal event, switching, handling line, haulage receivables, and TCS/TDIS data.

More importantly, NS fundamentally misunderstands how DuPont used the database in question to develop the DuPont operating plan. In fact, NS incorrectly asserts (repeatedly) that the database was not used by DuPont.

> DuPont. . <u>was able to create a database from the NS data that contained all of the information needed for DuPont to develop a "complete" train service plan—but (inexplicably) chose not to use that database in preparing its operating plan.</u>[23]

> DuPont failed to use that very same database to develop its Operating Plan [24]

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[21] *See* NS Reply Exhibit III-C-7, pp 10-11
[22] *See* NS Reply Exhibit III-C-7, p. 15.
[23] *See* NS Reply Exhibit III-C-7, p 10, emphasis in original
[24] *Id*, p. 3

DATA SUFFICIENCY REBUTTAL

> DuPont apparently chose not to take advantage of the linked waybill, train, and car movement data that it compiled for traffic and revenue purposes in developing its operating plan.[25]

In black and white terms, DuPont most certainly did use the database in developing its operating plan. Specifically, DuPont used the database to develop origin station train departure statistics (loaded and empty car counts, train length, train trailing weights) for every train in the peak period RTC analysis and every train in the base period train list from which DRR operating statistics were developed.[26] Furthermore, DuPont used this database to identify intermediate stop location and car handling activity (pick-ups and set-outs) for all local trains in the peak week and in the base year.[27] In fact, elsewhere in Exhibit III-C-7, NS acknowledges this fact.

> DuPont undertook a separate analysis of car event information for local trains . DuPont compared the number of cars indicated in the NS train event data on each train to the number of cars included on the train as referenced in the NS car event data "[28]

Nonetheless, NS walks through several examples where it asserts that the database in question could have been used in the development of the DuPont operating plan. And, to the extent that NS has pointed out a valid adjustment to the modeling of local trains based on expanded use of car event data, DuPont has incorporated those changes in its Rebuttal RTC simulation and operating plan.

What NS is actually advocating, however, is the dismissal of its provided train data, not the use of its car event data. NS knowingly provided deficient train data that would inhibit DuPont's development of a seamless operating plan for all selected traffic NS also knowingly

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[25] *Id*, p. 15
[26] See DuPont Opening workpaper directories \\DuPont Open\III-C\III-C-2\base stats and \\DuPont Open\III-C\III-C-2\peak stats
[27] *Id*
[28] *See* NS Reply Exhibit III-C-7, p 9.

failed to provide a comprehensive database that could have been used in the development of a seamless operating plan for all selected traffic DuPont developed a complex database from the hodge-podge of disconnected, disparate databases NS did provide. NS now says that it is this database—one DuPont created, not one provided by NS—that is the definitive source for data upon which to build a seamless operating plan. Apparently NS has more faith in DuPont's consultants than it does in its own data management department when it comes to developing reliable databases [29] This position dovetails nicely with NS's assertion that the MultiRail-based operating plan it developed to support its evidence in this case is superior to the operating plan NS's operations department developed—and actually implemented—using its proprietary planning software for the same traffic group in the real world

NS argues that DuPont used the wrong database in developing its operating plan. "If DuPont had relied upon the [database it created from waybill and car event data], it would have known exactly which cars were on which train at each point along each train's route."[30] However, as discussed in detail below and in Part III-C, there are numerous instances (which DuPont has documented) in which the information in the database DuPont created from car event and other data conflicts with the information in the train event database upon which DuPont relied as the primary database for the development of its operating plan. DuPont did use the car event data to supplement the train data where possible, but when the two data sources contained conflicting information, DuPont deferred to the train data—the logical primary database for use

[29] It should be noted that NS uses a sophisticated data warehousing and business intelligence system in its normal course of business The system, developed by Teradata, contains a 34 terabyte data warehouse that provides real-time shipment and train information to customers, including gathering detailed information on train arrivals and departures. See DuPont electronic e-workpaper "Teradata Case On NS Data Warehouse.pdf," which is a case study prepared by Teradata of the data warehouse system it developed for NS

[30] *See* NS Reply Exhibit III-C-7, p. 21.

in modeling train movements in the RTC model. This logic comports with the logic used by all parties in all rate reasonableness cased decided by the Board in the last decade. Notably, the railroad's consultants in all those cases were the same consultants NS is using in this case. Never before in a decided rate case have the railroads—or their consultants—found fault with the train data-based model DuPont used in this case. In fact, in the last case to be decided—*AEPCO*—the railroads themselves implemented this model on Reply for an alternate SARR configuration they presented.

In addition to its twenty-page argument that a database developed by DuPont from multiple disparate data sets is a far superior source for NS train movement data than the train event data NS maintains in the normal course of business. NS also uses its Exhibit III-C-7 as a vehicle to respond to DuPont's chronicling of the data issues it was forced to overcome to develop and present Opening Evidence. In Opening. DuPont presented three such Exhibits Each is discussed separately below.

B. NS RESPONSE TO DUPONT EXHIBIT III-A-2

DuPont Opening Exhibit III-A-2 contained a discussion of ten (10) separate data-related issues that delayed or otherwise complicated DuPont's data analyses supporting its selection of the DRR traffic group and its development of movement-specific net revenues. NS addresses each issue separately in part II of its Reply Exhibit III-C-7 NS's overall message is that, because DuPont was able to overcome the myriad of challenges imposed on it by NS's data

production methods.[31] DuPont should forfeit its right to chronicle the challenges it was forced to overcome. For example

> DuPont does not allege that it was unable to use the data, rather, it complains only that this exercise was more difficult than it expected This argument has absolutely no bearing on DuPont's ability to select a traffic group and present its SAC evidence before the Board [32]

NS's cavalier and flippant dismissal of DuPont's legitimate documentation of its processes and procedures, including all obstacles to their timely completion, is troubling. The Board must hold NS accountable for its obstructive data production practices To suggest that NS's production of disjointed and inadequately documented data "has absolutely no bearing on DuPont's ability" to use the data is absurd. DuPont stands by its Opening Exhibit III-A-2 as written.

In addition to dismissing DuPont's process documentation as "much ado about nothing."[33] NS also makes false statements regarding DuPont's approach NS incorrectly asserts that DuPont "sought to reduce the SAC analysis to a purely "mechanical" exercise with as little human input, effort, and judgment as possible."[34] More importantly, nowhere did DuPont state that it sought to avoid human effort, judgment, and decision-making. NS and its consultants are fully aware of the scale and scope of the task DuPont faced in developing SAC evidence for a SARR of unprecedented size Even with good, reliable data, the sheer volume of data that must be processed through the various analytical models requires that major portions of the analysis be automated. To suggest that the sort of analyses required to be performed should (or could) have been completed without any sort of data processing—i e., automation—is completely unrealistic.

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[31] *See*, e g , NS Reply Exhibit III-C-7, p. 25 "DuPont successfully worked around the issue "
[32] *See* NS Reply Exhibit III-C-7, p 37
[33] *Id*, p. 34
[34] *See* NS Reply Exhibit III-C-7, p 29, citing DuPont Opening Exhibit III-A-2, p 9.

DATA SUFFICIENCY REBUTTAL

Furthermore, to imply that use of algorithms and automated processes to evaluate the required volumes of data is somehow divorced from the employment of "human input, effort, and judgment" is nonsensical.

For all of NS's bluster in response to DuPont's Opening Exhibit III-A-2, only two small sections contain substantive arguments. Both are addressed fully within the body of DuPont's Part III-A Rebuttal evidence. As discussed in Part III-A, DuPont accepts NS's adjustments to the methodology DuPont used to link waybill data records to switching and handling line payments data records However, NS's expanded methodology does not exonerate NS for its failure to provide adequate file linking keys and/or instructions In fact, the linking methodology NS developed was admittedly arbitrary and based on NS's consultants judgment, not on any documentation provided by NS in discovery.

Also as discussed at length in Part III-A, NS's other proposed adjustment to the revenues NS earns—and includes in its R-1 filings—on the intermodal shipments of its subsidiaries TCS and TDIS is bogus and self-serving. In Reply Exhibit III-C-7, NS attempts to discredit DuPont's analysis as unnecessarily complicated In fact, NS is critical in this one instance of DuPont's efforts to "create a complicated link between [] two data sets."[35] Apparently NS believes "human input, effort, and judgment" is only valuable and legitimate when exercised by NS's consultants NS goes so far as to say that, "Contrary to DuPont's assertion, the separate TCS/TDIS data do not include any records that are needed for the SAC analysis."[36] Were this actually true—it is not—NS would surely have objected to their production in the first place. The data clearly are needed for the SAC analysis. This is why DuPont requested, and NS

[35] *See* NS Reply Exhibit III-C-7, p 38.
[36] *Id*

provided, them in discovery. For reasons clearly articulated in Part III-A. DuPont continues to include this data (with minor adjustment) in Rebuttal.

C. NS RESPONSE TO DUPONT EXHIBIT III-A-3

In Opening Exhibit III-A-3. DuPont identified five (5) major problems that it encountered when utilizing the NS-produced electronic traffic data to develop required inputs for the calculation of DRR revenues for cross-over traffic included in the DRR traffic group: 1) NS actual route of movement , 2) NS mileage by NS segment: 3) NS density by NS segment: 4) NS fixed cost per route mile : and. 5) NS variable cost of service. In each of these areas. DuPont explained the nature of the data deficiency and the special study undertaken to work around the data deficiency.

On Reply. NS responds to each of the five (5) major problems identified by DuPont. NS's responses fall into one of five categories: 1) DuPont is correct that the data is insufficient but NS does not have an obligation to produce data that is designed to facilitate SAC analysis:[37] 2) DuPont is correct that the data is insufficient but NS put the data together as best as possible:[38] 3) DuPont is correct that the electronic data is insufficient but DuPont should have used maps, track charts or other paper data to make calculations;[39] 4) DuPont is correct that the electronic data is insufficient but NS produced the data in the format in which it is maintained during the ordinary course of business;[40] and, 5) DuPont is correct that the electronic data is insufficient but the number of bad files is miniscule.[41]

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[37] *See* NS Reply. p. III-C-40
[38] *Ibid.*
[39] *See* NS Reply, p III-C-41
[40] *See* NS Reply. p. III-C-43
[41] *See* NS Reply. p. III-C-44.

DATA SUFFICIENCY REBUTTAL

As with its response to the issues with the data needed to identify traffic moving on the system discussed above, nowhere did NS attempt to state that the data provided to develop ATC division percentages is not deeply flawed In fact, NS recognizes how difficult, complicated, and time-consuming it is to utilize the NS-produced data to implement the Board's methodology for the calculation of cross-over revenues [12] At the end of the day, NS can only agree that the data it provided in discovery for use in developing A TC revenue divisions is deeply defective

D. NS RESPONSE TO DUPONT EXHIBIT III-C-1

DuPont Exhibit III-C-1 explained the many flaws included in the NS's train event data, including, but not limited to, duplicate milepost information, missing milepost information, missing station information and missing train statistical information. Individually, each one of these flaws created an issue with examining and using NS train event data in the preparation of the SAC evidence However, it is not the individual flaws that really created havoc in DuPont's analyses, but rather the cumulative and compounding nature of the flaws. For example, if the only flaw in NS train event data was missing milepost information, DuPont could have worked around this issue by looking at the milepost information on either side of the missing record in developing its analyses. However, looking at the records on either side of the missing information requires the surrounding data to be accurate in order to make a reasonable inference on the missing information. That was not the case with the NS data. With the train event data

[42] *See* the "Joint Verified Statement Of Benton V Fisher and Michael Matelis In Support Of Norfolk Southern Railway's Reply To Second Motion To Compel Of E I DuPont De Nemours And Company" attached to "Norfolk Southern Railway Company's Reply To Second Motion To Compel Of E L DuPont De Nemours And Company" filed on August 1, 2011 in this proceeding. In their Joint Verified Statement, NS's experts Fisher and Matelis bemoan and complain to the Board that manipulating NS data is an "onerous task" requiring the utilization of "data that overlaps across different files". Clearly, the NS understands the insufficiency of the electronic data it produced in this proceeding and would prefer not to experience the burden associated with utilizing this data to produce evidence in this proceeding

provided by NS. the missing information was surrounded by equally flawed information making inferences in many cases unreliable or impossible.

NS's Reply Exhibit III-C-7 attempts to hide this fact by looking at each flaw individually. and dismissing them as small or immaterial When discussing individual flaws in data that impact millions of records, a small number of flaws quickly become material. When those flaws are compounded by other flaws, their impact grows exponentially

DuPont addresses each item in turn below.

1. **Duplicate Milepost**

DuPont noted in Opening that it identified 171 duplicate mileposts associated with 913,571 train events records.[43] Because milepost information is the only location information included in NS train event data. the inclusion of duplicate mileposts creates issues in identifying locations along a train's route. especially if the duplicate occurred in the first or last train event record

In Reply. NS stated that its "system is a product of numerous historic mergers. With each merger, the merged railroad maintained, for the most part, the infrastructure of its predecessors, including the milepost designations for the various districts. As such. duplicate mileposts developed on the system "[44] NS then attempts to dismiss the significance of this data issue by comparing the small number (171) of duplicate mileposts to the total number of train events with duplicate mileposts (913.571) and the total number of train event records (34.007.723).[45]

[43] *See* DuPont Opening Exhibit III-C-1 (A) (1)
[44] *See* NS Reply Exhibit III-C-7, p. 45.
[45] *Id*

DATA SUFFICIENCY REBUTTAL

Regardless of the cause of duplicate milepost codes in the NS system, they exist and must be accounted for in conducting any analysis that relies on train event data. NS did not provide a means to uniquely identify the stations with duplicate mileposts in the Train Event data. NS is fully aware of this issue and chose not to disclose it in discovery, much less provide additional data fields that would have allowed for differentiation between stations with duplicate mileposts (*such as district/milepost or subdivision/milepost*) The importance of accurate and well-defined Train Event data is underscored by NS' own admission: "The train event data provided detailed point by point information that could have been used to identify the exact location and route that DuPont's special study aimed to identify."[46] NS's defense for its data deficiency rests on a meaningless comparison of the number of duplicate mileposts to the number of train event records. Such a comparison is meaningless because it hides the fact that nearly 1 million individual train event records had to be scrutinized to resolve the duplicate milepost issue

2. Missing Mileposts

In Opening, DuPont documented 693,369 train event records with no milepost identified, and stated "While the number of records with blank mileposts is relatively small, their mere presence creates problems when attempting to use automated programming to work with the data."[47]

In reply, NS states that "DuPont's assertions amount to little more than a complaint that such minor data errors created problems with its preferred 'automated programming' approach", and "Building a railroad is not an automated process" They further contend: "The fact that

[46] *See* NS Reply Exhibit III-C-7, p 40
[47] *See* NS Reply Exhibit III-C-7, p. 4

DATA SUFFICIENCY REBUTTAL

DuPont confronted minor data issues in doing so is no excuse for the shortcuts and failings of DuPont's submission."[48]

NS's assertion that DuPont attempted to "build a railroad" using "an automated process" is absurd DuPont performed—and documented—a considerable amount of "non-automated" work in the development of its Operating Plan However, so-called "automated" or programmatic processes are necessary to analyze the massive volumes of data required to conduct SAC analysis, particularly in this case, in which NS provided over 700 million data records in discovery. NS's attempt to trivialize this issue through a comparison of the number of train event records with no mileposts (693,369) to the total number of train event records (34 million) fails because NS does not acknowledge that a manual inspection of 693,369 records is a monumental undertaking even if it is not required for the other 33 million plus data records.

3. Erroneous Mileposts

In Opening, DuPont documented 22 mileposts with erroneous information, and stated "erroneous location information causes problems when attempting to route trains and identify origin and destination locations."[49]

NS states that "this complaint relates to a minor data issue that should be easily identifiable (and correctable) by any data analyst "[50] NS further states that all the milepost data problems collectively affect a relatively small number (<0.2 percent) of event records Finally, NS states that, "Origin and destination information is easily discernible from waybill data," and,

[48] *Id*, p. 47.
[49] *Id*, pp 4-5.
[50] *Id*, p 47.

DATA SUFFICIENCY REBUTTAL

"Had DuPont retained the car-specific data in the database .. it would have easily been able to reconcile any inconsistencies in the data."[51]

As with the issues discussed above, this issue cannot be properly evaluated based on the frequency of its occurrence. NS fails to acknowledge the point that relatively small input errors can produce relatively large errors in final results. Furthermore, the City/State data in the waybill file and the station (OS) and city/state data in the Car Event file are not as granular as Milepost data.

4. No Station Information

DuPont stated in Opening that it "identified 199 mileposts that could not be definitely linked to a station or state. While a seemingly innocuous number, these mileposts showed up in over half a million train event records." and "DuPont had to manually impute station and state information for these 199 mileposts "[52] NS in reply states that DuPont "again attempted to mask the fundamental deficiencies of its evidence by citing minor data issues" (Exhibit III-C-7 at 48.)

As noted in Opening, DuPont did account for this data deficiency DuPont's discussion of this issue serves to demonstrate that a small number of data input errors (199 mileposts) had a large impact (500,000 impacted train events) on the analysis. Also, this issue, when considered along with the other issues documented in DuPont's Exhibit III-C-1, demonstrates that, in total, the data submitted by NS in discovery is deficient and analyses based on it are unavoidably affected by the inherent deficiencies.

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[51] *Id*, p. 48.
[52] *Id*, p 5

DATA SUFFICIENCY REBUTTAL

5. Multiple Mileposts per Station

In Opening, DuPont noted that 1,673 NS stations are associated with multiple mileposts, 1,101 of which were associated with mileposts recorded in the train event data.

In reply, NS chides DuPont for "Complaining about an issue that makes perfect sense in the real world of railroading yet again prov[ing] that DuPont views the SAC process as an automated, computerized exercise and has made no effort to take into consideration real work operations."[53]

NS again incorrectly accuses DuPont of seeking to implement a "completely automated, computerized exercise." As NS well knows, DuPont must correctly identify and categorize all mileposts to identify specific and precise "on-SARR" and "off-SARR" locations for every train movement included in the SAC analysis Because stations encompass multiple mileposts, the SARR does not always include all mileposts within a station.[54] This issue also highlights the mismatch between the Train Events data (which locates by Milepost) and Car Events (which locates by Station, City, and State).

It is clear that DuPont did not use an "automated" process to develop the information needed to develop its operating plan.[55] However, as stated above, it is unrealistic to think that DuPont would manually assemble the 34 million train event records provided by NS without the use of a digital process to effectively manage and analyze the information These processes are only as effective as the data input, e.g., "garbage-in/garbage-out" DuPont expended

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[53] *Id*, pp 49-50
[54] *Id* pp. 6-7
[55] *See*, e g , DuPont Opening e-workpaper "NS Non-Coal Trains - March 1.xlsx," which develops the initial non-coal train list If DuPont had not developed an "automated" process, it would have had to go through the time and effort to manually normalize train location information and train statistical information Also noted in that opening workpaper is DuPont's use of other supporting NS information, including train scheduling information, to develop its operating plan data

considerable effort attempting to fix NS's flawed data to move it to a point where reasonable inferences could be made

6. Arrival and Departure Imbalance

DuPont stated in Opening that there was nearly a 20-to-1 imbalance between train departure events and train arrival events. This data imbalance had serious ramifications for the development of train dwell times used in the SAC analysis.[56]

In Reply, NS suggested that the "data DuPont needed was in the car and intermodal event data", and "Locomotive event data .. also would have been useful to develop dwell times."[57]

Despite NS's statement that the needed data was in the car events, review of NS's work papers reveals that NS actually considered and rejected this very source of data, presumably for the same reason DuPont did – Car Event data produces inconsistent train dwell times. Instead, as discussed in its Rebuttal III-C narrative, NS relied upon the opinions of its operating witnesses to develop dwell times. DuPont's point in Opening remains valid NS's Train Event data is insufficient for determining Train dwell times, which NS acknowledges.[58]

NS's claim that the imbalance of arrival and departure times did not impact DuPont's transit time analyses because DuPont developed transit times in its RTC model is nothing but a classic misdirection play While shippers do not use railroad real-world transit time data to develop SAC, they do use the real world transit times to demonstrate whether the SARR is providing the same or better service than the incumbent railroad as is required in a SAC presentation. The failure of NS train event data to include balanced arrival and departure information made it impossible to compare all of the DRR's operations to NS's actual

[56] *See* NS Reply Exhibit III-C-7, p 7
[57] *See* NS Reply Exhibit III-C-7, p. 50
[58] *See* NS Reply Exhibit III-C-7, p. 50 paragraph 3

operations. Stated differently, DuPont did not use train event arrival and departure information to develop its SAC as NS incorrectly infers, but to measure the DRR's performance against the incumbent NS

7. Out of Sequence Arrival and Departure Times

DuPont highlighted in Opening that virtually every train had out of sequence train event arrival and departure times [59] Specifically, when the departure and arrival events in the Train Event data are aligned sequentially by timestamps, trains appear to jump to locations out of sequence. DuPont included Attachment No. 3 to Exhibit III-C-1 demonstrating this issue with Train {{ }}, where on two occasions this train arrives at a station after the NS data shows it at already departed from the station.. This is not a single isolated example Almost all train event records produced by NS show this mismatch in train departure and arrival data

NS states that it, "collected this data from a variety of sources and compiled it to the best of its ability. Thus, the fact that certain arrivals and departures are not in synch is attributable to the fact that the data was collected from different sources because NS does not have one single source for this information."[60] NS further states, "any operating expert reviewing this data clearly would have been able to identify the issue and realize that the train did not return to a prior location in the middle of the route."[61] And most importantly it states: "this issue would have easily been remedied had DuPont not excluded the car-event data from its analysis " NS attempts to illustrate this "remedy" with a figure listing pertinent Car Event data for the same

[59] *See* NS Reply Exhibit III-C-1, p 9
[60] *Id.* p. 52
[61] *Id*

train highlighted by DuPont, and NS claims: "car-specific data could easily have been used to clarify any inconsistencies in the train sheets."[62]

NS's offered defense of its data actually serves as a condemnation of the same NS admits that it was fully aware that its train data contained timestamp data that are "not in synch," yet did not disclose this known data deficiency to DuPont. NS's assertions that any "operating expert reviewing this data clearly would have been able to identify the issue and realize that the train did not return to a prior location in the middle of the route" is particularly troubling. NS apparently believes it is incumbent on DuPont to identify faulty data knowingly provided by NS and replace it with a second-best source file The slippery slope upon which this argument rests is steep It is incumbent on NS—not DuPont—to ensure the reliability of NS's data. To suggest that DuPont's use of NS's data is inappropriate, because DuPont should have known the data was flawed, is patently absurd.

DuPont did recognize the data integrity issue on Opening, and discussed the problem and the reasonable workaround it developed NS admits that its Train Event data is flawed It faults DuPont for using the flawed data it knowingly provided without disclosing the known deficiencies If NS truly believes that "this issue would have easily been remedied had DuPont not excluded the car-event data from its analysis", and further "car-specific data could easily have been used to clarify any inconsistencies in the train sheets." then it was incumbent on NS to disclose that known problem and remedy when it provided the data NS's offer of its preferred solution to a data issue it never disclosed in Reply is classic sandbagging.

[62] *See* NS Reply Exhibit III-C-7, Figure 9

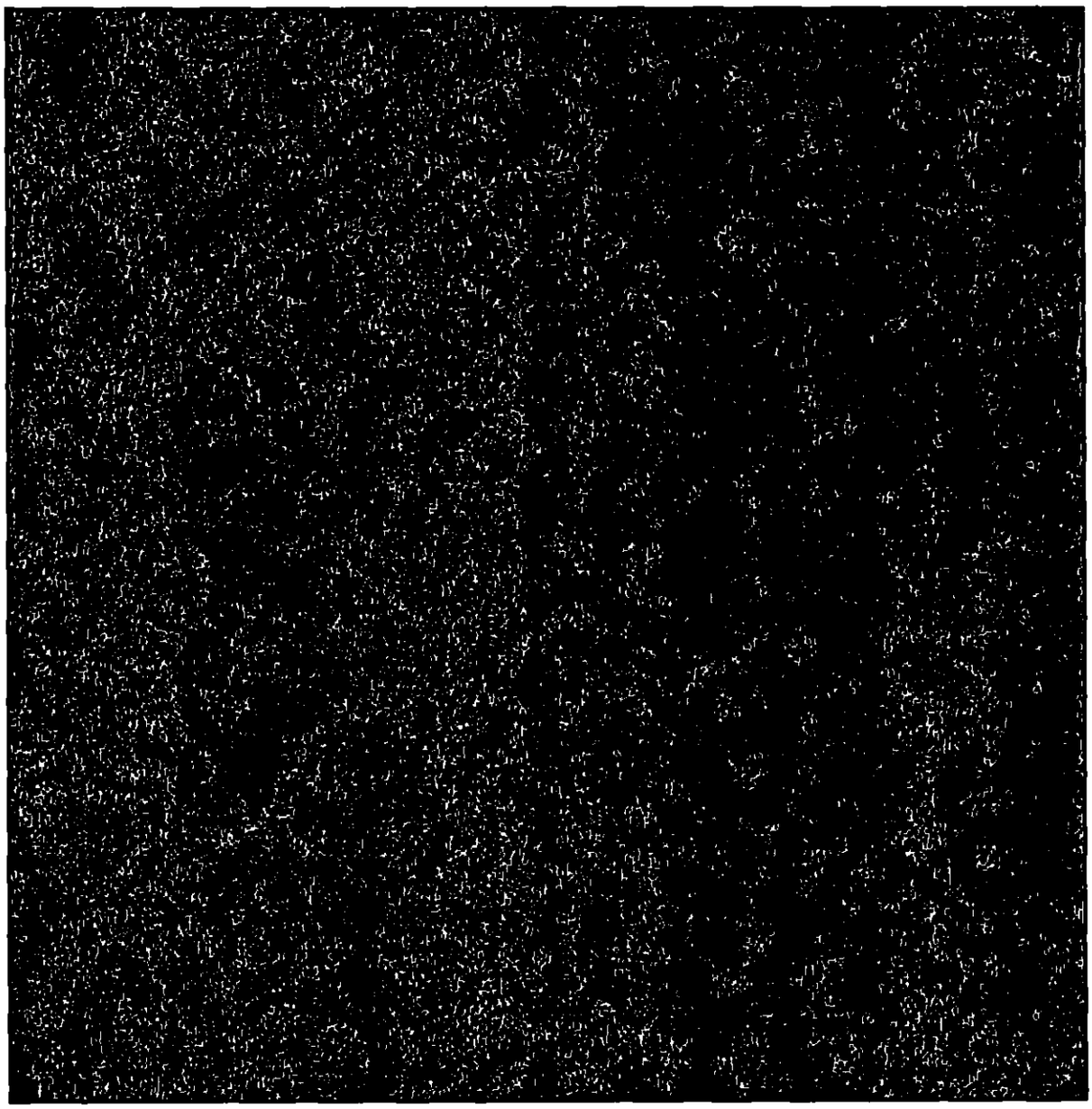
DATA SUFFICIENCY REBUTTAL

Furthermore, NS conveniently excludes the Train Event records in the figure it provides as proof that its proposed alternate data source "could easily have been used to clarify any inconsistencies in the train sheets." Car Event data cannot be used to clarify inconsistencies in the train sheets, as NS suggests. If anything, it may in some cases be used in place of train sheet data. When car and train data are evaluated together (as one would do when attempting to clarify inconsistencies), the inconsistencies persist or are magnified

A clear example of this is shown in the diagrams shown in Figures 1 and 2 below and the combined train and car event data shown in Attachment No 1 to this Rebuttal Exhibit. Figure 1 below depicts the routing for a train moving into the {{ }} area based on Train Event departure times. It appears that the train makes an incongruous jump around {{ }} NS's solution to this issue would be to look at combined car and train event data

DATA SUFFICIENCY REBUTTAL

Figure 1
Plot of Partial Route of Train {{[redacted]}}
Based on Departure Train Events



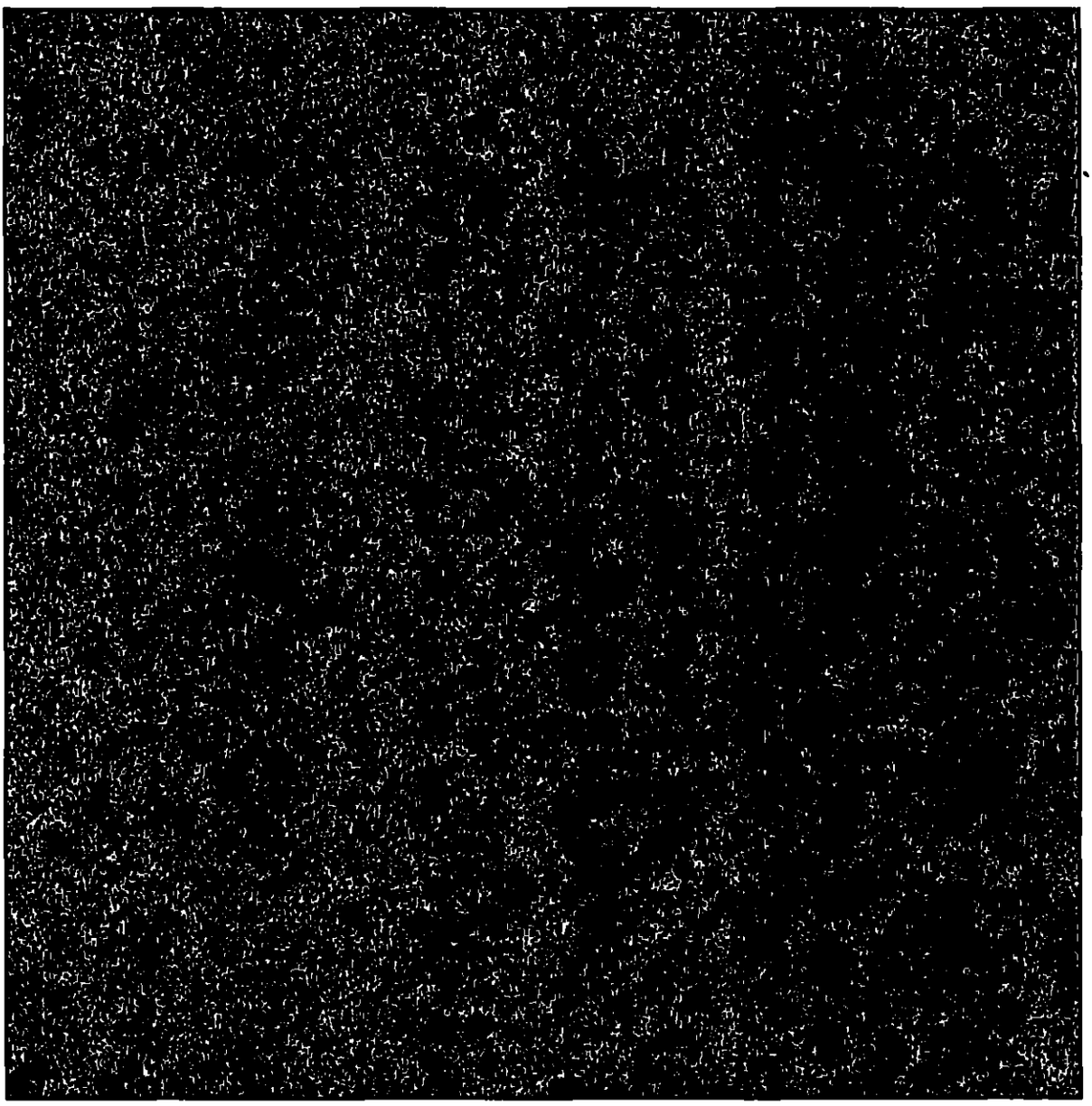
DATA SUFFICIENCY REBUTTAL

The jump shown in Figure 1 above required additional investigation to determine if this was the train's true routing, or the manifestation of more flawed NS data.

NS's proffered solution to this discontinuous train event was to use combined car and train event data arrival and departure information, which is shown in Attachment No. 1 to this Exhibit and shown graphically in Figure 2 below. But note that when both car and train event data are combined for this train, the route of movement becomes even more muddled

DATA SUFFICIENCY REBUTTAL

Figure 2
Plot of Partial Route of Train {{[redacted]}}
Based on Departure Train Events Merged with Car Events

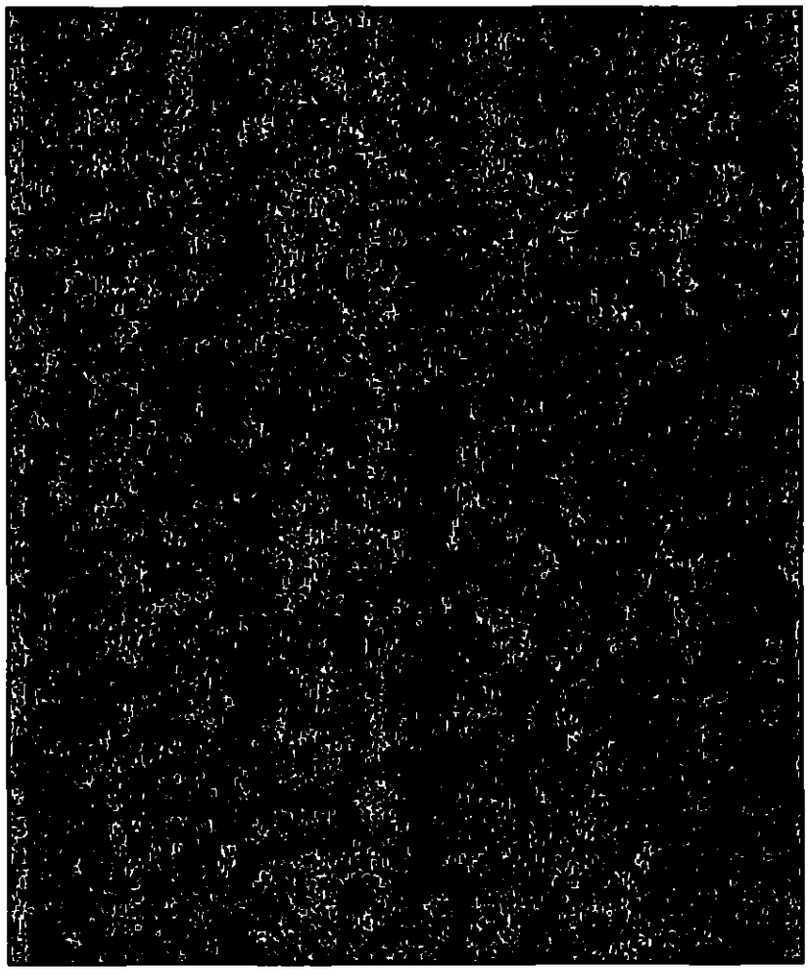


As shown in Figure 2 above, the combination of car and train event data provides no usable information on the true routing of this train.

DATA SUFFICIENCY REBUTTAL

Another example of the flaws in the use of combined car and train event data is shown in Figures 3 and 4 below and Attachment No. 2 to this Exhibit. Figure 3 displays the route of a coal train based on departure times reported along the train's route.

Figure 3
Plot of Partial Route of Train {{[redacted]}}
Based on Departure Train Events

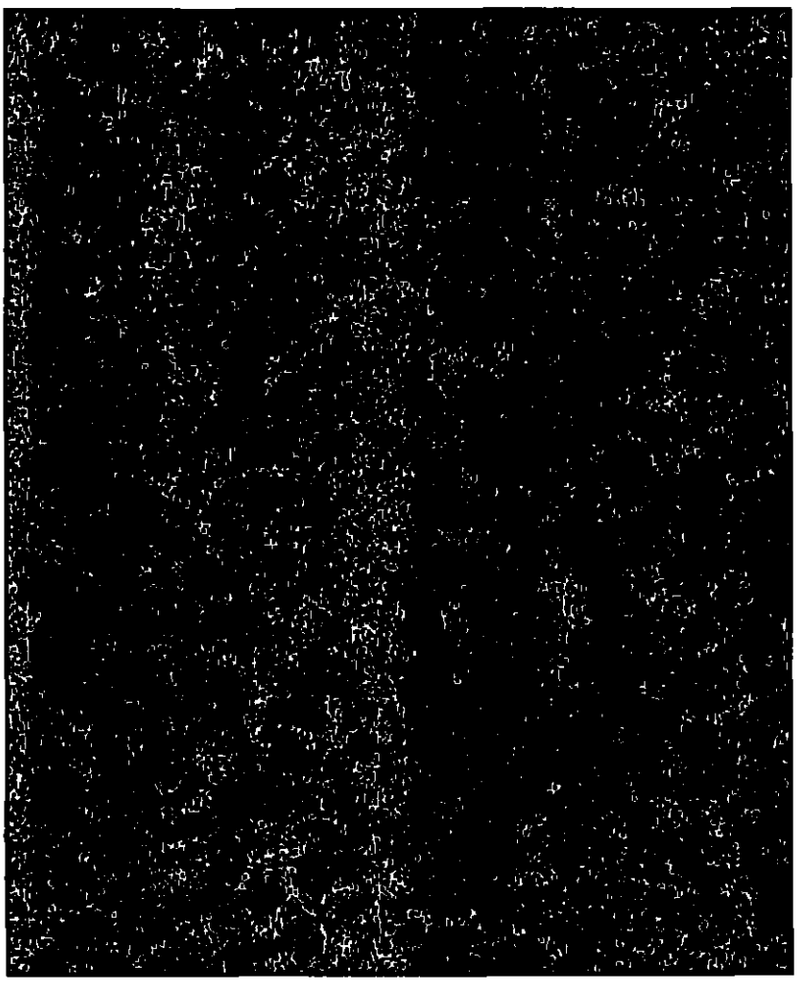


As shown in Figure 3 above, when looking at departure times, this train moves through five (5) different stations in {{[redacted]}} on the way to the {{[redacted]}}.

DATA SUFFICIENCY REBUTTAL

However, when car and train departure and arrival times are compiled, the route shows no semblance of logic as shown in Figure 4 below

Figure 4
Plot of Partial Route of Train {{[redacted]}}
Based Departure and Arrival Events

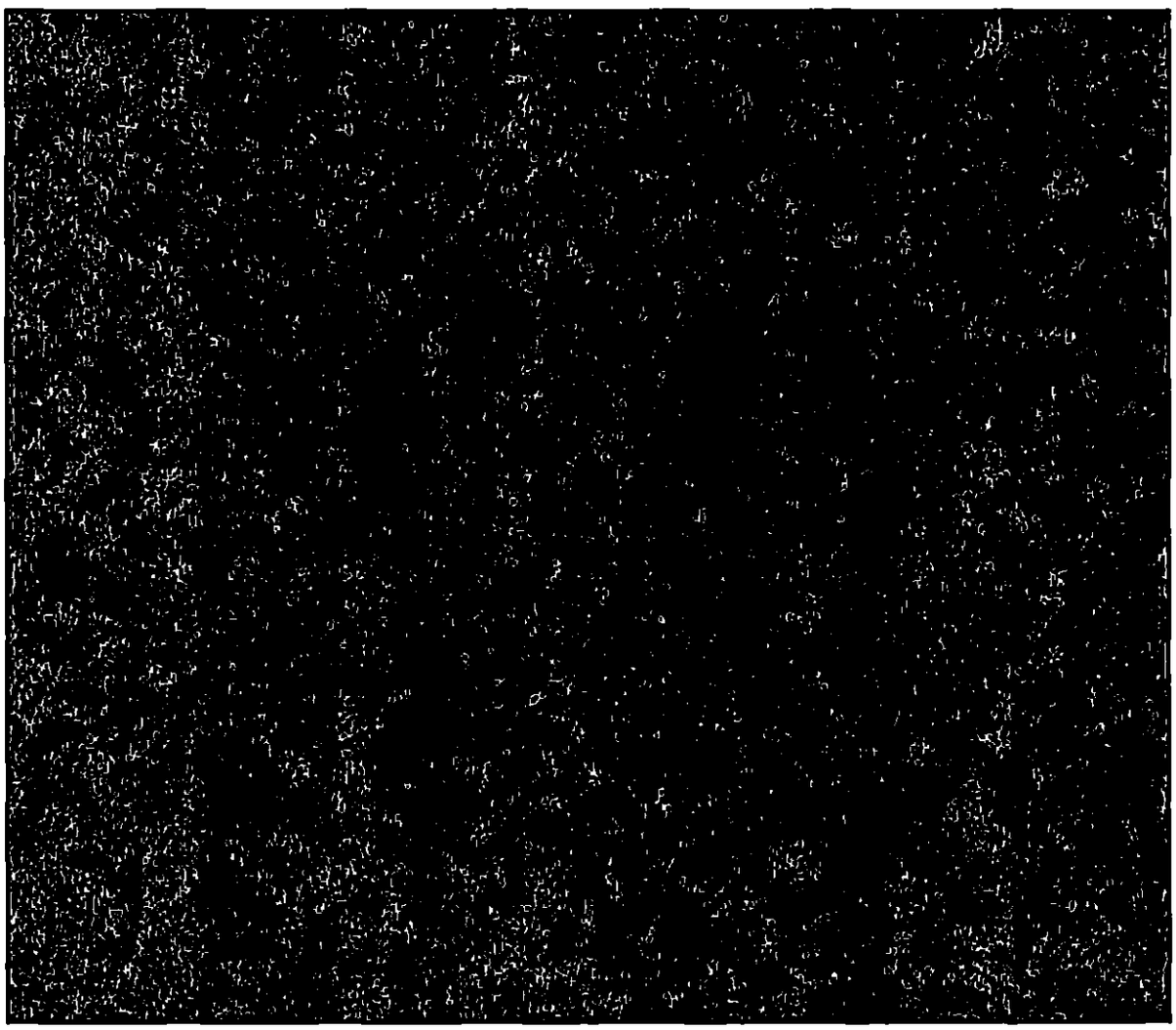


As Figure 4 above shows and Attachment No. 2 details, this train's movements, when considering combined car and train movement arrival and departure events produces an unusual train routing with near impossible speeds to achieve.

DATA SUFFICIENCY REBUTTAL

Finally, Figures 5 and 6 demonstrate the flaws in combined car and train event data with an empty coal train in 2010. Figure 5 below shows the movements of an empty coal train from {{ }} based on reported departure events.

Figure 5
Plot of Partial Route of Train {{ }}
Based on Departure Train Events



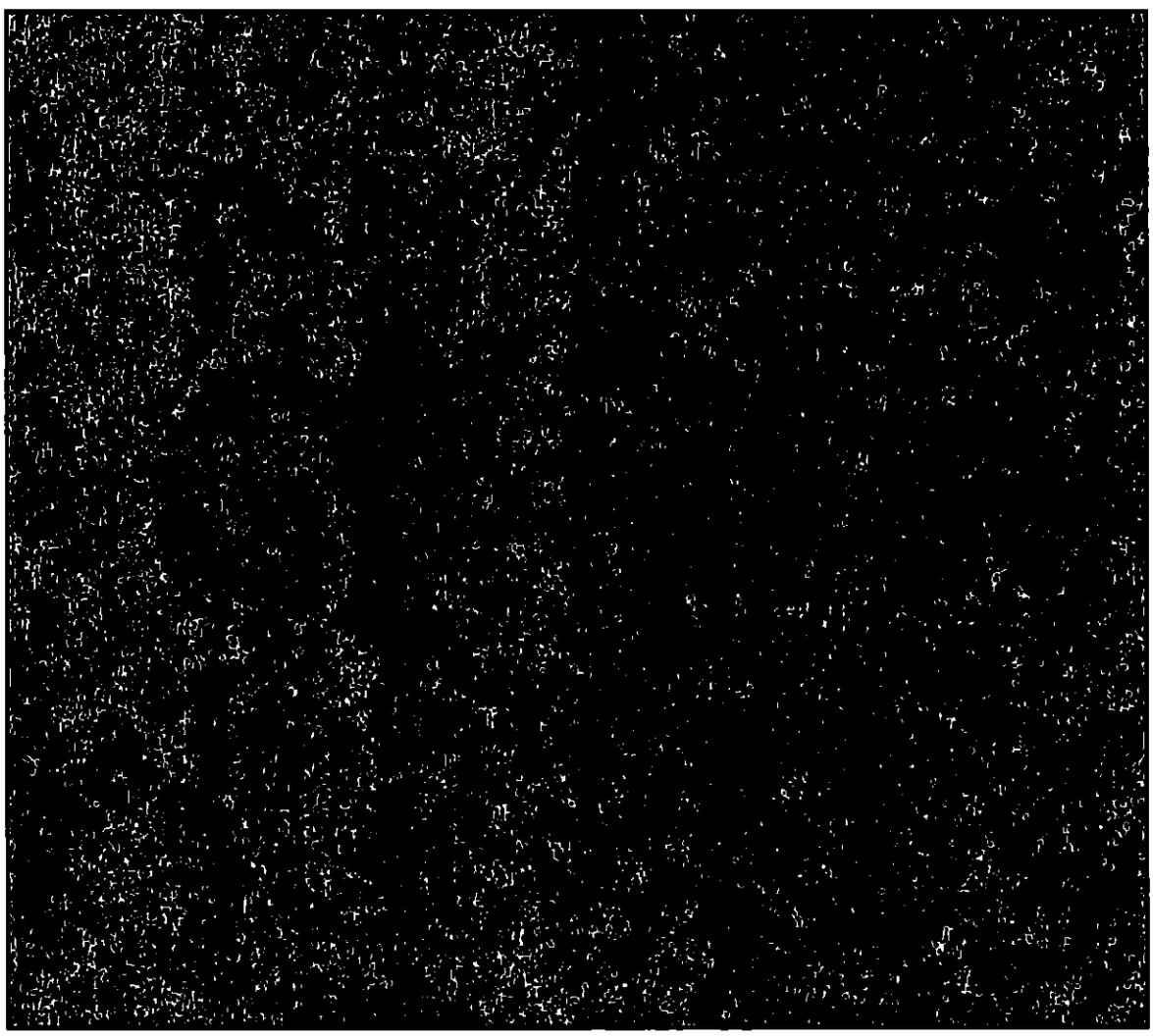
As shown in Figure 5 above, this train departs {{ }}

However, it is not possible to tell any dwell time in route for this movement. To do this requires

DATA SUFFICIENCY REBUTTAL

the combination of car and train event data, which is summarized in Attachment No 3 to this Exhibit and graphically displayed in Figure 6 below

Figure 6
Plot of Partial Route of Train {{[redacted]}}
Based on Departure Train Events merged with Car Events



As illustrated in Figure 6 above, when considering Car Events along with Train Events, this train reports a very impractical and nonsensical routing.

DATA SUFFICIENCY REBUTTAL

The fact is that, despite NS's claims to the contrary, car event data cannot be used to supplement train event data because combining the two data sources produces illogical results In reality, NS's position is that, (1) it knowingly provided faulty and deficient train event data, (2) it was under no obligation to disclose the known deficiencies to DuPont, (3) the deficiencies should have been clear and obvious to DuPont's experts; and (4) DuPont should have known it was supposed to ignore the provided train event data and replace it with car event data that does not include location data at a level of granularity that is required to model operations

DuPont also explained, in Exhibit III-C-1, that it was hampered in modeling local trains, especially local turn trains, and pick-up and set-outs because of the inconsistencies and flaws in NS's data NS latches onto these inconsistencies to claim that DuPont did not model these services. NS is wrong. As DuPont explains in more detail in its Rebuttal narrative, it did model local service and pick-up and set out services where warranted and justified based on the useable data mined by DuPont In its Rebuttal RTC model, DuPont has updated its model to include stops along the local train for local turn trains and changes in consist sizes for all trains in direct response to NS's criticisms However, to do this, DuPont had to once again spend considerable time and effort to scrutinize NS data and to tease out the useable from the unusable DuPont continues to have grave concerns about NS's data and its efficacy, but updated its models to be conservative and to address NS's Reply.

8. Missing and Truncated Event Data

DuPont explained in its Opening Exhibit III-C-1 that truncated and missing train event data lead to issues with the routing of trains and scheduling train arrival and departure times. NS

DATA SUFFICIENCY REBUTTAL

claims that DuPont did not need train event data to determine routing and that it could have used waybill data and car event data to develop routes. NS is wrong for several reasons.

First, as discussed and shown graphically above, combing train and car event data in an attempt to determine train routes leads to illogical results Second, the railroads have previously stated that waybill and train event data cannot be reasonably combined. This issue of the inability to combine waybill and train event data was first raised in the *AEPCO* by the defendant railroad and the same consultants used in this proceeding. In *AEPCO*, the shipper in the case attempted to link train event and waybill data based on a perceived flaw in the two datasets. [63]

The two railroads in the *AEPCO* case, the BNSF and UP, dismissed this effort to link waybill and train event data stating that one cannot reasonably link the two because they contain different information·

> The two databases [train event and waybill], however, contain different sets of information used for different purposes. .BNSF personnel do not, in the ordinary course of business, utilize the two data sets together or even attempt to correlate information in one database with information in the other database. [64]

Since *AEPCO*, shippers have not attempted to link waybill and train event data, because the railroads have clearly stated that they contain different data sets; yet this is what NS now claims DuPont should have done in this case. Waybill data may show origin and destination information, but it is silent on specific routing of movements and therefore is nearly useless when attempting to determine routing for specific trains. There is simply no merit to NS's claim that DuPont should have combined train event and waybill data.

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[63] *See AEPCO* November 2003 decision, p 3 "[t]hat is because AEPCO had improperly adjusted the traffic data that it had obtained in discovery to conform to what it viewed as inconsistent train movement data also obtained in discovery."

[64] *See* BNSF Reply Evidence in *AEPCO*, May 27, 2003 (Public Version), p III-A-7

DATA SUFFICIENCY REBUTTAL

In addition to explaining the issues with truncated data, DuPont included some examples of the issues with the truncated data. NS dismissed the examples as "laughable," but it is NS's misunderstanding of SAC requirements that is laughable When identifying the routing for trains in SAC cases, especially for trains that a shipper may input into its RTC capacity analysis, it is critical that routings for individual trains are known A shipper may impute routings for an individual train where the data is truncated, as is the case here, but runs the risk of using an improper routing for that particular train.

This is especially true for the Georgia Power trains included in DuPont's Opening Exhibit III-C-1 example since the utility has several plants in the area served by the DRR, and has a history of diverting trains en route from one plant to another. The TRN symbol indicated in the example may indicate a movement to Georgia Power's Scherer generating station, but there is no guarantee that Scherer is the train's actual final destination Defendant railroads have repeatedly criticized shippers for routing trains different from their real world counterparts [65] Apparently, NS is stating that DuPont should have routed these trains according to their schedule regardless of where their true world counterparts moved.

DuPont also explained in its Rebuttal III-C-1 that it had to make certain allowances for an inability to definitively identify each train's origin and destination. NS said this was "ludicrous" since DuPont should have based its operating plan on waybill data and not what it called "historic" NS trains. Once again, it is NS's Reply response that is ludicrous As explained in great detail in DuPont's Rebuttal III-C narrative, NS ignored real world operations in developing its operating plan, and instead delved into a make-believe world using its MultiRail program to

[65] *See*, e g , *TMPA*, p 591 and *Duke/NS*, p. 113

develop factious trains Moreover. NS's claim that DuPont did not need train event data to model peak period coal trains directly contradicts its testimony in the *Duke/NS* and *CP&L* cases. where it stated the shipper was wrong for modeling trains that did not match real world NS trains.[66]

Finally. DuPont stated that the truncated data did not allow it to link coal trains at origin and destinations. NS alleges that DuPont was disingenuous with this fact because it is the RTC model that determines when trains arrive and depart. not real world arrival and departure times. To paraphrase retired U.S. Army Lieutenant General Russell L. Honoré. NS's response is "stuck on stupid."[67] The RTC model is a deterministic model that dispatches trains based on data input by the user. For certain trains. especially coal unit trains. departure times from a particular location are a function of their arrival time at that location. or, in other words, a train cannot depart before it arrives at a station. To keep from having the RTC model dispatch an empty coal train from a generating station before its loaded antecedent arrives. users have linked arrival and departure times for these unit trains To do this requires identifying which loaded and empty trains can be linked from the train event data. In this case. this was not possible due to truncated NS data. NS and its experts. as license holders of the RTC model. should have understood this basic fact

9. Inconsistent and Missing Train Statistics

DuPont reported in Opening that train statistics are missing on 93.7 percent of the Train Events records. and that 17 percent of identified trains had no statistics reported in Train Events. DuPont worked around this by using several methods: use of average train statistics for certain

[66] *See Duke/NS*, p 117 and *CP&L*, p 255
[67] *See* http://en wikipedia org/wiki/Russel_L._Honor%C3%A9

train symbols where available, use of averages for train symbol based on base year train event data and use of train statistics derived from car event data [68]

NS explains, "The four fields it evaluated – loaded cars, empty cars, tons, and length – are not typically included in most train event records because they are not collected at such a granular level."[69] They further state that "the car event data identifies which cars were on which train", and "The car event data and waybill records reflect changes in the data sets DuPont sought to evaluate and make it obvious that these were the records that should be relied upon to derive these calculations."[70]

Here DuPont is not familiar with NS data collection methods However, a competent data analyst / database administrator would recognize that data sets should be factored separately if they are not collected at the same granularity (thus having different reference points or primary / foreign relationships). The fact that NS reports train statistics at the Train Events level implies that this is the proper place to summarize such. Lacking the proper segregation of disparate data, and lacking proper documentation of train statistics in discovery, NS cannot fault DuPont for the assumptions it made in this regard

DuPont also identified many instances where maximum train lengths were clearly incorrect. For example, DuPont identified in Table 1 of Exhibit III-C-1 trains that NS data shows

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[68] For certain analyses early in the evidentiary process before DuPont had compiled all of its car event data and train event data, it used average statistics by train symbol. This was required because the development of evidence in a SAC case is not directly linear If a shipper attempted to develop evidence in a linear manner, it would take the shipper years to develop opening evidence In this case, DuPont used averages by train symbol where actual train statistics are not available in the train event data early in the train identification process and RTC input process Later, after DuPont had compiled all of its car event data, it used this data to finalize its evidence

[69] *See* NS Reply Exhibit III-C-7, p 59.

[70] *Id*

are over 10 miles in length. To correct these issues, DuPont sequenced the anomalies with the worst case at the top of the list.

In Reply, NS states:

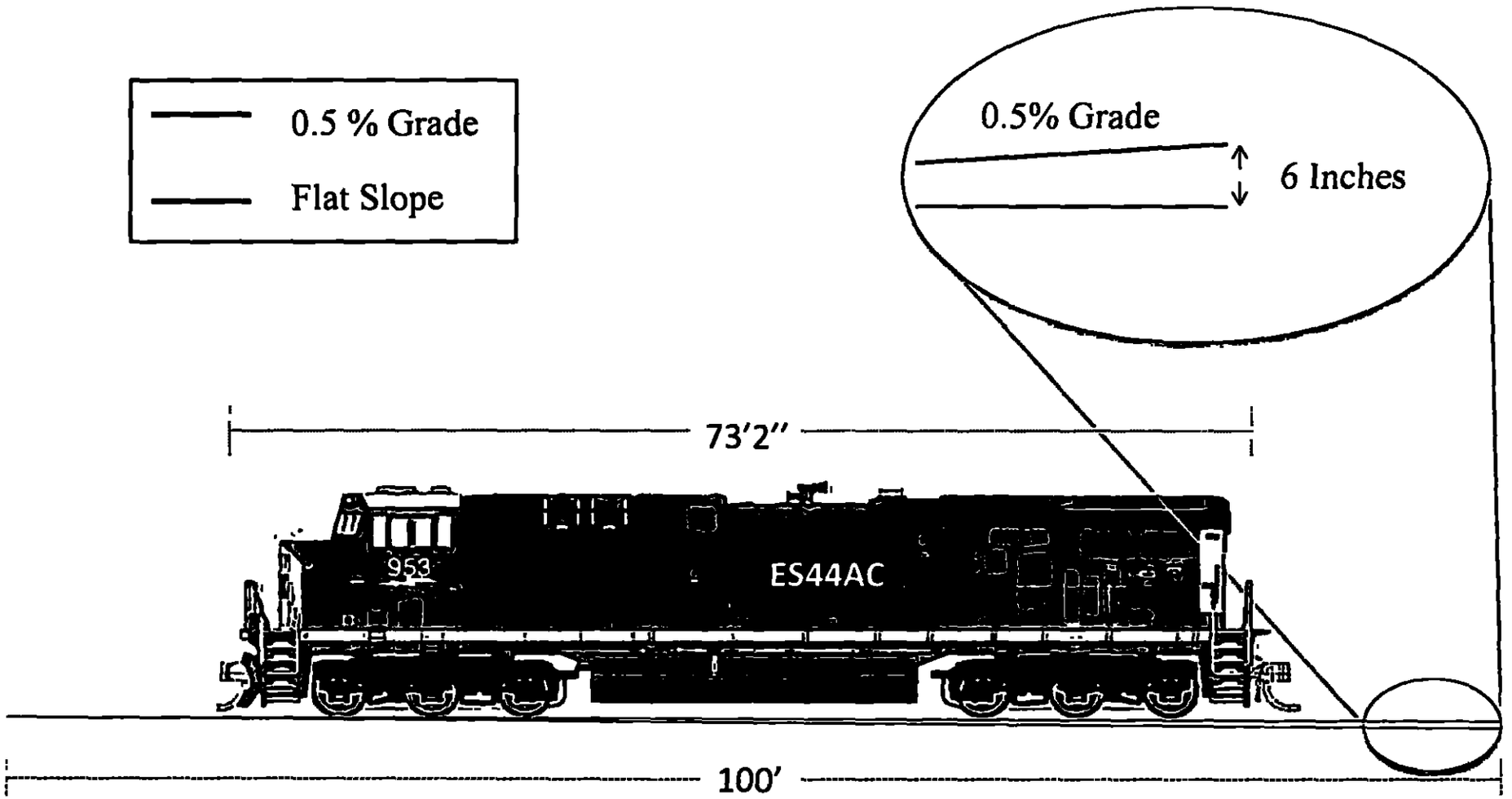
> DuPont's methodology for attempting to discern maximum train lengths from the NS data was designed to find the extreme anomalies in the data DuPont searched for the few trains in the 34 million train event records that contained a data anomaly resulting from an erroneous aggregation of data or human error.[71]

By its reply, NS acknowledges the scope of effort required to deal with this issue (34 million train events to analyze). The methodology employed by DuPont was to sequence the data from longest to shortest trains, thus highlighting erroneous records first. This methodology allowed DuPont to manually work through and correct data errors. In Opening DuPont presented the top ten items from its working list simply to highlight significant errors in NS' discovery data, and the significant effort it took to accommodate those errors As discussed above, DuPont ultimately relied upon a combination of corrected train event data and NS car event data to estimate train sizes However, this does not belie the fact that DuPont had to spend additional time and expenses dealing with flawed NS that only served to muddy the waters.

[71] *Id.* p 60

TAB 2

A Visual Representation of 65% of the Grade Errors Claimed by NS (0.5% or less)



PART III-D

TAB 1

GENERAL & ADMINISTRATIVE EXPENSE

On Opening, DuPont included $57.6 million for general and administrative ("G&A") costs, including costs related to personnel, materials and supplies, and the outsourcing of various activities. DuPont's Opening Evidence organized the DRR's 213 G&A personnel into five (5) separate Departments responsible for the railroad's principal staff functions.[1] Those included an Executive Department, a Marketing and Customer Service Department, a Finance/Accounting Department, a Legal & Administrative Department (which also is responsible for the Human Resource functions), and an Information Technology Department.

In Reply, NS proposes to more than *triple* the G&A staffing level that DuPont proposed on Opening to a staggering level of 825 personnel. This 825-level G&A staffing is the largest staffing level ever proposed by a carrier in a SAC case, and reflects repeated instances in which NS has argued for the inclusion of personnel that the STB has rejected in prior cases. NS fails to recognize the fact that the DRR is a new, startup railroad operation, and not an existing railroad that was established through mergers and acquisitions, such as NS.

On the basis of its enormous staffing proposal, NS argues that 2009 G&A expenses for the DRR should be increased to a level that is 298 percent of DuPont's estimate (*i.e.*, $172.2 million). The $114.6 million disparity between the parties' estimates amounts to more than nine (9) percent of the total 2009 operating cost difference between the parties' Opening and Reply evidence.

NS's position on G&A expenses is based on the flawed premise that the DRR must operate in a fashion similar to that of NS itself or other Class I railroads. NS states that "DuPont's G&A staffing evidence contains no references whatsoever to staffing levels or G&A

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[1] *See* DuPont Opening, pp. III-D-13-17.

expense benchmarks at NS or any other real-world railroad."[2] NS also claims that "NS's own G&A spending" is "the best evidence" of what the DRR would need to spend.[3] Such a view is directly contrary to the entire purpose of the Stand-Alone Cost constraint. As long as the SARR meets the needs of the traffic group, the SARR can be designed "in a manner that is different from, and more efficient than, the incumbent carrier's service."[4]

The difference in the parties' evidence regarding G&A staffing levels relates to NS's inclusion of an excessive number of employees in each department, including an additional twelve (12) employees in the Executive Department, an additional 223 employees in the Finance and Accounting Department, an additional 190 employees in the Law and Administration Department, an additional 155 employees in the Marketing and Customer Service Department, and an additional 32 employees in the IT department, for a total increase in staffing from 213 employees to 825 employees (a 612-employee proposed increase). Additional differences also exist between the parties with respect to the costs associated with outsourcing. Finally, there are significant differences between the parties regarding the amount and proper accounting treatment of start-up costs.

The overall annual G&A expense estimates provided by the parties, including G&A compensation, outsourcing, and materials and supplies, are shown in Table 1 below.

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2 *See* NS Reply, p. III-D-48.
3 *See* NS Reply, p. III-D-75.
4 *See McCarty Farms*, p. 468. *See* also *AEPCO,* p. 10 ("complainants are permitted to propose a hypothetical SARR that would provide service in a different way and would use rail configurations different from the actual operations of the defendant railroad").

GENERAL & ADMINISTRATIVE EXPENSE

Rebuttal Exhibit III-D-1
Table 1
DuPont Opening, NS Reply and DuPont Rebuttal 2010 G&A Expense
($ in millions)

Source	2010 G&A Expense
(1)	(2)
1. DuPont Opening	$57.6
2. NS Reply	$172.1
3. DuPont Rebuttal	$77.4

Source: DuPont Rebuttal e-workpaper "DRR Operating Expense_Rebuttal.xlsx."

DuPont's Rebuttal costs reflect the addition of 24 G&A positions on Rebuttal.

In each of its decisions in *Duke/NS*, *Duke/CSXT*, and *CP&L*, the Board accepted the complainant's G&A expenses on the basis of its observation that the complainant's G&A staffing levels "are based on the experience of former senior-level railroad employees, [and] are reasonable and supported . . ."[5]

DuPont's Opening and Rebuttal G&A evidence likewise is sponsored by four witnesses who have considerable expertise in matters relating to both operating and G&A expenses, and collectively have spent many years working for Class I and other railroads in positions of significant responsibility. DuPont's principal witness, Richard McDonald, has 35 years of experience in railroad operations, engineering, and management, largely with C&NW, as well as the New York Central. DuPont witness Gary Hunter, who worked with Mr. McDonald in evaluating NS's Reply G&A evidence and in preparing DuPont's Rebuttal evidence, likewise has substantial experience, 36 years, in senior management positions at the Southern Pacific and

[5] *See Duke/NS* at 156; *Duke/CSXT* at 459; *CP&L* at 269. Similarly, in *PSCo/Xcel*, the Board characterized the complainant's evidence on G&A staffing levels as "feasible," as it was "supported by testimony from senior-level railroad employees." *PSCo/Xcel*, p. 648.

GENERAL & ADMINISTRATIVE EXPENSE

Western Pacific Railroads and with several regional railroads. Mr. Hunter has been involved in several railroad mergers, including UP/MKT, SP/DRGW and KCS's acquisition of its Mexican franchise, in which his work involved operations, marketing/traffic and organization/personnel. More recently, Mr. Hunter has worked extensively with BNSF in the areas of operations equipment, marketing/traffic and organization/personnel, and his projects have included analysis of large regional railroads and short-line holding companies in these same areas.

DuPont's other two (2) G&A witnesses include Joseph Kruzich, who has 38 years of experience in railroad accounting, executive administration, and information technology, including service as Vice President Telecommunications and Chief Information Officer of the Kansas City Southern Railway, and Philip Burris, a Senior Vice President of L.E. Peabody & Associates, Inc. with more than 30 years of consulting experience with regard to railroad economics. Mr. Burris, developed DuPont's Opening and Rebuttal evidence regarding compensation levels for G&A personnel, material and supplies expenses, and non-Operating personnel training and recruiting costs.

In light of this wealth of real-world experience, DuPont's G&A evidence is well-supported. It is also consistent with recent Board decisions in SAC rate cases.

A. STAFFING

The DRR consists of 7,200 miles of track and 800 miles of trackage rights for a total of 8,000 miles. DRR's G&A cost totals are very similar to those of former Class I railroads of similar size. Table 2 below shows the similarities between DRR's G&A personnel and that of former Class I railroads of similar size.

GENERAL & ADMINISTRATIVE EXPENSE

Rebuttal Exhibit III-D-1
Table 2
Comparison of DRR G&A Staffing With Similar Size Class I Railroads

Railroad	Operating Miles	G&A Personnel
(1)	(2)	(3)
1. DRR (DuPont)	8,111	237
2. DRR (NS)	8,112	825
3. C&NW	8,256	207
4. NW	7,803	200
5. ICG	7,963	218
6. SOU	10,057	272

Source: Rebuttal e-workpaper "G&A Staffing – small Class I carriers.pdf."

Today, with even better technology and more efficient operations, Class I railroads can be operated with even fewer personnel. Many of a railroad's administrative functions have been simplified and require fewer personnel than 30 years ago. The integrated online systems have allowed customers to access rates, equipment, and rail shipments without needing to speak with a railroad representative.

In many areas, third parties or consultants are used to supplement any area that might need additional personnel or someone specialized to the point where it is more economical to outsource than to have a person on staff. This is determined as the need arises, as opposed to in the initial startup.

DuPont's principal witness, Mr. McDonald, has significant experience in dealing with an efficient, cost effective, Class I railroad, namely C&NW. The C&NW was similar in size and scope to the DRR and did not have the luxury of multiple layers of management. NS experts testifying in this case are knowledgeable railroad managers, but their experience is limited to that

of a railroad almost three times the size of DRR. C&NW operated effectively by depending on each individual assigned to a required task, rather than the NS philosophy of assigning additional layers of management to serve as "watchdogs." In Mr. McDonald's experience with the former Penn Central, now a part of NS, this created an atmosphere of distrust among employees and an inefficiency which added significantly to the cost of doing business. The following table shows just how similar C&NW and DuPont's G&A staffing are, as well as how excessive and unnecessary NS's G&A staffing is:

Rebuttal Exhibit III-D-1
Table 3
Comparison of C&NW G&A Staffing
With DuPont and NS

Department	1993 C&NW[1/]	DuPont Rebuttal	NS Reply
(1)	(2)	(3)	(4)
1. Executive	4	3	14
2. Finance & Accounting	29	34	81
3. Marketing	89	56	137
4. Law & Admin	37	27	64
5. IT	6	13	22
6. Subtotal	165	133	318
7. Non-managerial	-	97	502
8. Total (excludes Directors)	165	230	820

Source: Rebuttal workpaper "C&NW G&A 1993.pdf."
[1/] The Official Railway Guide is the source for the C&NW staffing shown in Table 3. The Guide does not show administrative assistants and clerks as a result, these positions are removed from the sub-total line from both column (3) and column (4) of Table 3. In addition, if an individual has two titles, the Railway Guide lists that individual twice. The personnel counts in Table 3 eliminate duplication of individual employees.

DuPont witness Gary Hunter also has substantial experience in senior management railroad positions. During his time at Western Pacific ("WP"), which was a small Class I railroad with nearly 1,500 miles of track, WP operated in California, Nevada, and Utah and

varied terrain, including valley lands, mountains, and desert territories. For WP to compete, it had to be operated on a lean and cost effective basis. WP competed with larger railroads such as Southern Pacific Railroad and Santa Fe Railway. WP did not have the luxury of having excess personnel on staff so the key people had to fill many roles. Mr. Hunter served as Regional Trainmaster and had many different duties, including handling customer calls, marketing, sales and business development, public relations, and working with local government and economic development agencies, as well as chambers of commerce.

WP operated and ran in a very cost effective and efficient manner; utilizing a limited amount of staff. There is no reason DRR cannot operate in the same manner as that of WP. Modern railroads must be lean in order to be competitive in the market. As a new railroad, DRR does not have the personnel burden that mergers cause and that have plagued the rail industry for years. DRR is a model for today's railroading which NS failed to recognize in its Reply.

NS attempts to justify its proposal to more than triple the DRR's G&A staffing by "benchmarking" the DRR against: 1) allegedly comparable companies, particularly large Class I railroads such as CSXT, UP, and BNSF; 2) third party benchmarking studies where such studies were available; and 3) NS's real-world G&A staffing and spending. The fact is, however, that there is no existing railroad or railroad holding company that is remotely comparable to the DRR. Unlike its supposed "peers," the DRR is a brand-new, start-up operation that does not have collective bargaining agreements, is not a product of mergers, and is able to take full advantage of current, state-of-the-art technology rather than gradually installing technology to replace human staff. Also, unlike the railroads NS seeks to compare with the DRR, a majority of

the DRR's traffic is overhead traffic which means the originating/terminating railroads perform a greater share of the marketing effort.

DuPont rejects the management reconfiguration and most of the additional staffing (and additional compensation) proposed by NS for the DRR and continues to rely upon the G&A staffing that it submitted on Opening, with the exception of the following:

1. DuPont agrees that thirteen (13) additional employees are needed to staff the marketing function;
2. DuPont agrees that one (1) additional employee is needed to staff the finance/ accounting function;
3. DuPont agrees that three (3) additional employees are needed to staff the law and administration function;
4. DuPont agrees that five (5) additional employees are needed to staff the information technology (IT) function; and,
5. DuPont agrees that the DRR's ten (10) person Board of Directors should include seven (7) outside Directors.

Table 4 below compares the parties' G&A staffing proposals for the DRR, and shows the increase in staffing accepted by DuPont on Rebuttal.[6]

[6] The DRR's Mechanical Department staffing includes one (1) Manager of Testing and Environmental; the Engineering Department includes one (1) Director-Environmental Operations and one (1) Environmental Engineer; the MOW Department includes two Environmental/Safety/ Training Managers. *See* DuPont Opening Exhibit III-D-1, p. 3 and Exhibit III-D-3, p. 17. NS places its Environmental staff within G&A.

GENERAL & ADMINISTRATIVE EXPENSE

Rebuttal Exhibit III-D-1
Table 4
DuPont Opening, NS Reply and DuPont Rebuttal G&A Staffing

Position	DuPont Opening	NS Reply	DuPont Rebuttal	Difference[1/]
(1)	(2)	(3)	(4)	(5)
A. Executive				
1. President/CEO	1	1	1	0
2. Directors of Corporate Relations	2	4	2	2
3. AVP Corporate Relations	0	1	0	1
4. Administrative Assistant	1	2	1	1
5. Managers of Corporate Relations	0	8	0	8
6. Executive Department Total	4	16	4	12
B. Marketing & Customer Service				
1. VP Traffic/Marketing	1	0	1	(1)
2. VP Marketing	0	1	0	1
3. Administrative Assistant	1	3	1	2
4. AVP Coal Marketing	0	1	0	1
5. AVP Intermodal & Automotive	0	1	0	1
6. AVP Marketing Services	0	1	0	1
7. AVP General Freight	0	1	0	1
8. AVP Interline/Short Line	0	1	0	1
9. AVP Customer Service	0	1	0	1
10. Directors	0	7	0	7
11. Director Marketing and Sales	1	0	2	(2)
12. Managers Marketing	18	4	17	(13)
13. Managers	0	98	0	98
14. Planning Managers	0	7	0	7
15. Field Sales Personnel	0	0	6	(6)
16. Manager of Industrial Development	0	0	2	(2)
17. Manager of Marketing Admin.	0	0	1	(1)
18. Manager of Interline Development	0	0	1	(1)
19. Manager of Car Management	0	0	2	(2)
20. Director of Car Management	0	0	1	(1)
21. Marketing Services Analysts	0	12	0	12
22. Analysts	0	2	0	2
23. Customer Service Directors	1	3	1	2
24. Customer Service Managers	28	11	28	(17)
25. Customer Service Reps	0	51	0	51
26. Marketing Department Total	50	205	63	142
C. Finance & Accounting				
1. Executive/Treasury Function				
a. VP Finance & Accounting/CFO	1	1	1	0
b. Administrative Assistant	1	1	1	0
c. Treasurer	1	1	1	0
d. Assistant Treasurer	1	0	1	(1)
e. Cash Manager	1	0	1	(1)
f. Director	0	3	0	3

GENERAL & ADMINISTRATIVE EXPENSE

Rebuttal Exhibit III-D-1
Table 4
DuPont Opening, NS Reply and DuPont Rebuttal G&A Staffing

Position	DuPont Opening	NS Reply	DuPont Rebuttal	Difference[1/]
(1)	(2)	(3)	(4)	(5)
g. Managers	0	8	0	8
2. Controller Function				
a. Controller	1	1	1	0
b. Administrative Assistant	0	1	0	1
c. Asst. Controller – Revenue	1	1	1	0
d. Revenue Analysts/Clerks	2	174	2	172
e. Directors	0	3	0	3
f. Revenue Accounting Mgrs.	2	17	2	15
g. Mgr. Rail Billing & Collections	3	0	3	(3)
h. Customer Billing & Collections Specialists	14	0	14	(14)
i. Asst. Controller – Disbursements	1	1	1	0
j. Analyst/Clerk	0	4	0	4
k. Manager – Accounts Payable	1	3	1	2
l. Director - Accounts Payable	0	1	0	1
m. Accounts Payable Clerical Staff	4	10	4	6
n. Payroll Manager	1	1	1	0
o. Asst. Controller – Taxes	1	1	1	0
p. Director	0	2	0	2
q. Tax Managers	0	5	0	5
r. Tax Attorney	0	1	0	1
s. Tax Accountants	4	9	4	5
t. Director Property Accounting	0	1	0	1
u. Manager Property Accounting	3	3	3	0
v. Asst. Controller – Financial Reporting	1	1	1	0
w. Managers Financial Reporting	0	3	0	3
x. Analyst/Clerk	2	0	2	(2)
y. Staff Accountants	2	5	2	3
3. Budget/Purchasing Function				
a. AVP Purchasing	0	1	0	1
b. Director of Budgets	1	0	1	(1)
c. Manager of Budgets	1	0	1	(1)
d. Mgr. of Equipment Accounting	2	0	2	(2)
e. Mgr. Car Accounting	2	0	2	(2)
f. Car Accounting Analysts	2	0	2	(2)
g. Director Expenditure Recovery	1	0	1	(1)
h. Expenditure Recovery Mgrs.	2	0	2	(2)
i. Director of Cost & Econ. Analysis	1	0	1	(1)
j. Manager of Cost & Econ. Analysis	2	0	2	(2)
k. Director Purchasing	1	4	1	3
l. Managers Purchasing	0	11	0	11
m. Director Economics and Planning	0	1	0	1
n. Managers	0	4	0	4
o. Analysts	0	3	0	3
p. Buyers	2	0	2	(2)

GENERAL & ADMINISTRATIVE EXPENSE

Rebuttal Exhibit III-D-1
Table 4
DuPont Opening, NS Reply and DuPont Rebuttal G&A Staffing

Position	DuPont Opening	NS Reply	DuPont Rebuttal	Difference[1/]
(1)	(2)	(3)	(4)	(5)
q. Manager of Financial Planning	0	0	1	(1)
4. Internal Auditing Function				
a. AVP Internal Audit	0	1	0	1
b. Director of Internal Auditing	1	0	1	(1)
c. Manager Internal Audit	0	1	0	1
d. Manager Risk Mgmt. & Ins.	0	1	0	1
5. Finance & Accounting Dept. Total	66	289	67	222
D. Legal & Administration				
1. Legal Function				
a. Vice President Law	1	1	1	0
b. Administrative Assistant	1	2	1	1
c. AVP Law	0	1	0	1
d. General Solicitors	3	0	3	(3)
e. General Attorneys	3	6	3	3
f. Paralegals	3	3	3	0
2. Claims Function				
a. Director of Claims	1	1	1	0
b. Manager – Claims	2	3	2	1
c. Claims Agent	0	20	0	20
3. Environmental Function				
a. AVP Asset Protection	0	1	0	1
b. Administrative Assistant	0	1	0	1
c. Director Environmental	0	1	0	1
d. Environmental Managers	0	5	0	5
e. Engineers	0	17	0	17
4. Real Estate				
a. Directors-Real Estate	2	2	2	0
b. Managers-Real Estate	2	2	2	0
c. Real Estate Attorney	1	1	1	0
d. Managers-Development	0	4	0	4
e. Administrative Assistant	0	0	1	(1)
5. Security Function				
a. Police Chief	1	1	1	0
b. Administrative Assistant	0	1	1	0
c. District Commanders	2	3	2	1
d. Special Agents	12	114	12	102
e. Manager Communications Center	0	2	0	2
f. Communications Center Staff	0	9	0	9
6. Human Resources Function				
a. AVP Human Resources	0	1	0	1
b. Director of Human Resources	1	6	1	5
c. Administrative Assistant	0	1	0	1
d. Compensation & Benefits Mgr.	1	0	1	(1)

GENERAL & ADMINISTRATIVE EXPENSE

Rebuttal Exhibit III-D-1
Table 4
DuPont Opening, NS Reply and DuPont Rebuttal G&A Staffing

Position	DuPont Opening	NS Reply	DuPont Rebuttal	Difference[1/]
(1)	(2)	(3)	(4)	(5)
e. Manager of Compliance	2	0	2	(2)
f. Compliance/Benefits Specialists	2	0	0	0
g. HR Managers	0	23	0	23
h. Staffing & Recruiting Mgrs.	2	0	2	(2)
i. Manager of Insurance	0	0	1	(1)
j. Mgrs. of Emp. & Labor Relations	0	0	2	(2)
7. Legal & Administration Total	42	232	45	187
E. Information Technology				
1. VP of Information Technology	1	1	1	0
2. Director of IT - Transportation	1	1	1	0
3. RMI Technicians	6	7	6	1
4. Interface Support Manager	2	6	3	3
5. Director IT Security	1	1	1	0
6. Security Technician	2	3	2	1
7. Programmers/Development	7	12	7	5
8. Director of IT-Applications	1	2	1	1
9. Help Desk PC Technicians	10	17	10	7
10. Exchange 2007 Engineer	3	5	3	2
11. Programmers/PC Technicians	5	9	7	2
12. Data Base Manager	2	6	3	3
13. Server Manager	3	5	3	2
14. Network Engineers	2	3	3	0
15. IT Total	46	78	51	27
F. Total G&A Staff	208	820	230	590
1. Outside Directors	5	5	7	(2)
G. Total	**213**	**825**	**237**	**588**

Source: Column (2) e-workpaper "DRR Operating Expense_Errata.xls."
Column (3) e-workpaper "DRR Operating Expense Reply.xls."
Column (4) e-workpaper "DRR Operating Expense_Rebuttal.xlsx."
1/ Column (3) – Column (4)

1. NS's Peer Railroad Comparisons Are Irrelevant

The DRR is a startup railroad, unlike NS which has a long history and was created by numerous mergers and consolidations. The DRR is a system of major main line routes and fewer secondary or branch lines. Since the mid 1980's, the railroad industry has reduced the number of

rail miles operated by 33 percent, mainly due to mergers, consolidations, and abandonments of various rail lines. Along with this, employment has been reduced. Specifically, NS has reduced its employment by 22 percent and is likely to continue to reduce employment over time. Through the various mergers and consolidations, NS acquired many personnel, and instead of buying people out, NS is letting attrition reduce the office personnel. It is the reduction of personnel that has allowed NS to continue to compete and to increase profits.

A new railroad, like the DRR, will not have this issue and the number of employees can be based on the specific needs of the railroad. DRR is a private company that will operate with the latest technology, which will reduce the need for additional personnel. Modern railroads operate with less direct contact between customers and rail personnel, and most rates can be established online through the railroad's website, with little to no assistance from a railroad employee. It is only the higher volume customers who will need contacts within the organization, and once the rates are negotiated, there is little more to be done until the rates are to be updated or re-negotiated. The only rates that need special attention are rates for special commodities that do not have established rates in tariffs. This is a small percentage of the moves on the DRR and should not require significant time from rail personnel.

Most of the G&A departments do not need any clerical or high level exempt employees. Management or Analysts are required to do most administrative work and extra levels of personnel and bureaucracy are not necessary. A company like NS may have Vice Presidents, Assistant Vice Presidents, Directors, Managers, etc. However, most of these positions can be absorbed and eliminated or reduced in a company such as the DRR.

GENERAL & ADMINISTRATIVE EXPENSE

Railroading today is leaner on personnel and a new start up rail line will not have as many employees as a long established railroad with all of its extra personnel from mergers and consolidations that were carried on for years. The DRR can build its G&A staff based on the railroad's current operating needs without any excess personnel. Hiring qualified people is a big factor in how many employees will be needed, and DRR would exercise stringent hiring practices to ensure quality personnel. As a new start up, DRR would also benefit from the current employer's market for job hiring, which has a great deal of experienced railroad personnel available.

As briefly noted above, NS's G&A Reply evidence relies upon comparisons between the DRR and certain supposed "peer" railroads including NS, CSXT, UP, and BNSF.[7] NS's comparisons are not relevant, however, because the operations of these carriers are fundamentally different from the operations of the DRR. Notably, a substantial percentage of the traffic of the DRR (approximately 61 percent) is overhead traffic. As compared with local traffic and with traffic that either originates or terminates on the lines of a carrier, overhead traffic is substantially less "G&A-intensive."

In addition, NS, CSXT, UP, and BNSF are holding companies, each of which owns at least 190 subsidiary short-line railroads (NS has 250). That corporate structure requires much greater coordination and oversight than the more straightforward corporate structure of the DRR (which is a privately-owned company).

DuPont's G&A experts have developed the G&A staffing of the DRR based on their analysis of the essential functions needed to operate this new railroad in a streamlined manner.

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[7] *See, e.g.* NS Reply, p. III-D-193.

GENERAL & ADMINISTRATIVE EXPENSE

Class I railroads, on the other hand, tend to over-staff their marketing, sales, accounting, and overall management in a bureaucratic and overly stratified manner. Where budgets are developed for multi-billion dollar railroads, the money is spent on staffing without the necessary attention to whether specific staffing is strictly required. Today, as Class I personnel leave jobs, many times they are not replaced or consolidated. This is an indication of over-staffing.

Moreover, many real-world railroads are organized in a suboptimal manner because they reflect long and complicated histories reflecting various mergers and acquisitions.[8] Those histories can create layers of unnecessary management that is not strictly required for a least-cost, most-efficient railroad. The DRR will not be encumbered with any of that history and unnecessary complication.

DuPont's G&A experts also note NS's extensive reliance on notions of maximum "span of control." There is no reason why a least-cost, most-efficient railroad should be bound by "typical" organizational structures that merely serve to create excessive layers of management, and result in a rigid, militaristic command structure that stifles creativity and flexibility.

Likewise, NS's evidence is based, in part, upon notions of required levels of prestige, rather than any strict functional need. For example, NS insists that the head of the Marketing department must be a Senior or Executive Vice President with Vice Presidents reporting to them because that is common in large Class I railroads, because "railroad marketing to large customers often requires high-level negotiations," and "shippers will expect the DRR to have Vice-President involvement in their negotiations, particularly if there is a need to "escalate"

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[8] For example, the present-day NS is a product of mergers among numerous predecessors since the 1830's. NS resulted from the 1982 merger of Norfolk & Western Railway Company and Southern Railway Company, which emerged from more than 200 previous mergers. The complex web of consolidated staffing and collective bargaining agreements resulting from these mergers doubtless influenced the thinking of NS's G&A witnesses.

negotiations to a more senior level."[9] However, NS never provides any explanation as to why a railroad cannot operate effectively unless the head of its Marketing department is viewed as an Executive and has Assistant Vice Presidents. DuPont has developed its G&A staffing in order to ensure the least-cost, most-efficient operation of its SARR, not to match real-world tendencies of large railroads with huge percentages of local traffic and potential conflicts between department leaders.

a. NS's Comparisons To Prior SAC Cases Are Faulty

In an attempt to support its G&A proposal, NS provided numerous comparisons to SARRs in prior SAC cases. Upon close inspection, however, many of these comparisons are flawed and should not be considered by the Board.

First, NS's assertions about the size of the DRR are plainly flawed. NS partially justifies its sizable G&A spending by claiming that the DRR (with 8,020 route miles) is nearly "four times" larger on a route-mile basis than "the largest SARRs the Board has considered to date."[10] However, this claim does not withstand scrutiny. The SARR in *McCarty Farms* was significantly more than one-half the size of the DRR.[11] Moreover, NS bizarrely cites *FMC* in support of its "four times" assertion, but the DRR would need to be over 12,150 route miles for this assertion to hold true.[12]

Second, NS asserts that the DRR "appears to be the first SARR ever presented to the Board for which the majority of traffic (62.1 percent) is non-coal traffic."[13] Again, NS misses

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[9] *See* NS Reply, p. III-D- 89.
[10] *See* NS Reply at III-D-53.
[11] *See McCarty Farms*, p. 490 (describing SARR of 4,469 route miles).
[12] *See FMC*, p. 786 (describing SARR of 3,038 route miles).
[13] *See* NS Reply, p. III-D-52.

the mark. *FMC* involved a SARR where coal was only 42 percent of the revenue.[14] Similarly, the complainant in *Seminole* presented a SARR where the carloads were majority non-coal in five of the ten SARR analysis years.[15]

With the foregoing as background, DuPont addresses below the differences between the parties' staffing for each department.

2. Executive Department

In its Opening Evidence, DuPont proposed an Executive Department consisting of four (4) individuals headed by the President (supported by an Administrative Assistant). The department also includes two (2) Directors of Corporate Relations who are responsible for community and government relations and report directly to the President.

On Reply, NS creates a much larger Executive Department comprised of sixteen (16) individuals.[16] NS claims that "it is not possible for one individual to manage such a diverse portfolio of responsibilities" in regard to DuPont's assignment of responsibilities to the DRR President.[17] NS claims that the DRR President could not manage the railroad and handle external relations due to the DRR's size. This claim is unreasonable, in fact, the real-world NS has one person, Charles W. Moorman, who acts as Chairman, President, and CEO. Similar to NS, Michael J. Ward is Chairman, President, and CEO of CSX Corporation. Both individuals are handling the day to day and long term strategy functions of these three (3) positions for railroads that are much larger than the DRR.

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[14] *See FMC*, p. 725 (n. 59).
[15] *See Seminole* Rebuttal Evidence, pp. III-A-44 and III-A-59 (filed April 15, 2010).
[16] *See* NS Reply, pp. III-D-77-84.
[17] *See* NS Reply, p. III-D-78.

GENERAL & ADMINISTRATIVE EXPENSE

Like NS and CSX, the DRR President has people who will handle many of the day to day functions of the railroad and will report directly to the President. NS's claim that the DRR President cannot handle the corporate functions of the railroad is infeasible based on NS's real-world operations. Both NS and CSX operations confirm that one person can handle all of the daily and long term corporate functions of the railroad.

NS also claims that DuPont's two (2) Directors of Corporate Relations are not enough to handle the many different facets of external relations. NS states that the DRR will need staff to oversee Corporate Relations, Public Relations, Federal Government Relations, and State Government Relations but many of these positions are not required for a private company.

DuPont's two (2) Directors of Corporate Relations will also handle Public Relations. One individual will handle the northern territory and the other will handle the southern territory. NS is a larger, publicly traded company that has a constant media presence, always fostering public view and investment. The fact that NS decides to operate this way, as a public company, does not mean that DRR, as a private company, would need to operate the same way regarding Corporate and Public Relations. Having two (2) directors handling both Corporate and Public Relations will allow a coordinated focus on areas needed to address issues with the railroads. DRR may operate in 20 states, but there are not derailments, public inquiries, news stories, events and speeches every day. Yes, DRR will address the key items, but as a private company, this need is reduced significantly. Contrary to NS's statement, the President is not obligated to give speeches, instead, this can be done on a selective and as available basis. DRR is a privately held company with limited investors rather than a publicly traded company. The key for DRR will be to keep the lines of communication open between the departments.

GENERAL & ADMINISTRATIVE EXPENSE

3. Board Of Directors

In its Opening Evidence, DuPont proposed a ten (10) person Board of Directors consisting of the President, Vice President-Operations, Vice President-Finance, Vice President-Traffic, Vice President-Law, and five (5) outside directors. In Rebuttal the outside directors are increased to seven (7) and the inside directors are reduced to three (3). Each outside director is paid a salary of $40,000 per year. NS claims that "to remain competitive, the DRR must pay each of its outside directors at least $263,551 a year."[18]

NS's salary for Outside Directors of $263,551 a year is unreasonable. The $40,000 per year salary for each director proposed by DuPont in Opening is not out of line when considering there are only four quarterly meetings. By no means is this a full time position, and as a private company, DRR does not have to pay each director as large fee as a large public company may need to provide. At $40,000 per year, DRR would still be able to attract quality, experienced personnel for this position. DRR can set its own compensation package and is not under any obligation to pay higher salaries or seek out particular personnel, as NS may be required to do.

4. Marketing & Customer Service Department

In its Opening Evidence, DuPont proposed a Marketing & Customer Service sub-department comprised of 50 individuals, including a Vice President-Traffic (supported by an Administrative Assistant), one (1) Director of Marketing & Sales (who oversees 18 Marketing Managers), and one (1) Customer Service Director (who oversees 28 Customer Service

[18] *See* NS Reply, p. III-D-171.

GENERAL & ADMINISTRATIVE EXPENSE

Managers).[19] DuPont also explained that it would outsource much of the marketing function, as is common with many large regional railroads.[20]

On Reply, NS proposes to include a substantially larger staff for the Marketing & Customer Service function. NS has proposed somewhere in the range of 202 to 206 employees.[21] NS's restructuring of the department is based upon a rejection of outsourcing, and the additional layers of unnecessary bureaucracy to the Marketing & Customer Service department. DuPont rejects NS's proposed changes to this department, and addresses each of the differences below.

First, with regard to outsourcing, DuPont acknowledges that the outsourcing costs for Marketing were unintentionally omitted from its Opening evidence. DuPont has since added employees to its Marketing and Customer Service Department and will not be outsourcing any Marketing related functions.

Second, DRR's traffic profile is substantially different than NS's. For example, only 38.3 percent of DRR's traffic is local or originated traffic and 61.7 percent of DRR's traffic is overhead or received traffic. NS's real-world traffic is the complete opposite with 76.7 percent local or originated traffic and 23.3 percent overhead or received traffic.

Given these dramatic differences in traffic profile, it is unreasonable for NS to use real-world NS data for benchmarking. Originating railroads will carry most of the burden for establishing shipments, paperwork, rates, etc. DRR's high share of overhead traffic greatly

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[19] *See* DuPont Opening, p. III-D-15.
[20] *See* DuPont Opening Exhibit III-D-2, p. 30.
[21] *See* NS Reply, p. III-D-76 (showing Marketing staff of 140) and III-D-98 (showing a Marketing staff of 136) and III-D-102 (Customer Service staff of 66).

reduces the burden on the DRR's Marketing & Customer Service department relative to that borne by real-world railroads.

Third, in today's railroad environment, Class I railroads have simplified the entire rate making process. There are fewer rate negotiations and contracts in favor of more public tariffs and automated rate quotes. The vast majority of traffic moves under these simplified rate authorities, which works very well for most of the traffic. Most customers today use rail mainly because there is no other alternative. This allows railroads to quote a rate that shippers must accept without negotiation because 90 percent of the quoted shipments must move by rail. Despite NS's claim of thousands of customers and 5,600 rate authorities, a majority of DRR's traffic is from large customers, who comprise larger portions of the traffic. This means there are fewer customers, rates and contracts to deal with.

Also, NS's 5,600 rate authorities are for 76.7 percent of local/originated traffic, for which NS as the originating carrier must create the authority. Since DRR's traffic is only 38.3 percent local/originated, it should have less than half of that number of rate authorities. NS's claim of substantial Rule 11 rates is questionable as well. NS makes the questionable claim that 29 percent of DRR's carloads are local and 49 percent are interline forwarded or received and only 22 percent is bridge traffic. NS derives these numbers only by adjusting the actual carloads by movement type by the carloads subject to Rule 11 rates.[22] NS then claims that the DRR has the same marketing and accounting responsibilities for this interchange traffic as its local traffic and therefore concludes DRR's marketing and customer service personnel are understated. Eliminating NS's unsupported adjustment to reflect alleged Rule 11 rates shows that only 17

[22] *See* NS Reply e-workpaper "DRR 2010 Revenue Traffic Totals.xlsx." It should be pointed out that the percentage of traffic which NS assumes are moving under Rule 11 rates are based on hard coded numbers for which NS provides no explanation or support and are therefore of no value.

percent of the DRR's traffic is local and 25 percent is forwarded for which the DRR has substantial marketing responsibility.

Fourth, a large percentage of DRR's traffic is coal and intermodal, which will all move in unit trains, and these rates are usually set by contract for a long period – 6 months to a year – and do not need to be re-established for each move. Overall, the DRR rate system will be much simpler than NS's model, relying more on public tariffs and less on personnel necessary to develop new rate quotes every week.

Fifth, NS's proposed Marketing organization includes extra personnel that are excessive for a new railroad organization. NS's Marketing and Customer Service staff consisting of one (1) Vice President, six (6) Assistant Vice Presidents, ten (10) Directors, 120 Managers, fourteen (14) Analysts, three (3) Assistants, and 51 Representatives is completely unnecessary and does not model the operations of a least-cost, most-efficient railroad. Many of these positions could be eliminated or consolidated within a railroad such as the DRR. The DRR should not be treated like a larger organization with unnecessary positions leading to waste and low productivity. A new railroad will be very streamlined and develop only those positions necessary to serve their customers effectively and efficiently.

DuPont discusses each of NS's proposals to add new positions to the DRR's Marketing & Customer Service Department staff below.

a. Assistant Vice Presidents

NS has proposed a group of six (6) Assistant Vice Presidents for this department, including an Assistant Vice President of Coal Marketing, Intermodal & Automotive, Marketing Services, General Freight, Interline/Short Line, and Customer Service, as well as seven (7)

GENERAL & ADMINISTRATIVE EXPENSE

Directors for the Marketing & Customer Service department. This would provide redundant layers of management. DuPont's G&A experts are at a loss to understand what these additional Assistant Vice Presidents would do, particularly given NS's proposed heavy additional layer of unnecessary Manager positions.

b. Additional Managers

Rather than the 46 Managers that DuPont proposed (*i.e.*, 18 Marketing Managers and 28 Customer Service Manager employees), NS has proposed a group of 120 Managers for this department, including four (4) Marketing Managers, seven (7) Planning Managers, 11 Customer Service Managers, and 98 Managers.

DuPont has added six (6) managers to the DRR's marketing staff, including two (2) Mangers of Industrial Development, one (1) Manager of Marketing Administration, one (1) Manager of Interline Development, and two (2) Managers of Car Management. DuPont has also reduced its Marketing Managers by one. DuPont rejects NS's additional managers as inconsistent with the nature of the DRR as a least-cost, most efficient railroad. For example, NS proposes to add one (1) Assistant Vice President-Customer Service, two (2) Directors of Customer Service and 51 Customer Service Representatives in addition to the 28 Customer Service Managers (NS decreases this to 11) and one (1) Customer Service Director proposed by DuPont.[23]

NS's explanation for adding these positions makes absolutely no sense, and DuPont's proposed Customer Service staff should be sufficient to handle the needs of its customers. Customer Service is for basic needs and today's Customer Service personnel have a limited

[23] *See* NS Reply, pp. III-D-89-102.

function. Most customer inquiries are handled through operations, marketing, sales, or equipment departments, so there is no need to overstaff the Customer Service department. The Customer Service Managers can easily cover the day-to-day train and car-tracking functions and assist in other marketing areas as well. The DRR has plenty of people to handle customer service and marketing without the additional personnel proposed by NS.

NS's staffing is also excessive due to the overlap in responsibilities. NS proposes 73 employees for the General Freight section of the Marketing Department.[24] The bulk of this proposed workforce consists of 30 product managers and 40 account managers, but the duties of these positions seem to overlap to a significant extent. The descriptions of duties for Assistant Product Managers and National Account Managers are shown in Table 5 below.

[24] *See* NS Reply, p. III-D-94.

GENERAL & ADMINISTRATIVE EXPENSE

Rebuttal Exhibit III-D-1
Table 5
Example Of Overlapping Position Descriptions In NS Staffing

	Assistant Product Manager (1)	National Account Manager (2)
1.	"Formulate decisions to secure and maintain business on assigned products and related articles"	"This position is accountable for maintaining and increasing business levels with assigned national accounts"
2.	"generat[e] and maintain[ ] profitable freight revenue"	"develop new business and retain existing business"
3.	"negotiations on assigned commodities with customers"	"negotiate rates, service, equipment and any related needs"
4.	"improving market share"	"increase market share"
5.	"continuing correspondence with shippers must be maintained"	"develop[ ] relationships with key customers"
6.	"Position requires extensive knowledge and understanding of markets"	"Analyze and provide accurate market intelligence"
7.	"Utilize all available resources within the Marketing organization, as well as other departments"	"Use all available resources....Work with Marketing and other departments as required"
8.	"generat[e] greater customer satisfaction"	"find[ ] creative solutions to customer needs"

Source: NS Reply e-workpapers "Product Manager Job Description.doc" and "Account Manager Job Description.doc."

The Board should reject the apparent duplication of duties by Product Managers and Account Managers.[25]

The overlapping responsibilities affect not just positions within the marketing and customer service department, but also positions in other departments. As part of its justification for the customer service staffing, NS states that, when "a train is unloading at a terminal and another train is en route and will arrive before the first train has cleared, customer service will be

[25] *See AEPCO*, p. 48 ("Defendants do not provide sufficient evidence to show that the Terminal Managers would not be performing the same functions as those undertaken by AEPCO's Managers of Yard Operations."). *Cf. AEPCO*, p. 50 (rejecting defendant personnel evidence due to "excessive management").

involved in determining where to hold the second train."[26] However, DuPont has already provided for employees to handle train operations as part of the DRR operating personnel, including 110 dispatchers to govern DRR operations.[27]

In addition to overlapping responsibilities, NS has also created new positions. Within its proposed Intermodal Group of the Marketing Department, NS claims that it benchmarked the DRR on the real-world NS marketing operations.[28] However, NS's workpapers show the Intermodal Group has three sections in the real world: Premium, Domestic, and International, but NS has also given the DRR a fourth section, Planning and Yield Management.[29] The Board should reject the seven employees proposed by NS for Planning and Yield Management.

In short, NS's proposed staffing of the Marketing & Customer Service function vastly exceeds the needs of a stand-alone railroad, as the Board's past holdings on G&A staffing confirm. NS's proposal ignores the nature of the DRR's traffic group, and the large proportion of its traffic that is interlined with other railroads (particularly NS) which will bring their own marketing and customer service staffs to bear on issues involving the marketing and tracking of the traffic handled by the DRR. On Rebuttal, DuPont has added one (1) Director of Marketing and Sales (DRR will now have one (1) Director for the Northern Territory and one (1) for the Southern Territory); six 6) Field Sales Personnel; two (2) Managers of Industrial Development (one (1) for the North and one (1) for the South); one (1) Manager of Marketing Administration; one (1) Manager of Interline Development; two (2) Managers of Car Management; one (1) Director of Car Management; and has reduced the Marketing Managers from eighteen (18) to

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[26] *See* NS Reply, p. III-D-100-101.
[27] *See* DuPont Opening Exhibit III-D-1, p. 6.
[28] *See* NS Reply, p. III-D-92.
[29] *See* NS Reply e-workpaper "Staffing – Marketing.xlsx" p. sheet "Intermodal."

seventeen (17). DuPont's addition of thirteen (13) positions to the Marketing & Customer Service staffing presented in Opening (for a total of 63) is more than adequate to enable the DRR to cover these functions, and addresses the needs of a startup operation like DRR.

5. Finance & Accounting Department

In its Opening Evidence, DuPont proposed a Finance and Accounting Department consisting of 66 employees headed by the Vice President of Finance & Accounting (supported by an Administrative Assistant).[30] The department also includes four separate functions: 1) Executive/Treasury (which has five employees); 2) Controller (which has 43 employees); 3) Budget/Purchase (which has 17 employees); and 4) Internal Auditing (which has one employee).[31]

On Reply, NS creates an enormous Finance and Accounting Department consisting of a remarkable 289 individuals, over four times the 66-member department established by DuPont.[32] NS's proposed Finance and Accounting Department is disproportionate to the tasks required, and significantly, is itself larger than the *entire* G&A staff accepted by the Board in any prior Stand-Alone rate case before the agency.[33]

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[30] *See* DuPont Opening, p. III-D-15.
[31] *See* DuPont Opening Exhibit III-D-2, p. 3.
[32] *See* NS Reply, pp. III-D-102-128.
[33] *Cf. Duke/NS* (63 total G&A with 24 in Finance & Accounting); *Duke/CSXT* (59 total G&A with 21 in Finance & Accounting); *CP&L* (63 total G&A with 24 in Finance & Accounting); *PSCo/Xcel* (51 total G&A with 16 in Finance & Accounting); *AEP Texas* (66 total G&A with 21 in Finance & Accounting – not including IT); *Otter Tail* (55 total G&A with 25 in Finance & Accounting); *TMPA* (63 total G&A with 23 in Accounting/Finance); *WFA/Basin* (39 total G&A with 15 in Finance & Accounting); and *AEPCO* (225 total G&A with 32 in Finance and Accounting).

GENERAL & ADMINISTRATIVE EXPENSE

In the most recent SAC decision, *AEPCO*, the Board relied upon a 32-person staff for Finance & Accounting, which is 0.0139 staff per million of SARR revenue.[34] Conversely, the NS proposal for the DRR is 0.0515 Finance & Accounting staff per million of SARR revenue.[35]

In past cases, the Board has rejected carrier efforts to introduce huge numbers of employees into SARR Finance & Accounting departments, but NS has ignored that precedent in gold-plating its version of the DRR.[36] NS's evidence should be rejected on these grounds as well.

While NS tries to use a percentage of revenue based on real-world NS data to determine DRR staffing, this is not relevant or applicable for a new startup operation such as DRR. The organization that comprises NS was created over many years through numerous mergers and acquisitions that have inherited and maintained previous personnel and positions over the years. These layers of personnel continue today even though investment and technology could reduce NS staff considerably. NS is also faced with an extremely complicated and established system which controls 76.7 percent of its traffic, while DRR is a new, modern railroad with the latest technology and advancements and controls only 38.3 percent of its traffic.

DuPont acknowledges the importance of the budgeting and financial reporting and has added one (1) Manager of Financial Planning to help in this area in lieu of the many additions

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[34] *See AEPCO*, slip op. p. 55 and 144 (based on 2010 revenue of $2.309 billion).

[35] *See* NS Reply Exhibit III-A-1 (based on 2010 revenue of $5.611 billion). NS claims that the *AEPCO* decision was an outlier (NS Reply, p. III-D-104), but the Board stated that the F&A staffing in that case fell "within the range of staffing levels we have accepted in a long line of SAC cases." *See AEPCO,* p. 58.

[36] *See, e.g., AEP Texas,* pp. 55-57 (rejecting additional employees for the financial reporting function, the revenue analysis/budgeting function, and the real estate function); *TMPA,* pp. 681-683 (rejecting effort to add 37 members to the finance/accounting staff); *WFA/Basin,* pp. 44-45 (rejecting effort to add employees for the financial reporting function, the budgeting and purchasing function, the real estate function, and 10 miscellaneous clerks, analysts, managers, and directors); and *Otter Tail,* p. C-9 (rejecting effort to revenue accounting and financial reporting employees, and revenue analysts to handle "such matters as overcharging, undercharging, miscoded bills, etc.")

NS suggested. Keeping DRR's overall accounting functions small and efficient will allow for increased productivity.

Much of the difference between the parties' staffing estimates relates to the Controller function. NS agrees with DuPont's proposal to employ a Controller and four (4) Assistant Controllers, but NS adds an additional 204 employees who will work under the four (4) Assistant Controllers (DuPont proposed 38 employees and NS responded with 242). NS addresses the four areas of responsibility for the four (4) Assistant Controllers separately. DuPont will respond to each NS argument in turn.

a. Revenue Accounting

NS proposes that the Assistant Controller – Revenue will be supported by three (3) Directors, 17 Revenue Accounting Managers, and 174 Analysts (*i.e.*, a total of 194 employees working under the Assistant Controller – Revenue). NS claims that this staffing is necessary "to process, correct, and collect freight bills for thousands of customers; to resolve issues with interline settlements, and supplemental bills; to ensure the proper rating of waybills; to guarantee the accurate and timely reporting of all operating revenue; and to monitor and estimate all revenue-related and receivable reserves pursuant to Financial Accounting Standards ("FAS") guidelines."[37]

NS bases its 194-member accounting staff partially on the view that the DRR's use of RMI software for automatic waybill generation will result in errors 10 percent of the time.[38] However, a close look at the cited RMI materials reveals that NS has overstated its case. Although NS implied that RMI made "errors" 10 percent of the time, the materials actually state

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[37] *See* NS Reply, p. III-D-112.

[38] *See* NS Reply, p. III-D-113 ("The DRR will…need human staff to correct errors. RMI boasts of a 90 percent accuracy level for automatic rating of waybills, meaning that 10 percent of waybills will need to be corrected").

that "[f]ully automatic rating of waybills in RMS is greater than 90 percent for most users."[39] Crucially, the RMI materials say nothing about accuracy or errors.

NS's proposed staffing of the Revenue Accounting Function is also excessive due to the fact that over 40 percent of DRR's traffic moves in unit trains and is billed by the trainload, not by the car, and approximately 61 percent of the DRR's traffic is controlled by other railroads. This means there are relatively few customers for the DRR to invoice, notwithstanding the large amount of revenue generated by the traffic. Thus the DRR needs only a small revenue accounting staff.

b. Disbursements

NS argues that DuPont's proposed staffing of the Disbursement function (*i.e.*, one (1) Assistant Controller, one (1) Manager-Accounts Payable, four (4) Accounts Payable Clerical Staff, and one (1) Payroll Manager) would be insufficient.[40] NS proposes that the Assistant Controller should be supported by one (1) Director, four (4) Managers, four (4) Analysts, and ten (10) clerical staff.[41] NS argues that this level of staffing is necessary and develops DRR staffing by scaling the NS workforce to the DRR based on operating expenses.[42] NS adds that these staff members would be responsible for "tasks like confirming the receipt of purchases; managing purchase card programs for small purchases required in the general course of business; entering data for non-electronic purchase orders; coordinating with field personnel to assure the prompt payment of vendors; and reviewing and reconciling statements on a monthly basis."[43] This proposed staffing again is excessive given the nature of the DRR's traffic group which limits

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[39] *See* DuPont Opening e-workpaper "Exhibit III-D-2 Information Technology.pdf," p. 27.
[40] *See* NS Reply, pp. III-D-115-118.
[41] *Id.*
[42] *See* NS Reply, p. III-D-116.
[43] *See* NS Reply, p. III-D-115.

functions like disbursements, invoicing, transfers, *etc.* The nature of the traffic group makes the DRR very different from any other Class 1, so using benchmarks such as NS's real-world data is inappropriate. Moreover, the DRR starts out with state-of-the art, user-friendly technology which further reduces the need for the kind of accounting staff most Class I railroads require.

NS also argues that the DRR would need four (4) Analysts reporting to the Payroll Manager.[44] In particular, NS states that "using Paychex does not eliminate the need for an in-house payroll department."[45] According to NS, additional staffing would be necessary to: 1) provide Paychex with information regarding individual employees' compensation and deductions; 2) coordinate with Paychex on garnishment, child support, and tax liens; 3) process and report who is working, who is sick or injured, and who is on vacation; 4) process expense reports; and 5) address employee questions about pay and withholding issues.[46] This staffing is excessive given the DRR has less than 5,300 employees, which is quite small in comparison to other Class I railroads. Today's software applications also make it easier to manage the Paychex system than in the past.

c. Tax Function

DuPont staffed its Tax Function with an Assistant Controller-Taxes, four (4) Tax Accountants, and three (3) Property Accounting Managers working in conjunction with outside tax preparation services. NS contends on Reply that this staffing is insufficient because of the large number of tax returns that the DRR will prepare each year, and because this "requires year-round efforts to review and verify each tax bill and to follow up on mistakes and requested

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[44] *See* NS Reply, p. III-D-118.
[45] *See* NS Reply, p. III-D-116.
[46] *See* NS Reply, p. III-D-118.

corrections."[47] NS also argues that DuPont's staffing is inadequate because NS believes the DRR would need staff to respond to state and federal audits, and "the DRR can expect focused treatment from the IRS that will require near-constant attention by in-house personnel."[48] On the basis of these arguments, NS insists that, in addition to the Assistant Controller-Taxes, the DRR will need "[s]ix personnel responsible for managing the ad valorem tax process, including a Director, two (2) Managers, and three (3) Accountants...Ten personnel responsible for the income tax process, including one (1) Director, three Managers, and six Accountants...Four Property Accounting personnel...and One Tax Attorney to assist with legal issues that arise related to taxes."[49]

NS's proposal is excessive in terms of the staff needed for preparation of monthly state and federal tax forms and related follow-up. Most such forms are standardized and repetitive, which commends them to computer processing. Also, a month is available between most filings to plan and prepare for the next filing. If additional help is needed to respond to audits, etc., outside firms can be used for assistance – although this is unlikely given the limited number of repetitive forms due each month.

NS's proposal is also unreasonable given the DRR is a single, private railroad. NS is a public railroad made up of hundreds of companies and subsidiaries that are still carried on the books and require extra tax handling and accounting. With DRR being a private railroad, with only one company to report on, they do not need as many tax personnel.

The DRR staffing is consistent with that of C&NW which had a small staff consisting of one (1) Director, two (2) Managers, and four (4) Analysts who were part of the Finance

[47] *See* NS Reply, pp. III-D-119-120.
[48] *See* NS Reply, p. III-D-120.
[49] *See* NS Reply, p. III-D-121.

Department and were responsible for handling taxes. C&NW did not outsource any tax related work.

On Rebuttal, DuPont believes that the outsourcing and staff support of seven (7) employees for the Assistant Controller-Taxes proposed in Opening will suffice and has not added any employees.

d. Financial Reporting

DuPont proposed on Opening that the DRR's Financial Reporting would be performed by an Assistant Controller supported by two (2) Staff Accountants and two (2) Analyst/Clerks.[50] NS argues that this staffing is insufficient and that it would be necessary for the DRR's Assistant Controller-Financial Reporting to be supported by three (3) Financial Reporting Managers and five (5) Staff Accountants (*i.e.*, an increase in head count of four relative to DuPont's Opening Evidence, as NS does not see a need for the Analyst/Clerk).[51] DuPont continues to believe that a total staff of five (5) is sufficient for this function, and that an additional four (4) employees are unnecessary.

NS bases its argument on "the Class I railroad reporting requirements of NS and the tasks required to comply with those requirements."[52] According to NS, the Financial Reporting function would be responsible for the monthly closing of books, STB reporting, financial audits, benefit plan reporting, and accounting research.[53]

As described in the tax prep section above, DRR is a single, private railroad, as opposed to NS being a multi-company public railroad. NS needs more personnel to report on the hundreds

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[50] *See* DuPont Opening Exhibit III-D-2, p. 11.
[51] *See* NS Reply, pp. III-D-122-124.
[52] *See* NS Reply, p. III-D-124.
[53] *See* NS Reply, p. III-D-123.

of companies, subsidiaries, and partial ownerships they have acquired over the years of their operation, and NS is required to report and file on numerous areas as a publicly traded company with substantial public stockholders. NS is accountable to numerous agencies and boards because of its public status, and everything must be audited and audited again to remain compliant in this financial environment. DRR does not exist in the same environment at all due to its private status. It can remain financially compliant and responsible simply by maintaining a basic annual report with minimal other reporting, accountable only to its private board members. Private vs. public status makes all the difference in NS's excessive personnel needs in this area, and DuPont stands by the figures needed for the DRR.

In addition to the oversized support staffing for the four (4) Assistant Controllers already identified by DuPont, NS also proposes to add other staffing to the Finance & Accounting Department to supplement the staffing proposed by DuPont for the Budgets and Purchasing function.

In its Opening Evidence, DuPont proposed to staff the budget and purchasing function with one (1) Director of Budgets, one (1) Manager of Budgets, two (2) Managers of Equipment Accounting, two (2) Managers of Car Accounting, two (2) Car Accounting Analysts, one (1) Expenditure Recovery Director, two (2) Expenditure Recovery Managers, one (1) Cost & Economic Analysis Director, two (2) Cost & Economic Analysis Managers, one (1) Purchasing Director, and two (2) Buyers (for a total staff of 17).[54] NS proposes to completely rearrange this staffing and add seven employees, increasing the total staff of this function from 17 to 24. In particular, NS insists that the DRR must have four (4) Purchasing Directors overseeing specific

[54] *See* DuPont Opening Exhibit III-D-2, p. 3.

areas of purchasing, including: 1) Services (overseeing two (2) Managers); 2) Fuel and Track Material (overseeing four (4) Managers); 3) Transportation Equipment (overseeing three (3) Managers); and 4) Technology (overseeing two (2) Managers).[55]

There is no need for four (4) separate Purchasing Directors. The DRR is a new railroad, with new track, bridges, locomotives, leased cars, and other equipment, so equipment and track-material purchases should be limited during the first five years of its existence. Purchases are limited on a daily basis, and the DRR does not have anything remotely approaching the purchasing demand of a major railroad like NS. The Purchasing Director and two (2) Buyers DuPont has provided on Rebuttal should be able to handle the railroad's ongoing fuel, material, and small-equipment purchases.

In short, DuPont disagrees with NS's absurd re-arrangement of the staffing for the Budgets and Purchasing function. First, DuPont has already provided for one (1) Director of Budgets and one (1) Director of Purchasing; there is absolutely no need for two (2) additional Director-level employees to handle one (1) sub-function (purchasing). While the nine (9) Managers DuPont proposed on Opening to oversee the budgeting and purchasing function are perfectly adequate, DuPont agrees that the budgeting and financial reporting is important and has added a Manager of Financial Planning who will oversee the budget and performance reporting process.

6. Law and Administration Department

On Opening, DuPont proposed a Legal & Administrative Department for the DRR comprised of: a Vice President Law (supported by an Administrative Assistant); three (3)

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[55] *See* NS Reply, p. III-D-125.

general attorneys; three (3) general solicitors; three (3) paralegals; two (2) Directors of Real Estate (supported by two (2) Managers of Real Estate and a Real Estate Attorney); a Director of Claims (supported by two (2) Managers of Claims); a Police Chief (supported by two (2) District Commanders and 12 Special Agents); and a Director of Human Resources (supported by a Compensation & Benefits Manager, two (2) Managers of Compliance, two (2) Compliance/Benefits Specialists, and two (2) Staffing & Recruiting Managers).[56] The total headcount proposed for this department was 42. On Reply, NS proposes a much larger Legal & Administrative Department consisting of 232 individuals, more than five times the staffing proposed by DuPont on Opening.

As with many of NS's other G&A departments, the NS proposal for Legal & Administrative staffing exceeds that found in recent cases. In *AEPCO*, the Board established a 29-person staff for Legal & Administrative, which is 0.0126 staff per million of SARR revenue.[57] In contrast, the NS proposal for the DRR is 0.0353 Legal & Administrative staff per million of SARR revenue.[58]

There are seven principal differences between DuPont's Opening and NS's Reply staffing of the Legal & Administrative Department: (i) NS's addition of three (3) Assistant Vice Presidents to the DuPont staffing proposal; (ii) NS's three (3) District Commanders (supported by 114 Special Agents, two (2) Communications Center Managers, and nine Communications Center Staff); (iii) NS's addition of 20 Claims Agents; (v) an Environmental Function staff comprised of 25 individuals; (vi) an addition of 23 Human Resources Managers; and (vii) NS's

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[56] *See* DuPont Opening, p. III-D-15.
[57] *See AEPCO*, slip op. p. 55 and 144 (based on 2010 revenue of $2.309 billion).
[58] *See* NS Reply Exhibit III-A-1 (based on 2010 revenue of $5.611 billion).

GENERAL & ADMINISTRATIVE EXPENSE

addition of nearly $11 million in outside legal fees. NS's staffing is excessive and in large part unnecessary.

a. Attorneys/Paralegals

DuPont proposed that the DRR's Vice President–Law would be assisted by three (3) General Solicitors, three (3) General Attorneys, three (3) Paralegals, and an Administrative Assistant, and would incur an annual cost for outside law firms of $1,075,000.[59] On Reply, NS claims that DuPont has significantly understated the DRR's legal expenses and staffing needs.[60] In particular, NS claims that the DRR would need additional resources to ensure compliance with FRA, TSA, environmental, and STB regulations and that the DRR would require legal expenditures as a defendant in maximum rate reasonableness cases.[61] On the basis of its various arguments, NS proposed to staff the legal function with one (1) Vice President-Law, one (1) Assistant Vice President-Law, two (2) Administrative Assistants, six (6) General Attorneys (three of which would replace the General Solicitors provided by DuPont), and three (3) paralegals. The net increase proposed by NS is one (1) Assistant Vice President-Law and one (1) Administrative Assistant.

NS's proposed staffing increase is unnecessary. DRR is a new, startup railroad that is not nearly as complex as NS. Only 534 trains operate daily, which is small compared to other Class I railroads. Further, DRR has only a small fraction of NS's total personnel. It is possible for any litigation to be outsourced, just like most Class I railroads today, and would be much less frequent than today's Class I railroads due to its smaller size. Also, DRR will have no past liabilities, derailments, spills, construction, etc. to guard against like that of older railroads. NS

[59] *See* DuPont Opening, p. III-D-20 and Opening e-workpaper "DRR G&A Outsourcing.xls."
[60] *See* NS Reply, pp. III-D-128-133.
[61] *Id.*

assumes that the DRR would have a greater need for in-house staff primarily because it is a regulated industry. However, the DRR would not face the prospect of rate litigation because it is presumed to operate in a contestable market, and rate case filings are not an everyday occurrence for a railroad the size and age of DRR.[62] Therefore, DuPont believes the Legal staffing added by NS is unnecessary and the staffing proposed by DuPont in Opening will suffice.

b. Outside Counsel

The DRR outsources a portion of its legal work. As noted above, the DRR's G&A staff includes a Vice President-Law who will serve as the railroad's General Counsel. In addition, the DRR staff includes three (3) General Solicitor's, three (3) General Attorney's, three (3) Paralegals, and also will be supported, as necessary, by one (1) Administrative Assistant. On Opening, DuPont assumed the DRR would retain outside counsel to perform the balance of its legal work and included an amount of $50,000 per state for this cost based on what has been accepted in previous proceedings.

In Reply, NS calculated an outside legal budget for the DRR based upon a 2003 benchmarking study prepared by the consulting firm of {{[redacted]}} that reported total legal expenses as a share of company revenues.[63] For companies with annual revenues between $6 billion and $10 billion, {{[redacted]}} reported benchmark spending as {{[redacted]}} percent of revenues on combined inside and outside legal spending.[64]

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[62] Rate litigation might occur if the DRR and its interline partners raise rates substantially (as NS did with DuPont's rates after the parties' rail transportation contract expired), but the DRR's projected rates and revenues are based on indexing current rates based on existing contract price-adjustment mechanisms or standard cost indices. There is no reason to assume rate litigation would occur in these circumstances.

[63] *See* NS Reply e-workpaper "Law Debt Spending Survey 2003.pdf" and "DRR Operating Expense Reply.xlsx," Tab "Outside Services."

[64] *See* NS Reply e-workpaper "Law Debt Spending Survey 2003.pdf," p. 2.

GENERAL & ADMINISTRATIVE EXPENSE

Using the {{[redacted]}} benchmark of {{[redacted]}} percent (which does not take into account the fact that DRR is a new railroad), NS calculated a total legal budget of $15,152,400 for the DRR. NS subtracted the annual salary, fringe benefits, and different expenses associated with the DRR's Vice President- Law, as well as the various in-house staff members to yield a proposed outside legal expense of $12,019,986.

On Rebuttal, DuPont accepts calculation of an outside legal budget based on a percent of revenue calculation, but DuPont utilizes more appropriate assumptions in several key respects.

First, the specific ratio that NS utilized is improper. NS cites an outdated 2003 study when calculating the total legal spending of the DRR. Altman Weil, a legal organization consulting firm, reports in a published survey that, in 2006, law department expenses for corporations with revenues greater than $5 billion were 0.19 percent of revenues rather than the {{[redacted]}} study of {{[redacted]}} percent of revenues.[65]

Further support for the notion that NS's legal spending benchmark of {{[redacted]}} percent is unreasonable can be found in the 2012 Altman Weil published survey of Chief Legal Officers, which found "Corporate law departments report that they are re-negotiating outside counsel fees, shifting work to lower-priced law firms, increasing in-house capacity, opting for alternative service providers and using new technology - all to develop a more cost-effective legal services model."[66] This desire to become more cost-effective is apparent in Altman Weil's 2012 benchmark survey, which shows that law department expenses for corporations with revenues greater than $5 billion were only 0.10 percent of revenues.[67]

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[65] *See* e-workpaper "2006 Law Department Metrics Benchmarking Survey.pdf" p. 23.
[66] *See* e-workpaper "2012 Chief Legal Officer Survey.pdf" p. i.
[67] *See* e-workpaper "2012 Law Department Metrics Benchmarking Survey.pdf."

GENERAL & ADMINISTRATIVE EXPENSE

The 2006 and 2012 Altman Weil benchmark surveys make it apparent that legal spending as a percent of revenue has fallen significantly for corporations over the past decade. DuPont recognizes that these figures are an average that includes a range of different companies (in terms of company revenues and the specific industries represented), but NS's use of a figure much higher is unjustified for the DRR.

It is also necessary to consider that both internal and outside counsel for the DRR likely will reside in Roanoke, VA, where legal salaries are substantially lower than in other markets, such as the Washington, D.C. region where outside counsel for Class I railroads typically reside. A study shows that the mean wage for attorneys in Roanoke, VA is only 65 percent of the mean wage for attorneys in Washington, D.C.[68]

In light of these considerations, DuPont has utilized a conservative figure of 0.175 percent to calculate the DRR's total legal spending as a percentage of revenues. DuPont developed this figure by: {{[redacted]}} This figure is substantially higher than the 0.10 percent average figure reported by Altman Weil for 2012. Based upon the 2009/2010

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[68] *Cf.* Rachel M. Zahorsky, "What America's Lawyers Earn," ABA Journal (March 1, 2011)(*see* e-workpaper "Zahorsky.pdf")

[69] Reports indicate that total legal spending worldwide decreased by 1 percent from 2010 to 2011. *See* "Law Departments Increase Internal Staff and Keep More Work In-House, According to 2011 HBR Law Department Survey," HBR Consulting, at 2 (October 7, 2011) (*see* e-workpaper "2011 HBR Survey.pdf").

revenues of the DRR of $5.673 billion, DuPont's calculation yields a total DRR legal budget of $9,955,830.

Second, in its calculations NS has utilized an improper figure for the DRR's total internal legal expense. Specifically, NS's internal cost estimate does not account for the expenses of the additional employees NS claims to add. NS proposes to add an Assistant Vice President-Law to "oversee the legal and claims department" and an Administrative Assistant to "aid the Assistant Vice President and others in the legal department."[70] NS does not take these additional employees into consideration, and calculates the internal costs using only the Vice President-Law, one (1) Administrative Assistant, seven General Attorneys, and three (3) Paralegals.

Even more importantly, NS ignores the expenses associated with the other DRR employees with at least some involvement in the legal function; namely, the Manager of Safety and Claims. While the duties of these employees would be broader than simply legal-related functions, it is improper to exclude consideration of their involvement entirely. DuPont has assumed that 50 percent of the expense of the Manager of Safety and Claims should be treated as legal expense. (There are two (2) Managers of Safety and Claims.)

As discussed above, DuPont believes the Legal Staffing proposed in Opening will suffice and has not added any staff members in its calculation of in house spending. The expenses associated with internal legal staffing are summarized in Table 6 below.

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[70] *See* NS Reply, III-D p. 132.

GENERAL & ADMINISTRATIVE EXPENSE

Rebuttal Exhibit III-D-1
Table 6
Total Internal DRR Legal Expense

	Item	Per Employee	VP-Law	General Attorney	Manager of Claims	Paralegal	Assistant
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
1.	Staffing	xxx	1	6	2	3	1
2.	Salary		$458,588	$529,110	$88,185	$170,718	$56,906
3.	Benefits	0.375	$171,971	$198,416	$33,069	$64,019	$21,340
4.	Travel	$10,039	$10,039	$60,234	$10,039	$0	$0
5.	Desk	$386	$386	$2,316	$386	$1,158	$386
6.	Computer	$258	$258	$1,548	$258	$774	$258
7.	Supplies	$395	$395	$2,368	$395	$1,184	$395
8.	Total		$641,636	$793,992	$132,332	$237,853	$79,285
	Total Internal DRR Legal Expense					**$1,885,098**	

Source: e-workpaper "DRR G&A Outsourcing.xlsx."

In aggregate, the total internal legal budget for the DRR is $1,885,098. Subtracting this internal budget from the $9,955,830 estimated total legal expense yields an outside counsel expense for the DRR of $8,070,732. The combination of this outside counsel budget and the DRR's internal staffing level will be sufficient to cover the legal needs of a carrier the size of the DRR.

c. Claims

On Opening, DuPont provided one (1) Director of Claims and two (2) Managers of Claims, and outsourced work to Claims Investigators at an annual cost of $250,000. NS argues that "DuPont's outsourcing claim is not reasonable, and it has significantly understated the

GENERAL & ADMINISTRATIVE EXPENSE

staffing needs for the DRR claims department."[71] NS staffs the claims department with one (1) Director of Claims, three (3) Claims Managers, and 20 Claims Agents.[72]

NS's claim is flawed for several reasons. First, DRR will be responsible for investigation of claims on local and received traffic only (less than half of the traffic, 43.9 percent). Also, coal traffic, which has a very low claim rate, is almost 20 percent of the DRR traffic. Second, a good deal of what moves by rail is the customers' responsibility, as far as damages, because of loading responsibilities. In the uncommon circumstances that there is a claim filed by a customer that DRR actually is responsible for investigating, DRR can outsource the effort to a third party on an "as needed" basis. Third, DRR handles less carloads than NS, and recently, claims against the railroads have been decreasing due to unit train shipments (like coal) and shipper responsibilities through loading.

Further support comes from Mr. McDonald's experience at C&NW, which at one time, was organized with eight divisions. Each division had one (1) Claim Agent, who reported to the Director in Chicago (system headquarters), who was an Attorney and part of the Law Department.

In short, DRR's traffic makeup and responsibility for claims will be substantially lower than NS's for the same "carloads" of traffic, and the same formulas for measuring claims need not apply. DuPont stands by its estimates for claims personnel and outsourcing for these reasons.

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[71] *See* NS Reply, p. III-D-133.
[72] *See* NS Reply, p. III-D-136.

GENERAL & ADMINISTRATIVE EXPENSE

d. Real Estate

On Opening, DuPont provided two (2) Real Estate Directors, two (2) Real Estate Managers and one (1) Real Estate Attorney to staff the Real Estate function. NS argues that this "is not enough for the DRR to acquire property to expand its ROW, terminals, and yards; the DRR also must provide staffing sufficient to handle property development activities such as design and engineering, permitting, and scheduling of construction." and adds four (4) Development Managers upon Reply.[73]

Given that the DRR real estate department is mainly just the right of way to operate the rail line, and there are few excess pieces of real estate, there is no need for a large real estate department. Environmental concerns tie into the real estate, but this a very specialized area of expertise and only of periodic necessity for an operation like the DRR. Most of these functions can be handled by third parties. This is much more cost effective for the DRR. DuPont has added one (1) Administrative Assistant to the Real Estate Department upon Rebuttal for total staffing of six (6).

e. Police

The excessive size of the Legal & Administrative staffing proposed by NS is largely due to the police staff. NS argues on reply that, "[b]ecause of the significant security, regulatory, and asset protection requirements of all Class I railroads, sufficient police personnel are necessary to cover the geographically spread out, 7,344 route mile, 20 state territory over which the DRR's network travels."[74] DuPont concurs with NS's suggestion that security staffing is needed, but NS's proposed staffing of 130 individuals is unnecessary. Instead, the DRR's security needs can

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[73] *See* NS Reply, p. III-D-137.
[74] *See* NS Reply, p. III-D-138.

GENERAL & ADMINISTRATIVE EXPENSE

be met with a single Police Chief (DuPont proposed and NS accepted), two (2) District Commanders, twelve (12) Special Agents, and one (1) Administrative Assistant. This staffing would be sufficient to cover the DRR's system. The North and South Region would each be covered by one (1) District Commander and six (6) Special Agents (who are on call 24 hours a day). The Chief of Police or a Special Agent can also call in local public police forces, should additional assistance to handle a particular incident be required. This is a common practice for smaller railroads, and over the years even the Class I railroads have cut back on in-house special agents and rely increasingly on local police. There is no reason this cannot be done here. DuPont rejects NS's proposed changes to this department, and addresses each issue raised by NS below.

First, the primary justification offered by NS for this sizable police force is that DuPont's 15-member police force cannot fulfill the duties "required by standard industry practice and by government regulation."[75] As an initial matter, "standard industry practice" is not a "requirement," it is merely a "practice" or custom that a complainant need not follow as long as the needs of the traffic group are met. The complainant is free to avoid unnecessary and/or inefficient practices.[76]

Second, despite NS's assertion of "government regulation," NS cites to just two regulatory requirements – both of which are of extremely dubious value in supporting a 115-officer police force. First, NS cites to the requirement for Class I railroads to "provide the location and shipping information" of a rail car to TSA within five minutes.[77] The Board should

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[75] *See* NS Reply, p. III-D-137.
[76] *See Duke/NS*, p. 112 ("The SAC test is designed the measure the costs of serving traffic in the absence of inefficiencies....[which] can take many forms").
[77] *See* NS Reply, p. III-D-139 (citing 49 CFR § 1580.103(d)(1)).

reject NS's assertion that police officers are needed to locate a rail car, given that other DRR departments already fulfill this task: DRR has 110 dispatchers staffing 25 desks around-the-clock; 28 Customer Service Managers staffing 6 positions around-the-clock for duties such as "questions concerning the locations of specific trains and cars;" and computerized dispatching systems for monitoring "the movement of trains and other equipment at all times." Second, NS cites to a Federal Register notice issuing a new rule that railroads maintain a toll-free phone number to allow the public to report unsafe road or pathway crossing conditions.[78] Answering phones about unsafe crossing conditions is plainly not a police function, especially since the purpose of this new requirement is to allow a railroad to adjust rail operations and/or fix defective crossings in a timely manner.[79] The DRR dispatching department in conjunction with the field operations department can handle these tasks when they arise.

Third, NS also asserts that its own internal police force generated {{[redacted]}} reports in 2009 and engaged in a number of other actions, such as {{[redacted]}} arrests.[80] This is insufficient justification for the DRR's staffing. Just because NS has decided to hire a large police force to generate reports does not mean that the DRR must similarly do so.[81]

Fourth, DRR's on-line operating work force is constantly on alert for situations requiring the attention of the police, therefore, it is not necessary to have all aspects of security handled by a police officer. DRR's police will be able to coordinate with the local police force should an incident occur, and can work with local law enforcement on security, trespassing on rail right of way, vandalism, etc. as needed as the right of way moves through jurisdictions. NS has a larger

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[78] *See* NS Reply, p. III-D-139 (citing 77 Fed. Reg. 35164).
[79] *See* e.g., 77 Fed. Reg. p. 35167.
[80] *See* NS Reply, p. III-D-138.
[81] *See* e.g., *McCarty Farms*, p. 468 (the SARR can be designed "in a manner that is different from, and more efficient than, the incumbent carrier's service" as long as it meets the shippers' needs).

police force due to its vast system and size, and has found it easier to simply train its own police force to handle its private concerns and interests. A smaller, new rail operation does not require this vast security body and can address problems as they arise.

This is yet another example of NS's philosophy where each and every task requires a separate employee. In Mr. McDonald's experience, C&NW had an in-house police force similar to that proposed for DRR and operated successfully itself by calling on local police departments when needed. As with all property owners and businesses that pay property taxes and contribute to local economies that support local and state police, railroads can enlist police assistance when the need arises. NS has not shown that the normal police are incapable of responding to criminal behavior on rail property.

f. Environmental

Notwithstanding the fact that DuPont proposed in Opening that the DRR's Mechanical Department would employ one (1) Manager of Testing and Environment, the Engineering Department would employ one (1) Director of Environmental Operations and one (1) Environmental Engineer, and the MOW Department would employ two (2) Environmental/Safety/ Training Managers, NS contends that it is necessary for the DRR's Legal & Administrative Department to include an Environmental Director, five Managers (one Environmental Remediation Manager, one (1) Environmental Operations Manager, one (1) Compliance Manager, one (1) Projects Administration Manager, and one (1) Infrastructure Security Manager), and 17 Engineers.[82] This additional staffing is redundant and unnecessary because the DRR is a new railroad with a first-class track structure, and does not have ongoing

[82] *See* NS Reply, pp. III-D-148-151.

environmental issues from the past like Class I railroads. Outside assistance would be more economical for infrequent special circumstances, such as a derailment involving spillage of toxic substances. This work is highly specialized and does not happen every day. DRR will not need a dedicated employee for this occurrence.

g. Human Resources

On Opening, DuPont provided a Director of Human Resources ("HR"), one (1) Compensation & Benefits Manager, two (2) Managers of Compliance, two (2) Compliance/Benefits Specialists, and two (2) Staffing & Recruiting Managers. DuPont also explained that it would outsource most of the HR functions.[83]

On Reply, NS proposes to include a substantially larger staff for the HR function. Specifically, NS proposes to add 23 additional employees to this Department (for a total of 31). NS's restructuring of the department is based upon a rejection of most of DuPont's outsourcing, as well as the rejection of DuPont's attrition rate. DuPont rejects NS's proposed changes to this department, and will address each issue below.

First, with regard to outsourcing, DuPont acknowledges that the outsourcing costs for HR were left out in Opening. On Rebuttal, DuPont has added an employee to its HR department in lieu of outsourcing.

Second, there is no need for a large HR department as stated by NS, as DRR has limited employees, and HR needs for a non-union labor force will be substantially lower than a union-governed entity. There will be no personnel necessary to dedicate to labor negotiations, grievances, labor contract management, special contract payroll coding for multiple contracts,

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[83] *See* DuPont Opening Exhibit III-D-2, p. 30.

etc. Non-union labor will allow the DRR to function with a more streamlined HR Department. Also, as a new railroad, the bulk of the employees will be in place, and turnover is not expected to be an issue. This gives the HR department time to plan and staff the DRR with adequate employees.

On Rebuttal, DuPont has concluded that the HR Department requires a total of nine (9) employees, or one more than posited on Opening. This HR staff is perfectly adequate for a newly-formed railroad with less than 5,400 employees. The two (2) Staffing & Recruiting Managers can plan and keep a file of potential employees as job openings occur (the railroad industry today has lots of ex-employees looking for jobs in all departments). An outside recruiter can be used for executive-level positions, which do not open up frequently. The two (2) Managers of Employee and Labor Relations are responsible for all labor relations matters, with administrative staff support from the two (2) Managers of Compliance. It is possible for labor relations matters to be handled by four (4) individuals since the DRR (unlike other Class I railroads) is non-unionized. C&NW had a very similar HR staff to that proposed by DuPont, and was able to operate quite effectively

7. Information Technology

DuPont's IT expert, Joseph Kruzich, initially designed an IT department consisting of 46 individuals. NS accepted DuPont's method for addressing IT staffing and proposed an increase in IT staffing of 32 individuals for a total of 78.[84] DuPont believes this increase in unnecessary. The complexity of the IT system and quality of newly hired personnel will be a key factor in DRR's IT staffing. DRR will start with the latest in technology and advancements, whereas a

[84] *See* NS Reply, pp. III-D-160-162.

GENERAL & ADMINISTRATIVE EXPENSE

railroad such as NS is always balancing between legacy technologies and implementation of new technologies. NS also states that there are eight (8) major hump yards on DRR, increasing its IT needs.[85] As described in DuPont's Rebuttal Part III-C, the DRR does not have any hump yards, therefore these additional IT employees are not required.

The basic IT functions will be developed to meet the needs of the DRR and where needed, certain IT functions will be outsourced without requiring full time staff. Technology today is very user friendly, automated, and self-sufficient. User interfaces have removed the need for excessive IT personnel and manufacturers' customer service removes the need for excessive in-house development and maintenance personnel.

NS also develops a lot of its own software and equipment as an integrated control strategy, and because in the past, there were not sufficient rail software tracking, modeling, dispatch and finance software available. This is not the case today with a market of abundant rail software programs and applications available to a smaller railroad like the DRR. The DRR will not need any of these personnel as NS does for development of its own software, training of such, testing of such and integrating into existing systems.

NS cites a Gartner benchmark that claims "IT employees represent an average of {[redacted]} of full time employees in transportation industry companies."[86] This is completely irrelevant in this case because these benchmarks include all transportation companies such as airlines, trucking companies, waterway operators, bus lines, Class I railroads, *etc.* The DRR is a railroad with a relatively simple operation that lends itself to readily-available IT systems. It should be

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[85] *See* NS Reply, p. III-D-162.
[86] *See* NS Reply, p. III-D-161.

no surprise that the DRR spends a significantly lower percentage of its revenue on IT than the average transportation company.

Further support for the claim that NS's staff increase is unnecessary comes from the fact that during Mr. Kruzich's time with KCS as Vice President and Chief Information Officer (CIO), KCS employed close to 50 IT personnel that were able to handle all IT functions in-house, in other words, there was no outsourcing. Mr. Kruzich is well aware of functions that the DRR's IT staff would have to cover. The fact that the DRR is relatively large for a SARR, with over 7,200 route miles and $5.7 billion in annual revenue, is not determinative of its IT staffing needs-what is determinative are the IT functions that need to be performed, and these functions are much less complex than those of a typical Class I railroad.

DuPont responds to the defendants' various IT positions below.

a. IT Directors

NS proposes four (4) Directors to oversee three primary IT functions: transportation, security, and applications. This is one more Director than KCS had when Mr. Kruzich was head of KCS's IT department in the mid/late 1990's. At KCS, one Director oversaw computer operations, which included an IBM mainframe; a second Director oversaw all revenue, car hire, and financial management report applications; and a third Director oversaw all transportation applications including dispatching, crew calling, disbursements, *etc.* As discussed above, KCS had 50-plus IT positions, including IT management, that were responsible for all in-house computer applications.

Consistent with today's practice for a company its size in terms of total managerial staff, the DRR does not have a mainframe and outsources 94 percent of its IT services to RMI. Most

of the functions performed in-house at KCS 15 years ago will be performed for the DRR at RMI locations by RMI personnel. The DRR has very little need for applications development, systems analysis, technology support, or network monitoring. When such functions are required, it is provided by the seven (7) Programmer/Development positions, and the required technology support will be provided by the five (5) Programmer/Technicians. All of these functions can easily be supervised by one (1) Director of IT Applications, rather than two as proposed by NS on Reply.

b. Programmers/PC Technicians

NS recommends nine (9) Programmers/PC Technicians positions based on their scaling approach. As indicated in DuPont's Opening at III-D-16, DuPont has provided five (5) positions to provide user support in the day-to-day operation of the DRR's operating system and applications, software and computers. These positions provide technical support, including configuring desktops and maintaining network connectivity and printing capability. DuPont has added two (2) positions on Rebuttal for a total of seven (7) positions, which will be more than adequate to cover DRR's daily needs.

c. Programmers/Development

NS suggests that DRR would need staffing of 12 Programmers/Development based on their scaling approach. This is totally unjustified because it does not take into consideration that most of DRR's IT functions are outsourced. Mr. Kruzich would agree if the DRR's computer systems were configured to operate in-house, but they are not. As discussed above, the majority of the IT operating costs of the DRR's computer system are outsourced to RMI. Thus, RMI will test and make enhancements to its systems to support the DRR's needs and the DRR does not

need employees for this purpose. DuPont has provided seven (7) Programmers/Development to maintain and upgrade the crew calling, dispatching, human resources, and accounting systems. This is completely adequate to handle the needs of DRR.

d. Database Management

NS recommends six (6) Database Management positions for designing, maintaining, and optimizing database management systems. DuPont Witness Kruzich agrees that database management is a vital function in any IT organization, and that one (1) additional database manager should be added. However, he disagrees that six (6) Database Managers are needed since the majority of DRR's computer needs are covered by RMI. The DRR will have mostly unit train and trainload operations, and far fewer customers, commodities, and employees than any real-world Class I railroad. Therefore, database management will be far less complex than at NS, which has thousands of customers, commodities, employees, origin/destination pairs, rate combinations, freight cars and locomotives, over 30,000 route miles, *etc.* Based on the comparatively simpler DRR operations, only one (1) additional position is needed for the IT staffing to handle database management.

e. Interface Support

NS contends that there is a need for six (6) Interface Support Managers. Mr. Kruzich agrees there is a need to write interfaces between systems such as RMI, Crew Management, and Payroll; however, once an interface is written, it is operational for a long period of time and usually requires very little maintenance. Accordingly, he has added one (1) Interface Support Manager (application programmer) to the DRR's IT staff to ensure that systems can be interfaced and function in an integrated manner.

GENERAL & ADMINISTRATIVE EXPENSE

f. Help Desk PC Technicians

NS proposes a total of 17 Help Desk technicians for the DRR, based on their scaling approach.[87] This is completely unreasonable. When Mr. Kruzich was VP of Information Systems at KCS, that railroad had one (1) Help Desk Technician on duty 24/7 (or a total of five (5) employees), which was more than adequate to handle all incoming calls for technical support. In contrast, DuPont has provided for two (2) Help desk technicians and a total ten (10) employees to staff these positions. The defendants' gross overstaffing for the Help Desk function should be rejected. Mr. Kruzich sees no need for additional help desk positions, and definitely not in the field as suggested by NS.

g. Network & Security Monitoring

NS suggests that six (6) Network and Security Monitoring positions would be needed to monitor the health of the DRR's systems. Mr. Kruzich strongly disagrees with this suggestion because, as previously noted, 94 percent of the DRR's IT operating cost is outsourced to RMI. RMI has sufficient staff to monitor the DRR's systems, which is why the DRR pays a large sum of money for outsourcing. That is the main purpose of outsourcing; the outsourcer provides a reliable service so that the customer (DRR) can operate efficiently and effectively. Moreover, Mr. Kruzich has provided a 24/7 Programmer/PC Technician position (requiring five (5) employees). The Programmer/PC Technician provides user support in the day-to-day operation of the DRR's operating system and applications, software, and computers. Since the DRR outsources a large portion of its computer needs, the four (4) positions provided in Opening are

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[87] *See* NS Reply, p. III.D-161.

adequate to cover network and security monitoring, and the two (2) positions NS proposes to add (for a total of six employees) would have little work to occupy their time.

h. Server Managers and Exchange 2007 Engineers

NS proposes five (5) Server Managers and five (5) Exchange 2007 Engineers based on its scaling approach. NS's approach is unreasonable and should be rejected. Staffing should be determined on need, not purely on scaling. Mr. Kruzich feels strongly that the three (3) Server Managers and three (3) Exchange 2007 Engineers provided in Opening are more than adequate.

NS's proposed staffing of the IT function is completely unnecessary. The quality of technology and personnel today allows for DRR to only employ 51 in the IT area, an increase of five (5) employees (two Programmers/PC Technicians, one (1) Network Engineer, one (1) Database Manager, and one (1) Mobile Interface Support Manager). This will be more than enough to run a lean and efficient Class I railroad.

In summary, on Rebuttal DuPont has increased the DRR's G&A staff by 24 employees, raising the total from 213 to 237. DuPont's Rebuttal G&A staffing is more than sufficient and should be accepted by the Board over NS's bloated staffing.

B. COMPENSATION

NS states that it accepts DuPont's approach to use data from NS's Wage Forms A and B, with the exception of the President, Vice Presidents, and Marketing Managers.[88] With respect to the President and Vice President positions, NS states that, while DuPont based their salaries on the compensation for similar positions by KCS, DuPont included only their salaries and bonuses and "completely ignores the stock-based compensation that is the primary element of KCS's

[88] *See* NS Reply, pp. III-D-162-163.

executive compensation structure."[89] Historically the board has not included stock awards, stock options, non-equity incentive plan compensation, and "all other compensation" in stand-alone cost proceedings due to the fact these expenses were not included in the Annual Proxy Statement. While these forms of compensation are now included, DuPont still believes they should not be counted when calculating Executive Compensation. DuPont excluded stock awards, stock options, non-equity incentive plan compensation and "all other compensation," to the extent they were identified, for the following reasons.[90]

The DRR is a new startup railroad, the initial salaries meet the requirements of a startup railroad, and depending on the performance and profitability of DRR, there may be room for salary increases, stock awards, and other incentives. As a startup railroad, DRR will not want to overpay on salaries.

In terms of finding good employees at these salary ranges, there are many railroaders and non-railroaders seeking employment. Salaries for a startup such as DRR versus a long established railroad are quite different and should be based on performance rather than titles.

As discussed above in regard to outside directors, again this is a startup railroad and salaries of $40,000 will suffice. Once the railroad is established and up and running, salaries may be reviewed and adjusted accordingly. The key is that quality people are available at these salaries, especially in the job market today.

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[89] *See* NS Reply, p. III-D-163.
[90] *See* DuPont Opening e-workpapers "III-D-3Salaries.pdf" and "DRR Salaries.xls."

GENERAL & ADMINISTRATIVE EXPENSE

C. MATERIALS, SUPPLIES AND EQUIPMENT

NS accepts DuPont's proposed unit costs for the materials, supplies and equipment needed by the DRR's employees. The revised employee count on Rebuttal requires a corresponding revision in the total expenditure for materials, supplies and equipment.[91]

D. OTHER

1. IT Systems

The DRR's Opening IT systems, as developed by DuPont Witness Kruzich, were designed on the basis of currently available technology best suited for the DRR's needs. Much of the technology provided (94 percent of IT Operating Cost) is through RMI outsourcing. NS devoted much of the IT response to claims that DuPont's IT systems would be superior to other Class I railroads. This is totally unfounded and should be rejected. DuPont has provided IT systems that are equal to those of other Class I Railroads, and is using many of the same packages as Class I railroads. DuPont's claim is not that DRR IT systems are superior to other Class I Railroad's, but rather are efficient IT systems that will provide DRR employees the most complete means of accomplishing their daily activities. NS has accepted the IT systems proposed by DuPont on Opening but has made several adjustments that significantly increase IT costs. DuPont has made adjustments to the DRR IT systems on Rebuttal and will discuss each below. The expenses associated with IT systems are shown in Table 7 below.

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[91] *See* DuPont Rebuttal e-workpaper "DRR Operating Expense_Rebuttal.xlsx" for details.

GENERAL & ADMINISTRATIVE EXPENSE

Rebuttal Exhibit III-D-1
Table 7
DuPont Opening, NS Reply and DuPont Rebuttal
Capital And Operating Costs For DRR IT and Communications Systems

		DuPont Opening		NS Reply		DuPont Rebuttal	
	Item	Capital Cost	Operating Expense	Capital Cost	Operating Expense	Capital Cost	Operating Expense
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
1.	IT	$10,624,960	$24,883,951	$86,743,510	$31,723,904	$26,021,565	$29,684,936
2.	Communications	$67,168	$760,338	$286,170	2,136,291	$69,276	$872,539
3.	Total	$10,692,128	$25,644,290	$87,029,680	$33,860,195	$26,090,841	$30,557,474

Source: e-workpapers "DRR - Capital Budget-Rebuttal - Final.xlsx" and "DRR - Operating Budget-Rebuttal - Final.xlsx."

a. RMI

NS proposes to increase RMI implementation costs from DuPont's Opening cost of $750,000 to $27,000,000, {{[redacted]}} suggests that the DRR's implementation costs would amount to $27 million."[93] This claim is infeasible for several reasons.

{{[redacted]}}

Second, using carloads as a benchmark is unreasonable. Carloads have little to do with the implementation cost of any IT system. The biggest determining factor for implementation

[92] *See* NS Reply, p. III-D-174.
[93] *Id.*

costs is the reporting stations where information is input, such as freight offices. By NS's own admission, "[a] rail operating system is implemented station by station, across the DRR's network."[94] The total reporting stations a railroad has is more aligned with route miles than it is with carloads. This is precisely why Mr. Kruzich strongly feels a better criteria to estimate RMI implementation costs is route miles.

Third, DRR would write many training manuals for one railroad, {{ [redacted] }}, he has used the $4,500,000 implementation cost for all RMI systems on Rebuttal and believes this is more than enough to cover all costs.

NS also provides DRR crews with Mobile Crew Reporting ("M-Crew") devices at a total cost of $7,347,619. DuPont accepts the addition of M-Crew devices because it will increase productivity and require less clerical employees in the yard offices. Total costs were adjusted based on crew count, and DuPont's total cost for M-Crew devices is $5,605,901.

b. Oracle

NS accepts DuPont's Oracle Accounting and Human resources software packages, but adjusted the costs to reflect additional users. NS also adds a Marketing and Sales module from Oracle to provide some IT functionality for the major marketing functions. Mr. Kruzich concurs

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[94] *Id.*

GENERAL & ADMINISTRATIVE EXPENSE

with this addition and has added $370,880 to the Capital Budget, along with $40,768 to the Operating Budget, based on DuPont's employee count.

NS states that DuPont provided no implementation costs for Oracle and only $100,000 for training. NS also "concluded that a realistic ERP implementation cost for Oracle would be four times the cost of the software" based on ERP implementation studies.[95] Mr. Kruzich believes this is extremely high and has never experienced such outrageous implementation costs in all his years of experience. When Mr. Kruzich was at the Santa Fe Railway in the early 1990's, Santa Fe developed a new transportation system called Transportation Support System (TSS). The system cost just over $70 million, and Mr. Kruzich can say with absolute certainty that it did not cost anywhere near $280 million to implement. NS's implementation cost is grossly overstated.

One fallacy in the ERP Implementation Studies is the fact that it does not specify which software is being implemented. It is common knowledge that some software packages are much less expensive to implement than others and the costs can vary drastically. According to Accounting Software Research, "implementing a mid-market to high-end accounting software system will typically range from 1:1 to 2:1 compared to the cost of the software."[96] Further support comes from ERP Wisdom, which stated that implementation cost "can be as low as 50 percent of the TCO if the software is based on one-tier architecture and it can be reduced if the buyer has done prior preparation."[97]

Clearly these numbers are much lower, and more in line with Mr. Kruzich's experience. Mr. Kruzich agrees that implementation cost on the Oracle software should be increased, and

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[95] *See* NS Reply, p. III-D-176.
[96] *See* e-workpaper "DRR-Software Implementation Cost Ratios.pdf," p. 3.
[97] *Id*, p. 2.

should reflect a more reasonable cost that is based on previous research. However, he disagrees that the number is four times the cost of the software and believes a more reasonable number is one times the cost of the software (which many studies have suggested).

RMI software design has generic provisions in the software architecture that would make it easier to interface with commonly used accounting, human resources and marketing sales software such as Oracle. Also, it seems as though an RMI implementation cost of $4.5 million would have partial costs related to accounting, human resources and marketing software packages. NS does not provide any detail as to what is included in the $4.5 million. As discussed above, Mr. Kruzich concurs that one times the software cost is appropriate for Oracle software packages, particularly since the $4.5 million RMI implementation cost most likely includes some of this cost. Therefore, DuPont has increased its Capital Budget by $5,020,816, based on Rebuttal employee counts (this increase includes all three software packages: accounting, human resources, and marketing/sales).

c. Communications

DuPont accepts NS's expense of $112,200 for backup lines at major yards. This will provide reliable connectivity and ensure continuous operation. DuPont also acknowledges that the annual expense for Microsoft Cloud email should not have been included in Opening and has been eliminated in Rebuttal.

d. Hardware

On Opening, DuPont proposed that Accounting and Human Resources each have four servers at a total cost of $137,056. NS proposed that Accounting, Human Resources, and

Marketing and Sales each have one large server, rather than four small servers. DuPont concurs and has given each department one large server for a total cost of $284,478.

After review of DRR's routers, Mr. Kruzich has decided that six (6) additional routers are needed at DRR's large yards. This leads to an increase of $21,870, for a total of $43,740.

NS has proposed additional network switches for headquarters. Mr. Kruzich concurs with this assessment and has added six (6) network switches to the headquarters network. This is an additional $20,028 that has been added to the capital budget.

NS also proposed "that the DRR lease a Telecom T1 line back-up for access to the DRR network and RMI at the eight DRR hump yards."[98] As described in DuPont's Rebuttal Part III-C, the DRR does not have any hump yards, therefore these additional costs are not required.

DuPont has also adjusted the volume and total cost for DRR's Security System. DuPont acknowledges the number provided in Opening was low and has increased the number of X6500 Firebox's to 87. This is still lower than NS's claim that DRR needs 122. There is no reason for so many security boxes, DRR will need only one at each location, except for headquarters and any other large office. DuPont's total cost for the security system is now $356,700.

e. Miscellaneous

DuPont has added the M-Crew Monthly charges to the DRR Operating budget. As discussed previously, DuPont did not include M-Crew devices in its Opening evidence and has since added the devices and costs to Rebuttal. M-Crew devices will allow the DRR to be more efficient by having train & engine personnel input car status from the field in real time. It will

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[98] *See* NS Reply, p. III-D-177.

GENERAL & ADMINISTRATIVE EXPENSE

also improve the accuracy of reporting and fully utilize the TEY personnel. DuPont has added a total cost of $4,695,216 for M-Crew Outsourcing.

NS accepts DuPont's remaining IT proposals including hardware configuration, pricing, crew calling, dispatching and telephone systems. However, NS scales these items up to account for the additional staffing. DuPont will make adjustments to the IT Rebuttal Capital and Operating Budgets when employee count adjustments on Rebuttal affect these costs.

Although NS asserts that the IT systems solution provided by DuPont does not represent an integrated approach to data processing, and would require a significantly larger IT staff, NS accepts the backbone of the system which is the RMI operating system.

NS also contends that DuPont has not provided adequate hardware (servers) to allow the IT system to function properly and service the DRR staff. The biggest fallacy of NS using an employee count scaling approach is that it is not linear to the computer needs of DRR. For example, if one were to acquire computer equipment with a memory of 16GB, this would support a great deal of activity. There would be no need to purchase another until the first is fully utilized, which means DRR could add several hundred people before purchasing another. This is why using the scaling approach to determine computer needs is not appropriate. It is more of an incremental, or step-rate affect.

Also, using the scaling approach, NS is assuming that each person requires the same computer needs. This would assume that a train & engine employee or a Track Labor employee would require the same computer needs as a Waybill Clerk or a Statistician. The scaling methodology for determining computer needs should be rejected.

GENERAL & ADMINISTRATIVE EXPENSE

2. Other Out-Sourced Functions

As described earlier, several functions customarily provided in-house by large Class I railroads such as NS can be out-sourced by the DRR. NS agrees the DRR will be able to out-source certain functions, but does not agree completely as to what those functions are, or the cost of outsourcing. DuPont responds to the defendants' position on each of these issues below.

a. Payroll Processing

NS has accepted DuPont's proposal for Paychex to process payroll at $50 per head. However, NS added an outsourced cost for an Employee Assistance Program (EAP) which NS claims "is a commonly provided benefit for non-agreement employees to connect them with services such as child care, mental health and substance abuse programs, and financial advisors."[99] NS's EAP proposal is unreasonable due to the fact that EAP's are fringe benefits, and the cost for any such program will be included in the calculation of fringe benefits. By outsourcing the EAP, NS is double-counting these costs.

b. Audit and Internal Review

DuPont accepts NS's proposal to use 0.03 percent of revenue, approximately $1,702,004, as a benchmark for internal auditing costs.[100] However, NS has overstated the DRR's external audit costs. NS used audit fees of $566 per million in revenue, which was found in the Audit Analytics December 2011 report, and is based on the audit fees of Russell 1000 companies.[101] NS's use of Russell 1000 audit fees is unreasonable due to the large degree of variation in company size. The Russell 1000 Index is made up of companies with market capitalization's that

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[99] *See* NS Reply, III-D p. 179.
[100] *See* NS Reply, III-D p. 180.
[101] *See* NS Reply e-workpaper "External Audit Benchmarking.pdf."

range from $1.3 billion to $540.2 billion. The audit fees for these companies will vary greatly and should not be relied upon when calculating DRR's external audit fees.

Instead, DuPont has used NS's actual audit fees and revenue for the past three years to calculate a more reasonable and reliable cost for the DRR. DuPont did so by calculating the percent of NS revenue that was spent on audit fees for the years 2009 through 2011.[102] After averaging the results, DuPont came to the conclusion that 0.0257 percent of NS's revenue goes towards external audits.[103] Applying this percent to the $5.673 billion 2009/2010 revenues of the DRR produces external audit costs of $1,458,050.

3. Start-up and Training Costs

On Reply, NS accepts DuPont's calculations of the average cost to train individual employees, but makes three adjustments: 1) NS adjusts total training costs to incorporate additional staff; 2) NS uses its incorrect fringe benefit ratio of 49.2 percent; and 3) NS modifies DuPont's attrition rates. DuPont's position on each adjustment is discussed below.

a. Number of Employees

On Opening, DuPont proposed the DRR be staffed with 4,971 employees. NS proposes between 8,800 and 9,000 DRR employees.[104] DuPont has adjusted the total number of employees and on Rebuttal staffs the DRR with 5,425 employees.

b. Fringe Benefit Ratio

In Opening, DuPont proposed a fringe benefit ratio of 37.5 percent of wages. NS contends DRR must use a fringe benefit ratio of 49.2 percent. As discussed in Part III-D,

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[102] Audit fees were found in NS's annual proxy statement; Revenue was found in NS's annual report.
[103] *See* DuPont Rebuttal workpaper "External Audit.xlsx."
[104] NS staffs DRR with 8,978 employees in Table III-D-17 of NS Reply, III-D-76 and 8,808 employees in "DRR Operating Expense Reply.xlsx."

GENERAL & ADMINISTRATIVE EXPENSE

DuPont has shown NS's 49.2 percent fringe benefit ratio to be unreasonable, and continues to use a fringe benefit ratio of 37.5 percent.

c. Attrition Rates

In Opening, DuPont included an attrition rate of 1.8 percent based on testimony related to "quit rates" among unionized employees of the four major Class I railroads presented on behalf of these railroads by Dr. Robert Topel, PhD. to the Emergency Board No. 243 on Behalf of the Railroads Represented by the National Carriers' Conference Committee before the National Mediation Board Case Nos. A-12569; A-13570; A-13572; A-13573; A-13574; A-13575; A-13592. While the DRR employees are not unionized, the pay rates and fringe benefits provided DRR employees in all crafts by both DuPont and NS are based on NS' actual pay rates to unionized employees, which were the subject of the proceeding before the Mediation Board.

NS characterizes DuPont's attrition rate from Dr. Topel's testimony as "a willful misreading of a document of particular unions' quit rate."[105] However, reading of Dr. Topel's testimony on behalf of the major Class I railroads, including NS, explains in detail why turnover among union employees of the Class I carriers is remarkably low. Dr. Topel states:

> The carriers' data on employee turnover provides further evidence of the economic rents that Coalition Employees enjoy as a result of their large compensation premium…..[106]

> These dynamics are reflected in three dimensions of labor turnover: the quit rates among Coalition Employees, the job tenures of Coalition Employees (as compared to similar workers in other industries and occupations), and the propensity of furloughed Coalition Employees to accept recall, even after very long separations. Each of these metrics demonstrates that Coalition Employees have extraordinary attachments to their jobs and that additional above-market compensation increases are not necessary.[107]

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[105] *See* NS Reply, p. III-D-153.
[106] DuPont Rebuttal Workpaper "Attrition Rate.pdf", p. 3.
[107] *Id.*

GENERAL & ADMINISTRATIVE EXPENSE

> By comparison, the average [monthly] quit rate overall among bargaining unit jobs with the Carriers is less than 0.15 percent – *less than one-tenth the rate of other Transportation, Warehousing and Utilities jobs.*[108] (emphasis in original)
>
> Indeed, once hired, Coalition Employees remain employed with the same employer more than twice as long as employees with similar educational levels and skills in other industries. Similarly, I find that voluntary terminations among Coalition Employees are extremely rare – another indicator that these jobs are highly desirable in comparison to alternatives.[109]

It is clear from Dr. Topel's testimony that turnover among Class I carriers union employees of all crafts is extremely low, in large measure because of the very attractive compensation packages paid by the carriers, and by the DRR. Based on Dr. Topel's testimony, DuPont accepted the monthly quit rate of 0.15 which when multiplied by 12 months equals an annual rate of 1.8 percent. In Rebuttal, DuPont continues to use rate for attrition among DRR employees.

4. Travel

In Opening, DuPont provided annual travel expenses for certain senior and mid-level management personnel of $9,751 based on the annual survey published by Runzheimer International for travel in 2009. In Reply, NS argues travel expenses should be modified for three reasons. First, NS argues that the number of positions to which travel expenses are applied should include numerous additional positions. DuPont has reviewed the positions added by NS

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[108] *Id*, p. 21.
[109] *Id*, p. 30.

GENERAL & ADMINISTRATIVE EXPENSE

and agrees to add the following positions: Treasurer, Controller, Directors – Purchasing, Director – Economics and Planning, Managers – Real Estate, and seven (7) Help Desk PC Technicians.[110]

Second, NS argues that DuPont is "cherry picking" travel expenses by using only 2009 data and that, if Runzhiemer's data for 2008 and 2010 are included, the annual travel expense per employee would increase from $9,751 to $10,261. DuPont is not cherry picking. The Complaint in this proceeding begins in June 2009, thus the base year for all expenses is 2009. For example, both DuPont and NS included only 2009 expenses for numerous categories of expenses, including wages, fuel, loss and damage, ad valorem taxes, trackage rights payments and lift and ramp costs. Further, as the 2009 operating expenses increase throughout the life of the DCF model based on actual and forecasted expenses, it is not appropriate to artificially inflate the 2009 expense levels by averaging in other years with higher expenses. In Rebuttal, DuPont continues to rely on the Runzhiemer survey for 2009.

Finally, NS argues that the Runzhiemer annual travel expense does not include entertainment expense and therefore NS increases its travel expense by 5.4 percent to account for entertainment expense based on NS experience for 2008 through 2010. DuPont agrees that the travel expense should be increased to reflect entertainment expense, but instead of mixing NS's entertainment expense with the Runzhiemer travel expense, DuPont adds entertainment expense of 2.95 percent of travel expense based on the 2009 Runzheimer report provided by NS in Reply, thus matching the travel and entertainment expense from a single source.[111]

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[110] It must be noted that NS indicates that outside Directors are also reimbursed for travel expenses, implying that DuPont had omitted this expense. In fact, DuPont provide travel expense for outside Directors in Opening and continues to do so in Rebuttal.

[111] *See* NS Reply e-workpaper "Runzheimer White Paper.pdf," p.2.

GENERAL & ADMINISTRATIVE EXPENSE

After making the adjustments discussed above, DuPont's travel expense for DRR employees on Rebuttal equals $1.3 million in the Base Year.

5. Bad Debt

NS assumes the DRR will not receive 100 percent of the revenue it bills to its customers and that the DRR would experience a write down of doubtful accounts comparable to that of Class I railroads. NS indicates that the average amount of uncollectible accounts for all seven Class I railroads over the five-year period from 2007 through 2011 is 0.05 percent of revenue.[112]

Based on *AEPCO*, DuPont accepts the inclusion of bad debt expense in Rebuttal, however, DuPont does not accept NS's uncollectible amount of 0.05 percent of revenue for two reasons.

First, NS's benchmark is based on the time period 2007 through 2011. If DRR's bad debt is to be considered "a legitimate business expense," the time period should be similar to that of DRR's operations. Given that 2007 and 2008 are prior to the start of the railroad, DuPont will use the 2009 through 2011 time period to determine the average amount of DRR bad debt.

Second, NS's use of all Class I carriers is unreasonable. NS claims that, "[t]o obtain the best approximation of the average amount of bad debt that the DRR would encounter over the SAC analysis period, NS calculated the average amount of uncollectible accounts as a percentage of revenue for all seven Class I railroads..."[113] This is merely a way for NS to hide the fact that NS has a very low bad debt expense. NS's uncollectible accounts as a percentage of revenue for 2009 through 2011 was only 0.01 percent, whereas all Class I carriers had a ratio of 0.03 percent

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[112] *See* NS Reply, p. III-D-190.
[113] *Id.*

GENERAL & ADMINISTRATIVE EXPENSE

during the same period. The DRR should not have to be burdened with the debt of other railroads, while NS customers pay their bills reliably and in a timely manner.

In short, DuPont agrees bad debt should be included as an expense and has used NS's real-world uncollectible accounts as a percentage of revenue for the time period 2009 through 2011, which equals 0.01 percent of revenue, or $786,599.

TAB 2

MAINTENANCE OF WAY

A. INTRODUCTION

DuPont's maintenance-of-way ("MOW") plan for the DRR is described in Opening Exhibit III-D-3. NS's experts claim DuPont fell short of its burden to present evidence of likely DRR MOW staffing and expenses that is consistent with real world railroading.[1] In Reply, NS MOW experts proposed a MOW plan with more than double DuPont's DRR staffing level that is based on flawed assumptions, and bloated with new, unnecessary departments, new positions, and extra personnel that would not be required for the MOW operations and annual maintenance of the DRR. DuPont's experts reaffirm their approach to MOW staffing and annual costs taken on Opening, and strongly disagree with NS's assertions that the DRR is understaffed. NS's assertions will be shown to be unrealistic, unsupported by evidence, unreasonable, unnecessary, and not based in fact.

In Opening, DuPont presented a workable, reasonable plan for the DRR MOW department based upon the projected maintenance needs of the DRR. DuPont's plan reflected the reduced tasks and costs associated with a newly constructed railroad operation, factored in the use of new materials in the DRR's construction, considered the projected annual tonnage, separated the tasks and costs of capital projects performed by contractors, considered the ten-year life of the DRR, and other factors.

Although DuPont's experts designed the MOW plan specifically for a brand new DRR system with no track or bridge defects, the NS experts have designed a MOW planned for the existing NS system that more than doubles DuPont's proposed MOW staff, creates entirely new, and unnecessary, departments and positions, and increases the numbers of employees in needed

[1] *See* NS Reply, p III-D-195

roles without demonstrating a need for more employees.[2] The existing NS system is much larger than the DRR and is comprised of older infrastructure constructed well over 100 years ago to a lower standard, which has all gone through phases of deferred maintenance, roadbed and track joint pumping, archaic construction techniques, and have existing defects and age-related maintenance needs. Consequently, the existing NS system would be expected to have much greater MOW requirements than the brand new DRR.

Furthermore, the NS MOW plan reverts to the staffing levels characteristic of the Southern Railway of the 1970's or NS in the early 1980's. As the DuPont experts designed the DRR MOW plan, they considered the tasks required for the maintenance of completely new railroad infrastructure, the type of track materials, bridges, and other components used in construction, a ten-year life, no union restrictions, the use of contractors performing most annual testing and maintenance, and, the use of modern technology and equipment.

The NS MOW experts failed to provide a model, or evidence for adding the new, unnecessary MOW departments and staff. DuPont stands by its Opening MOW staffing and equipment configuration and maintenance needs for the DRR with the exceptions of minor changes outlined in the remainder of the rebuttal

1. **Staffing and Maintenance Needs for a Completely New Railroad Infrastructure**

The appropriateness of the DRR MOW staffing plan and maintenance costs should be reviewed and evaluated based on the fact that the DRR is a "new" railroad with new roadbed, new ditches, a crushed stone sub-ballast roadbed cap, complete right-of-way clearing and

[2] NS's extensive overstaffing is discussed later in this Exhibit and a list of the overstaffing is provided in Appendix A to this Rebuttal Exhibit

grubbing, all new track and turnouts, new culverts and new concrete and steel bridges, etc The maintenance costs for new railway infrastructure construction would be minimal for all new construction items within the first 10 years of service. One cannot reasonably compare the cost of maintaining a newly constructed railroad to the cost of maintaining an existing railroad that has a staff structure required to maintain the older existing railroad with its many imbedded deficiencies.

NS MOW experts fail to recognize in Reply that, based on having a completely new railroad infrastructure, very little maintenance will be required, and that staff requirements for all aspects of track maintenance will be far less on the DRR than on the existing NS lines being replicated, for many reasons that will be discussed herein. Since NS MOW experts failed to mention, explain, or acknowledge in Reply the significance of having a completely new railroad with respect to annual maintenance needs and staffing, it is necessary to identify and explain the major differences between the MOW needs of the DRR as compared to the replicated NS lines [3] The DRR, being new, does not face the same challenges that the existing NS replicated lines face. The DRR has a sound, newly constructed, undamaged roadbed, unlike the existing NS roadbeds which have failures and weaknesses due to archaic construction techniques at the turn of the century, having had jointed rail in the past, deferred maintenance over the course of decades in the mid-1900's, and poor drainage in the past DRR culverts and bridges are new, and are not failing due to the age of the structures, or due to the type of material used originally.

The DRR is not trying to maintain rail that was laid 10, 20, 30 or 40 or more years ago Since the DRR is constructed with all new ties, the tie life cycle on the DRR is completely

[3] NS experts *did* acknowledge that the DRR bridges are new, and would therefore require less maintenance over time *See* NS Reply, p III-D-235.

different from the aged ties in the existing NS main lines, sidings and other tracks To try and compare the new DRR with the existing NS system, as NS does in Reply, is unreasonable, unrealistic, unsupported, and illogical. Even spot maintenance needs will be drastically lower with a newly constructed system compared with an older, aging track system.

2. Significant Flaws in the NS MOW Plan and Costs in Reply

The flaws in the NS plan for MOW in Reply are very significant, and are rooted in the following misperceptions, false assumptions, and general failures to admit the condition of the DRR and the realistic MOW needs of the DRR. After consideration of the major flaws presented below, it will be evident that the NS MOW Plan in Reply is flawed beyond reason and logic, and not realistic for the DRR, and should not be accepted, and, that the MOW plan presented by DuPont on Opening is realistic, supported, and feasible, and should be used, with the modifications acknowledged in Rebuttal

a The fact that NS experts completely ignore, omit, or otherwise fail to acknowledge the lessened need for track and roadbed maintenance and maintenance staff for a newly constructed railroad, while admitting that new construction for bridges results in lower maintenance needs, is hypocritical, is a major omission, is one of the greatest flaws in the NS MOW Plan. This failure to acknowledge the true conditions on the DRR creates confusion and problems that are perpetuated throughout the NS Reply. This basic flaw in the NS Reply is one of the primary causes for the overstatement of maintenance staff and annual maintenance cost requirements for the DRR. NS cannot purport to present a realistic MOW plan and realistic costs if its experts fail to consider the real physical condition of the DRR infrastructure immediately following construction, and within the 10-year life of the DRR. Therefore, the NS MOW staffing and maintenance plan is unrealistic and unsupported.

b. NS experts' use of an average Roadmaster territory of just over 100 route miles per Roadmaster is archaic, anachronistic, and unrealistic compared to its own Roadmaster territories and other Class I Roadmaster territories. NS experts seem to be stuck in the year 1970, when 100 route mile long territories were more common, and built the NS Reply MOW Plan around this anachronistic practice. It is convenient for NS to criticize the DRR for using larger Roadmaster territories, while ignoring the fact that

MAINTENANCE OF WAY

NS currently uses Roadmaster territories greater than 100 route miles. Using such small Roadmaster territories is unsupported and unrealistic when compared to the real world NS operation, and based on the reduced work load for a newly constructed railroad infrastructure. This is a significant flaw in the NS reply that will be discussed in detail in following sections.

c Compounding the flawed use of average 100 mile long Roadmaster territories, and based on roughly doubling the number of Roadmasters, the NS experts arbitrarily chose to double the number of MOW local work crews, welding crews, smoothing crews, and other related work crews without explanation, supporting evidence, or basis in reality. And, this arbitrary doubling of the number of Roadmasters and work crews doubled the amount of equipment required This arbitrary doubling of most of the MOW crews and equipment will be addressed fully in following sections of the rebuttal herein.

d NS experts' fabrication of entirely new and unnecessary departments and positions (e.g. the Construction Department, the Industrial Development Department, and the Technical Services Group, and new positions for design engineers within the proposed DRR MOW Department is another significant error within the proposed NS MOW plan proposed in Reply, and unnecessarily inflates the number of MOW personnel A construction department is not necessary because the DRR has already been constructed for the planned traffic and infrastructure capacity (no new tracks are necessary from a capacity standpoint). An Industrial Development Department is not necessary because the DRR is already hauling the level of traffic generated for the DRR and used in the SARR evaluation. The Technical Services group provides for functions that were unnecessary for the DRR, completed during design and construction, or were covered by DuPont's DRR MOW staff. Creating these unnecessary departments is unrealistic, unfeasible, and unsupported, and appears to be simply an effort to fabricate as many positions and employees as possible to drive up the proposed annual MOW costs for the DRR in Reply This flaw is discussed in detail in Appendix A to this Rebuttal Exhibit

e. NS experts' creation of a broad and expansive, multilayered, but unsupported, management hierarchy within the DRR on Reply is completely unnecessary, and is another significant error within the proposed NS MOW plan in Reply The NS experts fail to recognize efficiencies in not having a unionized workforce, and fail to use efficiency of size and economy of scale in any manner in developing their top-heavy MOW plan. This will be discussed in detail in following sections.

f. In Reply, NS experts fail to acknowledge the significance and ramifications of the fact that contractors perform the capital project work on the DRR rather than DRR company forces. NS experts fail to recognize or acknowledge that the use of contractors for all capital program work significantly lessens the need for local MOW crews, local manpower, supervision, equipment, and related costs in support of

capital projects each year. The need for local MOW crews in support of capital projects is substantially reduced by using contractors to perform capital work instead of the railroad using very large, highly equipped, seasonal, unionized system-wide work crews Failure to mention or acknowledge this difference is another significant flaw in the NS reply, which will be explained and addressed in detail in following sections of the rebuttal herein

g. NS's experts state that DuPont presented a staff size at opening that was not sufficient to maintain the DRR. DuPont experts reject this claim and point out that the NS experts failed to mention that their creation of a much larger railroad infrastructure in Reply resulted in an artificial, inflated, unsupported need for more MOW field and office employees, more layers of supervision, more related equipment and more related employee positions, resulting in a higher annual maintenance cost

h. NS experts use their expertise to justify and wrongly base their MOW plan on conditions and needs of the existing NS lines being replicated, ignoring the actual physical condition of the new infrastructure and the actual maintenance needs of the newly constructed DRR.

3. Differences Between the Newly Constructed DRR and the Existing NS Lines Being Replicated

NS experts fail to mention, discuss, or acknowledge the significant differences between the new DRR railroad infrastructure and the existing replicated NS infrastructure that would result in a reduction in MOW staff needs and annual maintenance needs and related costs on the DRR if properly considered. Mr. Crouch lists significant differences between the new DRR infrastructure conditions and the existing NS infrastructure conditions in Rebuttal Exhibit III-D-2, Table 1. NS's failure to even acknowledge, much less consider, these differences in Reply results in a flawed approach to its development of the MOW plan and costs, which should be rejected as unrealistic and unsupported. These differences apply to the maintenance of virtually the entire DRR system.

While the NS experts are very experienced in the management of MOW activities and planning, there is a simple failure to acknowledge the reduced impact on maintenance

requirements of starting with a completely new railroad system on the DRR, along with a 10 year life. NS, in Reply, treats the DRR as if it were like the NS system, constructed in the late 1800's or early 1900's, with the same inherent problems and flaws, and same infrastructure conditions. NS experts should have taken the differences in railroad infrastructure conditions outlined in Rebuttal Exhibit III-D-2, Table 1 into consideration in the development of the NS MOW plan in Reply. but did not. This failure results in a great affect and overstatement of the MOW plan, staffing, equipment, and annual costs, reflecting a major error and omission on the part of the NS experts in their development of the MOW plan in NS Reply. Because the NS experts omitted these facts, the NS MOW plan and costs in Reply are unrealistic, unsupported, inflated, and exaggerated, and should be rejected.

Based on the numerous major flaws noted above, the NS MOW in Reply should not be considered. DuPont reaffirms its MOW plan and staff presented on Opening, with the minor changes noted herein

MAINTENANCE OF WAY

Rebuttal Exhibit III-D-2
Table 1
Differences in DRR and NS Railroad Infrastructure Conditions

New DRR Infrastructure (1)	Existing NS System Infrastructure (2)
1. New, sound, well compacted roadbed, built with modern equipment, no damage from past operations	Old, weaker roadbed built with mules and drag pans, poorer compaction, soft spots from prior jointed rail pumping
2. New compacted crusher run sub-ballast cap, shaped to drain, less track surfacing required	No crusher run sub-ballast cap in original construction, poor drainage, more track surfacing required
3 New, clean working ditches, less need for cleaning	Old ditch lines, sedimentation over time, requiring more maintenance
4 Right-of-way completely cleared and grubbed, no trees, new grass, less maintenance required	Trees outside 20-25' from centerline, heavy vegetation & trees, more maintenance effort required
5. New track, new rail (CWR), new crossties, new clean ballast, new fasteners all requiring little to no maintenance	Old track, components vary in age, older rail, engine burns, shelling, bends, older crossties, fouled ballast, older fasteners, more maintenance
6. Less rail movement and fewer track gage problems	More rail/plate movement and more track gage problems due to age
7 Premium head hardened rail in curves 3 degrees and over	Limited use of head hardened rail in curves
8. New turnouts and switch ties, new frogs and switch points, brace plates, switch plates, switch stands, etc requiring less welding maintenance	Older turnouts and switch ties, worn frogs, switch points, switch plates, and switch stands, requiring more welding maintenance
9. New insulated joints	Older insulated joints
10 Fewer joints in track	More joints in track
11 New grade crossings	Older grade crossings
12. New culverts, all coated steel materials, excellent condition	Older culverts, corroded steel, clay or older stone masonry material
13 New retaining walls	Older retaining walls
14. New bridges built with concrete and steel, all 286k compliant, requiring very, very little maintenance	Older bridges, many timber, older steel, some not 286k compliant, requiring ongoing maintenance

4. DuPont's MOW Staffing Plan Vis-a-Vis Previous Board Decisions

In Opening, DuPont submitted a detailed MOW plan that is based on the DRR traffic group and related densities and the DRR operating plan The DuPont MOW plan considered the

kinds of terrain and climate in which the various portions of the DRR are located and utilizes contractors to perform all of the DRR's program work.[4]

On Reply, NS claims that "DuPont's opening evidence of the DRR's maintenance-of-way ("MOW") staffing and expenses falls far short of its burden to present evidence of likely DRR MOW costs that is consistent with the underlying realities of real-world railroading."[5] NS draws this conclusion based on a comparison of "DuPont's staffing levels to the MOW staffing that the Board has found to be reasonable in recent SAC cases."[6] Specifically, NS claims that "the average track-mile-to-MOW staff ratio for the Board's five most recent decisions with MOW analyses is 4.1-to-1 – less than half of the 10.4-to-1 track-mile-to-MOW staff ratio that DuPont proposes."[7] NS's criticism ignores the fact that the DRR is a highly-efficient and productive railroad that is constructed to handle the peak period traffic over the 10-year DCF model life.

NS seems to be claiming that the DRR could do no better than either the complainants in prior cases before the Board or real-world railroads Contrary to the NS's claims, there are many reasons that the DuPont DRR employee to track mile ratio would be higher than those developed in the Board's recent decisions.

First, the DRR is one of the largest SARR's considered by the Board to date and benefits from economies of scale that have not been seen before These economies of scale result in a reduction in the number of managers, the elimination of unnecessary layers of management, and more efficient territory sizes and related staffing. Also, these economies of scale will result in

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4 *See* DuPont Opening, p. III-D-22
5 *See* NS Reply, p. III-D-195.
6 *Id.*
7 *See* NS Reply, p III-D-198.

the more efficient crew operations. By way of example, in smaller SARR cases, smoothing crews would only cover 250 or 300 miles of track due to the odd length of the system. On the larger DRR, smoothing crew territories conveniently worked out to 400 miles each The result is that fewer crews and corresponding equipment, mechanics, and managers are needed.

Second, the DRR is divided into four Divisions of approximately 1,800 route miles each. This, coincidentally, happens to match the average size of existing NS divisions based on route miles Because there are only four divisions on the DRR, fewer upper level managers are required. Also, because each division is optimally sized, approximately 1,800 miles each, there is little overlap in responsibilities and duties among Roadmaster territories and work crews. Each of these four divisions is optimally sized without being overstaffed.

Third, the DRR MOW plan calls for capital work to be completed by contractors. The Board in past cases failed to recognize that contracted work would result in less need for annual production work by Roadmasters and the MOW local work crews Appendix B contains a detailed listing of the tasks and duties that are not required on the DRR because program work is performed by contractors and not in-house mechanized rail laying and timber & surfacing crews.

Fourth, NS unilaterally added three unnecessary departments to achieve its deflated track-mile-to-MOW staff ratio. These departments include the following:

a. Construction Department - On the existing NS system, there is a design and construction division under MOW/Engineering. There is no need for design and construction management staff on the DRR because the entire DRR has been designed for the proper peak period capacity and the costs related to the design and construction of the DRR have been included in Section III-F).

b. Industrial Development Department - On the existing NS system, there is an industrial development department under MOW/Engineering. There is no need for these survey and design professionals and managers since the DRR has been designed

for the industries included in the DRR traffic group and the costs related to the design and construction of the DRR have been included in Section III-F)

c. Technical Services Group - On the existing NS system, there are positions and functions required for the operation of the NS that are not necessary on the DRR. There is no need for surveying, mapping, GIS mapping, or many of the other services included by NS in Reply The necessary functions included by NS under the Technical Services Group are performed by the DRR staff created by DuPont. There is no need for the Technical Services Group since the entire DRR has been surveyed, mapped, and designed for the proper peak period capacity and the costs related to the surveying, mapping, design and construction of the DRR have been included in Section III-F)

Fifth, on Reply NS included completely unnecessary layers of management. NS included more AVP's, supervisors and managers than are needed for the DRR.

Sixth, NS included many unnecessary design engineers, engineering managers, AVP's, administrative staff and other engineering personnel that are not required because their functions are not needed on the DRR. This staff is unnecessary because the DRR has been designed and constructed to transport the proper peak period capacity and to serve all existing industries. NS failed to acknowledge that, because the DRR was properly modeled and sized for the operating needs of the DRR, design and other technical staff are not actually needed. The only reason that these positions were added was to inflate the size of the DRR MOW staff.

Seventh, NS arbitrarily doubled the number of work crews simply based on its doubling of the number of Roadmasters. NS failed to explain or otherwise support this unrealistic increase in work crews. The primary purpose of this increase is simply to achieve a higher number of MOW employees This also artificially increased the need for supervision and management.

Finally, NS also artificially increased the number of MOW employees by adding more infrastructure, and related maintenance needs, in Reply (hump yards, yards, facilities, etc.).

MAINTENANCE OF WAY

On Rebuttal, DuPont has made minor changes to the efficient and carefully developed MOW plan that it submitted in Opening to reflect the final Rebuttal DRR system.

B. DRR OPERATING STAFF

Based on the significant flaws outlined above in the MOW Rebuttal Introduction, NS's MOW Plan in Reply is not realistic, feasible, or supported, and should not be used.

1. Track Department

DuPont uses 725 employees in the Track Department, while NS, in Reply, uses 1,379.[8] A very large portion of the difference of 654 total employees is accounted for by NS's proposal to double the number of Roadmaster territories. In doubling the Roadmaster territories, NS arbitrarily doubles most of the crews and support staff, positions, and related equipment tied to the number of Roadmasters, without providing any explanation, supporting evidence, or demonstrated need. NS also arbitrarily doubled the number of track crew foremen, track crew laborers, smoothing crews, welding crews,.and other related crews, without an explanation of the need for doubling those positions.

This arbitrary doubling is illustrated by the following quotation:

> The NS MOW experts accept the per-gang staffing and equipment proposed by Mr. Crouch for smoothing crews and accept that approximately one smoothing crew per two Roadmaster districts is appropriate However, because NS MOW experts have provided for an increase in the number of Roadmasters, a corresponding increase in the number of smoothing crews is required.[9]

This is a blatant example of the arbitrary, unsupported increases in MOW staff and equipment made by NS experts, based not on actual needs or supporting evidence, but on a simple, arbitrary doubling of the crews Because the increase in MOW positions and equipment

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[8] *See* NS Reply, Table III-D-51, p III-D-201
[9] *See* NS Reply, p. III-D-223.

MAINTENANCE OF WAY

was arbitrarily doubled without explanation or supporting evidence, the NS MOW Plan provided in Reply should be rejected.

In the introduction to its MOW discussion, NS experts grossly distort DuPont's MOW evidence with their claim that DuPont's field staffing uses an over-simplified, one-size fits all approach based on average route miles,[10] without considering the high tonnage and density, and the unique characteristics of the specific track to be maintained such as track miles and geography, as well as precipitation and soil conditions.[11] While DuPont provided the average route miles covered by various categories of field MOW employees as information, its workpapers show that the districts are similar, but not uniform, in size. For example, the Roadmaster districts vary from a high of 284.58 route miles to a low of 185.7 route miles.[12] Contrary to NS's claim,[13] the Roadmaster and track crew districts were well thought-out by Mr. Crouch, and took into account the gross tonnage, track miles, climate, and terrain in each in each district.

But, the most significant factor affecting MOW Roadmaster territories was the fact that the DRR is newly constructed. Therefore, maintenance requirements are much less than on the existing NS lines. Also, because capital work is performed by contractors, the local Roadmaster and its crews are not needed to perform support roles for capital projects. Other factors are listed in previous sections.

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[10] *See* NS Reply, pp. III-D-197-200.

[11] *See* NS Reply, p. III-D-197.

[12] *See* Opening e-workpaper "MOW Roadmaster Territories xls." As noted later in the text, the route miles shown in that workpaper are understated and have been corrected on Rebuttal and the Roadmaster and track crew territories have been rearranged slightly.

[13] *See* Opening e-workpaper "MOW Roadmaster Territories xls."

MAINTENANCE OF WAY

DuPont begins its response to NS's evidence on MOW personnel with a discussion of the general office staff, and then turns to a discussion of the field maintenance forces.

a. General Office Staff

The MOW function is headed by the DRR's Vice President-Engineering under both parties' MOW plans The Vice President-Engineering, who serves as the DRR Chief Engineer, is included with the DRR's other non-train Operating employees, but his principal duties are to supervise the MOW function NS does not separately discuss the Vice President-Engineering, but does include this position in its list of non-train Operating personnel

NS proposed a Vice President Engineering in G&A, and adds an Assistant Vice President Engineering and a Chief Engineer in MOW,[14] both of which duplicate the function of the DRR's Vice president-Engineering, and are therefore unnecessary. NS therefore adds 2 additional and unnecessary layers of management at the highest level

DuPont provides a total of 30 general office personnel to staff the MOW function; NS proposes a general office staff of 119, or 89 additional employees.[15] DuPont discusses most of this staff in connection with the specific MOW sub-departments for which they are responsible (track, C&S, B&B), while NS discusses all of the general office staff together. A detailed listing of the numerous, unnecessary MOW proposed by NS in Reply can be found in the MOW Appendix A to this Rebuttal Exhibit.

The 89-person increase proposed by NS adds unneeded layers of management that are typical of a Class I railroad and its military-style organization. For example, DuPont provided a Track Engineer, which is equivalent to a Division Engineer, and has a territory size of about

[14] *See* NS Reply e-workpaper "MOW Workforce – 28.xlsx."
[15] *See* NS Reply Table III-D-52, p III-D-202

MAINTENANCE OF WAY

1,800 route miles, which is similar in size to an NS Division. Eight Assistant Track Engineers and four Bridge & Building Supervisors report to the four Track Engineers. The Track Engineers, a Bridge Engineer, Communications & Signals Engineer, Engineer of Public Projects, Engineer of Programs and Contracts, Manager of Administration and Budgets, and a Manager of Environmental / Safety and Training report directly to the Vice President-Engineering – to head these maintenance functions

NS adds many new and additional departments and positions, and increases the number of employees in many positions without demonstrating a need for the positions or number of employees, and without providing supporting evidence or justification for each position based on actual need. The MOW Workforce Spreadsheets simply list positions, number of employees per position, salaries, a brief definition of the position, but provide no evidence supporting the need for each individual position.[16] NS has not explained why the Track, C&S, Bridge and other staff Engineers proposed by DuPont cannot adequately perform the same functions, or why the additional and unnecessary layers of supervision are needed, nor has any evidence been provided that substantiates the need for roughly twice the field personnel for the maintenance of a brand new track, roadbed, bridges, culverts, crossings, turnouts, etc.

The omission of NS's expert comments on the reduced need for annual maintenance based on the completely new track construction is a major flaw in the NS Reply, and results in errors and overstatements of needs throughout the NS Reply The proposed MOW staffing in NS's Reply is unrealistic based on the actual annual maintenance needs and is unsupported by evidence, and should be rejected.

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[16] *See* NS Reply e-workpapers "MOW Workforce – 28 xlsx" and e-workpaper MOW Workforce – 32 xlsx" level "MOW Staff."

MAINTENANCE OF WAY

NS takes an inflated approach to staffing rather than a reasonable, realistic, least feasible cost approach. NS suggests 13 Administrative Assistant/Clerks rather than the 8 proposed by DuPont. NS states that it "conservatively added Administrative staff", and describes the support functions provided by the Administrative Assistant/Clerks at p III-D-206 of the Reply Narrative but fails to explain why 13 clerks are needed to support the MOW staff, rather than the 8 proposed by DuPont (one for each of the Track Engineers, 3 in support of other field-maintenance sub-departments). Many of the additional staff proposed by NS are for functions that would not be required for the DRR (e g. Industrial Development, Design and Construction, etc.). It should be noted that DuPont assigned an additional Administrative Assistant/Clerk to the VP of Engineering; this clerk is also available to assist the MOW staff in performing routine administrative functions

In summary, NS has not demonstrated that Mr Crouch's general office staffing for the MOW function needs to be increased The Board should accept the 30 general office employees proposed by DuPont on Opening

b. Field Staff

In Reply, NS accepts the 8 Assistant Track Engineer (Field) positions with 4 Track Engineers (which NS refers to at times as Division Engineers).

i. Roadmasters and Assistant Roadmasters

NS, while criticizing the use of an average number of route miles per Roadmaster, roughly doubles the number of Roadmasters proposed by DuPont using an average of just over 100 route miles per Roadmaster territory, compared to the roughly 200 mile long DuPont DRR Roadmaster territories And, without any supporting evidence or justification, NS arbitrarily

doubled the number of track crew foremen, track crew laborers, welders, smoothing crews, backhoes and dump trucks, etc. that DuPont experts had associated with each Roadmaster territory (NS also posits additional Roadway Machine Operators, Welder/Helper/Grinders, Ditching Crews and Smoothing Crews) simply because it made the Roadmaster territories smaller, not because there were actual maintenance needs explained or demonstrated.

NS experts suggest that having 200 mile territories is not practical and that an average number should not be used – then, NS experts roughly double the number of Roadmasters, with average Roadmaster territories of just over 100 miles each, with no supporting evidence. Roadmaster territories need to be balanced and have 1 Roadmaster, and 2 Assistants to provide for any extra inspections and covering for employees DuPont provided this balance on Opening in its MOW plan.

NS accepted the number of Assistant Roadmasters, which was based on an "average" territory size of 100 route miles It is convenient for NS to use average size territories when it supports its assertions. The practice of using 100 mile Assistant Roadmaster territories has been in place on NS, and its predecessor, Southern Railway, for decades, and has remained fairly consistent throughout the industry over time. However, class 1 railroads, short lines, and regional railroads, including NS, have been trending upward from the 100 route mile average length of a Roadmaster territory since the 1980's to about 200 miles, primarily due to increases in system or contracted crews, the use of contractors, improvements in technology, and reduced duties over time.

Because the DRR is all new (new rail, new crossties, new turnouts, new roadbed, new culverts, new grade crossings, etc.), there will be very little spot maintenance required, and

because there are no in-house system gangs performing capital improvement work, the local Roadmaster and its track crews have significantly less responsibility than once was typical for a Roadmaster.[17]

NS begins its discussion of the track-maintenance forces by criticizing DuPont's provision of 36 Roadmaster districts,[18] which NS proposes to nearly double, with an increase from 36 to 69 Roadmasters. NS asserts that "DuPont developed its Roadmaster territories by simply assuming an average size of approximately 200 route miles," without any consideration of track miles or other relevant factors such as geography, climate and tonnage [19] NS is wrong; DuPont Witness Crouch did consider these other factors, which he agrees are relevant, with annual gross tonnage being the most significant factor in planning for MOW maintenance and staff sizes, and number of route miles being the most significant factor for determining Assistant Roadmaster territories (as did NS experts)

Mr Crouch did, in fact, consider the DRR's constructed route miles including branch lines, and its mainline track miles, in developing his Roadmaster districts (and track crew assignments).[20] The total route miles and total track miles have been revised to reflect the minor additions described in Part III-B.

Although NS has not provided any evidence as to NS's standards and practices for the number of track miles that can be maintained by a track crew on a newly constructed railroad, the track-mile ranges described above are consistent with practice on other railroads for the level

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[17] *See* Appendix B to this Rebuttal Exhibit for a further discussion of issue.
[18] *See* NS Reply, p. III-D-197.
[19] *Id*
[20] The DRR's route miles have been increased by 16.84 miles on Rebuttal, to 7,293 78 constructed route miles. (The DRR is not responsible for construction or maintenance of the lines over which it has operating rights; those lines are owned and maintained by others)

of maintenance required For example, Mr. Crouch is familiar with an NS track crew based at Savannah, GA. This four-man crew covers approximately 125 mainline track miles in a territory with approximately 20 MGT per mile. It also maintains tracks in six yards as well as industry connection and setout tracks. Moreover, even though NS admitted that less maintenance would be required for DRR bridges, since the bridges would be new, NS experts failed to acknowledge or consider, or mention, that the track crews and other maintenance personnel would have significantly less maintenance work to perform since the track and related infrastructure are all new (new roadbed and sub-ballast cap, new rail, new tie plates, new welds, new rail anchors, all new crossties, new grade crossings, new turnouts, new derails, new culverts, new bridges, new ditches, new seeding and mulching and clearing).

Not only do NS experts fail to support their higher numbers of work crews and Roadmasters, the NS witnesses fail to acknowledge that new track, roadbed, and related infrastructure require significantly less maintenance and spot maintenance.

Large track crews, which were necessitated by labor agreements, are becoming a thing of the past, and today, most railroads use track crews consisting of one foreman and three to four men. On NS, one of the track crew members is typically assigned to the Assistant Track Supervisor (equivalent to an Assistant Roadmaster), who is responsible for inspection of approximately 100 route miles, twice a week NS's Savannah area track crew (described above) has only one foreman and three men, one of whom is assigned to the Assistant Track Supervisor who uses the employee for assistance with inspections and miscellaneous repairs Thus, as a practical matter, the crew consists of only three people.

MAINTENANCE OF WAY

In the past, before implementation of the new FRA Roadway Worker Protection Rules, there was a need for additional personnel in track crews to perform flagging protection services for the crew Employees are not generally used in this manner today, with the advent of advanced traffic control systems and improved systems for communications with the dispatcher, granting track time to work crews rather than having to have flagmen from within the work crew.

In Reply "NS MOW experts accept DuPont's approach for salaries for the DRR's MOW personnel "[21] DuPont reaffirms its positions and salaries, with minor increases in the number of positions outlined herein.

In Reply, NS experts make several claims that the track crew territories and Roadmaster territories proposed by DuPont are too large [22] NS bases this assertion on past practices with a unionized workforce and restrictions, and without consideration given to the reduced maintenance needs, or the fact that capital work is performed solely by contractors.

NS experts fail to mention that their local work crews on the existing NS lines being replicated perform many more tasks currently than would be required for the DRR (omitted by NS experts and not acknowledged), as listed previously. The DRR local maintenance crews cover an 80 route mile territory. Contractors perform all weed spraying, testing, road crossing paving, rail replacement of worn rail, timber and surfacing projects, etc. (omitted by NS experts and not acknowledged), therefore, there is no need for local crew support of capital projects, grade crossing maintenance, rail laying, or other contracted work This is a very significant difference in MOW maintenance needs between the DRR and existing NS lines being replicated (omitted and not acknowledged by NS experts).

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[21] *See* NS Reply, p. III-D-208
[22] *Id.* pp. III-D-207-212.

MAINTENANCE OF WAY

The Roadmaster will likely have to make work for the local crew to perform during much of the 10-year life of the DRR because maintenance needs will be so low due to the new construction. Local crews will likely perform minor spot maintenance duties such as sweeping, cleaning and lubricating turnouts, occasionally replacing a defective rail (contractors test the new rail based on annual gross tonnage over each line), sweeping snow from switches or lighting switch heaters in the winter in northern territories, and will provide support for division smoothing crews, ditching crews, welding crews, etc. An 80 route mile territory is very reasonable based on the level of maintenance required for the newly constructed DRR

NS experts attempt to compare the DRR with the existing NS lines being replicated as if this were apples-to-apples That approach is unreasonable, unrealistic, and unsupported. Comparing the maintenance needs of the DRR (newly constructed with all new track and turnout components and roadbed) to the existing NS lines being replicated (with aging ties, older rail and other track materials that vary in age from new to 40 years old, or more) is unrealistic DuPont objects to the NS approach that omits any discussion or acknowledgement of the different conditions of materials and infrastructure between the DRR and the existing NS lines The NS MOW plan presented in Reply should not be accepted because it is unrealistic based on the level of maintenance required for a new railroad infrastructure.

In the NS Reply, NS experts also propose to increase the numbers of employees for other categories of track maintenance, including roadway machine operators, welder/helper/grinders, lubricator repairmen, Roadway Equipment Mechanics, ditching crews and smoothing crews, apparently, based solely on its increase in the number of Roadmaster territories, and not based on the requirements for maintenance work to be completed, and without explanation or supporting

evidence.[23] NS provides no explanation for why it increased the number of crews and/or personnel from the number provided in DuPont's Opening MOW plan, which were well-explained,[24] and NS does not even discuss several of these categories in its Reply Narrative.

It appears that NS roughly doubled the number of Roadmaster territories based on an average Roadmaster territory of just over 100 route miles (half the DRR route miles proposed by DuPont), and without explanation or supporting evidence, arbitrarily doubled the related MOW staff and equipment that had been linked to each Roadmaster territory, basically doubling the numbers of Track Crew Foremen, Track Crew laborers, Welders and Helpers, Smoothing Crews, etc. This practice accounts for a large portion of the increase in MOW staff size between DuPont's DRR and the NS MOW Plan in Reply.

The doubling of Roadmasters yields an average Roadmaster territory size of roughly 100 route miles, providing one Roadmaster and one Assistant Roadmaster per territory, which is unrealistic and unsupported. This is neither a common practice for every Roadmaster territory on the existing NS, nor is it common practice on other railroads. Using Roadmaster average territories of 100 route miles would have been appropriate in 1970, on a railroad that was aging, constructed in the 1800's, and which had been subject to deferred maintenance over several decades; however, since the 1980's, the trend on Class 1 railroads has been to have larger Roadmaster territories, while keeping the Assistant Roadmaster territories consistent, with an average of 100 miles for each Assistant Roadmaster

[23] *See* NS Reply e-workpapers "MOW Workforce – 28.xlsx" and "MOW Workforce – 32 xlsx" level "MOW Staff"

[24] *See* DuPont Opening Exhibit III-D-3, pp 5-11

MAINTENANCE OF WAY

On the DRR, each Roadmaster supervises two (2) Assistant Roadmasters. The reason that Assistant Roadmaster territories have not expanded is due to their main responsibility for track inspection, and the physical constraints of getting track time for inspections

In addition to the modern trend of larger Roadmaster territories, the simple fact, not acknowledged by the NS experts, is that the DRR is completely new, with all new rail, all new ties, all new turnouts and derails, all new roadbed and sub-ballast, new ditches and culverts, new bridges, a completely cleared, seeded and mulched right-of-way. etc

Using an average Roadmaster territory of close to 100 route miles is unsupported. unreasonable, and unrealistic when compared to the existing NS lines and other Class 1 railroads, many of which have territories close to 200 miles, and their existing conditions are an aging railroad infrastructure, not newly constructed. The NS claim is unsupported by evidence, and is unreasonable and unrealistic

ii. Track Crews

NS arbitrarily doubled the number of local work crews based on the fact that it used smaller Roadmaster territories, and NS failed to explain the difference between the level of responsibilities and tasks necessary for the work crews on the DRR as compared to the local work crews on the NS lines being replicated.

The number of work crews listed in the MOW Plan provided by NS in Reply is unrealistic, and unsupported. DuPont reaffirms that proper size of its local work crews presented on Opening.

MAINTENANCE OF WAY

iii. Roadway Machine Operators

In Opening, DuPont provided for MOW roadway machine operators for the purpose of operating backhoes and dump trucks for each Roadmaster territory as well as six (6) dozers. The machine operators for other crews, such as the operators for tampers, ballast regulators for the smoothing crew and ditching crew operators, were included in DuPont crew counts.

Because NS added much more unnecessary equipment to the DRR in Reply, which was unrealistic and unsupported, NS also added more machine operators DuPont rejects the arbitrary doubling of the number of MOW crews and likewise, the number of machines, as unsupported and unrealistic DuPont asserts that its MOW staffing for roadway machine operators is reasonable and realistic.

NS's proposal to add Vehicle Operators is unsupported There is no reason why the Roadway Machine Operators (and in particular the dozer operators, who have time available for other tasks when their equipment is being moved) cannot be cross-trained and licensed to operate larger vehicles when the need arises. Most materials needed by the track and other crews are transported to the worksite by the crews' assigned trucks. Vendors and contractors also deliver materials to worksites where, when, and as directed by the Roadmasters or Assistant Roadmasters

iv. Welders/Helpers/Grinders

In Reply, NS states... "DuPont provided one welding gang per DRR Roadmaster for a total of 36 Welder/Helper/Grinder crews, which is completely inadequate "[25] DuPont rejects this unsupported opinion.

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[25] *See* NS Reply, p III-D-217

MAINTENANCE OF WAY

NS experts fail to recognize that they the existing NS system replicated by the DRR is composed of used components in varying stages of their useful life. Because the DRR is constructed new, with all new materials, the maintenance needs will be much less for the DRR, just as NS has acknowledged that maintenance for new bridges will be much less than for the existing bridges.

The NS increase in welding crews also is based on its arbitrary doubling of the number of Roadmasters, without any demonstrated need.

v. Rail Lubricator Repairmen

DuPont experts based the number of roadway flange lubricators on Opening on an average number of miles of carry provided by Portec In Reply, NS experts presented a number of rail flange lubricators in actual use on the NS lines being replicated, accounted for on the track charts provided by NS. The DuPont experts accept this quantity,[26] and accordingly increase the number of rail lubricator repairmen from 18 to 38. DuPont also provided for the additional hi-rail trucks necessary for the additional repairmen

vi. Roadway Equipment Mechanics

Based on an unsupported higher number of pieces of equipment suggested by NS experts, NS increases the number of roadway equipment mechanics on the DRR. DuPont asserts that the increase is unsupported, and results primarily from NS experts arbitrarily doubling the number of MOW crews, and other crew increases, without supporting evidence of need.

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[26] *See* NS Reply e-workpaper "Rail Lubricators.xls "

MAINTENANCE OF WAY

vii. Ditching Crews

In Reply, NS states, "NS MOW Experts accept the proposed crew size and equipment per crew, but disagree about the number of ditching crews required."[27] NS experts fail to recognize that the DRR is newly constructed; that all ditches are new, all slopes are stabilized; all culverts are new; all cut slopes have been stabilized with seeding and mulching; and, that little ditch maintenance will be required in the ten-year life of the DRR

Ditching needs aggregate over time due to erosion of slopes DuPont asserts that its number of ditching crews is very conservative for the DRR, and that NS's claim is unrealistic and unsupported

viii. Smoothing Crews

In Reply, "The NS MOW experts accept the per-gang staffing and equipment proposed by Mr Crouch for smoothing crews and accept that approximately one smoothing crew per two Roadmaster districts is appropriate. However, because NS MOW experts have provided for an increase in the number of Roadmasters, a corresponding increase in the number of smoothing crews is required."[28] DuPont rejects this approach as simplistic, unrealistic, arbitrary, and unsupported. DuPont based its Smoothing Crew size on the number of miles typically associated with that type of crew, which is 400 miles per crew NS experts simply doubled the number of Smoothing Crews based on its increase in the number of Roadmasters, not because of any supporting evidence, the number of miles covered, or other valid reasons.

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[27] *See* NS Reply, p III-D-220
[28] *Id.* p. III-D-223.

MAINTENANCE OF WAY

DuPont reaffirms its number of Smoothing Crews proposed for the DRR on Opening as reasonable and realistic, and rejects the NS approach in Reply as arbitrary, unrealistic, and unsupported.

2. Communications and Signals Department

DuPont's discussion of its proposed C&S staffing is set forth on Opening Exhibit III-D-3.[29] In Reply, NS raises several criticisms of DuPont's proposed staffing.[30]

In Rebuttal, DuPont has added five (5) MOW control center technicians as recommended by NS. NS adds signal department staff related to hump yards. As discussed Part III-C, the DRR does not have any hump yards, so the DRR does not have any need or requirement for additional C&S staff for hump yards

Thus, there is no basis for the Board to accept NS's C&S employee count over DuPont's revised count in Rebuttal, which includes the revised number of Signal Maintainers and Signal Supervisors (based on the final number of signal units)

a. General Office Staff

NS proposes to add many new C&S positions in administration, engineering, supervision, hump yard staff, and technical staff These new positions are unnecessary and unsupported.

NS experts added an AVP C&S in Reply, which is another example of the unnecessary multiple levels of upper administration not needed for the DRR.

NS also creates many new design and inspection positions. The engineering positions are not necessary because the DRR has been designed and built. The signal maintainers are

[29] *See* DuPont Opening Exhibit III-D-3, pp 11-13.
[30] *See* NS Reply, p III-D-223

responsible for inspection and maintenance. NS provides no supporting evidence for its proposed C&S claims.

NS asserts that the DRR does not have supervision for its C&S Supervisors[31] NS is mistaken. DuPont provided an explanation in the MOW staffing spreadsheet at opening and provides for the C&S supervisors to report to the Assistant C&S engineer over their division

b. **Field Staff**

Most of the differences between the parties' field staffing for the communications & signals ("C&S") function involves proposed increases in the numbers of Signal Maintainers (NS adds 200 Signal Maintainers), Inspectors, Communications Technicians, and hump yard personnel, as well as supervisors.[32] Because NS experts added so many unnecessary signal maintainers and other field employees, they had to add more, unnecessary supervisory personnel.

i. **Signal Maintainers**

The principal criticism is that DuPont based its Signal Maintainer requirements on the number of AAR signal units to be maintained, rather than on a "work-loading model based on 'asset/test type weighting factors' that take into consideration the systems maintained, the complexity of the FRA and the DRR required tests and inspections, and other human factors" that supposedly are used by "many Class I and regional railroads."[33] This sounds very professional – but NS did not identify the specific model that it thinks should be used, much less include it in its workpapers or show how it can be used to develop Signal Maintainer requirements Nor did NS indicate what its own real-world staffing levels are for Signal Maintainers or any other C&S personnel The Board has accepted evidence basing a SARR's

[31] *See* NS Reply, p III-D-227
[32] *See* NS Reply Table III-D-51, p III-D-201.
[33] *Id*, pp III-D-223-224

MAINTENANCE OF WAY

Signal Maintainer requirements on the number of AAR signal units to be maintained[34] and in the absence of better information it should continue to follow that approach here [35]

In Reply, NS claims that the signal unit count was not done properly [36] The signal unit count provided by DuPont in Rebuttal is based on final changes to the DRR system and the final track configuration meeting the system requirements. On Rebuttal, DuPont has revised the number of AAR signal units to reflect these corrections and the additional interchange and other tracks that have been added on Rebuttal The revised AAR signal units total 405,045 [37] Using the Opening criterion of 2,000 AAR units per Signal Maintainer, the DRR requires 203 Signal Maintainers, or an increase of 23 employees from Opening.

ii. Communications Technicians

In Opening, DuPont provided for 18 Communications technicians, one for each yard, and two relief technicians This is appropriate for the DRR and more than adequate for radio maintenance. The Communications system annual cost of maintenance was included in Opening (2% of the cost to construct the system); therefore, NS experts' claim that there are not sufficient Communications technicians is simply an unsupported opinion, and should not be considered [38] Any attempt by NS experts to increase the number of staff related to communications related maintenance should be recognized as an attempt by NS experts to ignore or omit the annual communications maintenance costs provided in Opening.

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[34] *See WFA/Basin*, p. 63.
[35] NS also asserts that DuPont's assumed number of AAR signal units per maintainer is unsupported, but it is based on the direct experience of DuPont's C&S expert, Victor Grappone, at the Long Island Railroad which has a more complex signal system than the DRR. *See* DuPont Opening Exhibit III-D-3, p 13.
[36] *See* NS Reply, p III-D-224
[37] *See* DuPont Rebuttal e-workpaper "DuPont C&S Estimate Rebuttal.xlsx," tabs "AREMA Counts" and "ReplyXing Inventory."
[38] *See* NS Reply, p. III-D-232.

MAINTENANCE OF WAY

3. Bridge & Building Department

NS criticizes DuPont's B&B staff as dramatically understated,[39] and more than triples the number of B&B employees. However, this proposed B&B staff increase is unreasonable, unrealistic, and unsupported, and is contradicted by NS experts in their own comments as they state that " .. the DRR's Bridge Department can be relatively small because the DRR's bridges will be newly constructed "[40]

In Reply, NS acknowledges that the newly constructed bridges on the DRR will have different maintenance requirements than the bridges on the existing NS lines being replicated.[41] In fact, there will be virtually no repairs needed for newly constructed concrete and steel bridges within the first ten years of their life.

DuPont asserted that there will be virtually no bridge maintenance required in the ten-year life of the DRR since all bridges are new, and constructed with steel and concrete. In Reply, NS agrees that little routine maintenance will be required, but then goes on to say that there will be derailment damage (included in the annual derailment cost); washouts (included in the annual cost of washouts – even though washouts would occur with less frequency on a newly constructed, well-maintained railroad); foreign objects falling from cars (this is not a serious concern); wooden ballast retainers (there are none on the DRR – the bridges are all constructed using concrete and steel); and bridge drains needing maintenance (the drains will not be accessible, and this is not a realistic maintenance item).[42] So, other than some drift removal, which is much less given the elimination of timber bridges and the use of longer bridge spans,

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[39] *See* NS Reply, p. III-D-233
[40] *Id*, p. III-D-205
[41] *Id*, p. III-D-235
[42] *Id*, p. III-D-236

MAINTENANCE OF WAY

there is no real regular maintenance required for the newly constructed DRR bridges DuPont covered annual washout damage costs and damage costs associated with derailments in separate cost items in Opening, so the NS argument for adding more costs here are not reasonable, realistic, or supported by evidence.

NS experts add unnecessary levels of management, and positions such as the Clearance Engineer that are not necessary for a newly designed and constructed modern freight infrastructure. The DRR was designed and built to modern standards, with tunnels and bridges having proper horizontal and vertical clearances. The DRR would not build in clearance defects on a new railroad.

NS seems to expect DuPont to bear the cost of constructing a new railroad infrastructure, but then treat the maintenance of the DRR as if it were 100 years old. The bridges being constructed, and paid for, on the DRR are a higher caliber of bridges overall than the existing structures on the existing NS lines being replicated, especially the numerous timber structures, and the existing steel structures that were built at the end of the 19th century and turn of the 20th century that were designed for lower gross car weights.

Moreover, DuPont explained the work that would be performed by its field B&B forces, consisting of four (4) B&B Supervisors, four (4) Bridge Inspectors, four (4) B&B Machine Operators, and eight (8) B&B crews each consisting of a Foreman, Welder, Helper and Carpenter. DuPont also pointed out (with no disagreement from NS) that contractors perform major bridge (pier and superstructure) tunnel and building repairs, and DuPont provided an annual maintenance cost for these bridges in Opening.

MAINTENANCE OF WAY

NS's existing timber bridges on the lines being replicated require much more ongoing maintenance than their own concrete and steel bridges. Even the older NS steel bridges require more ongoing maintenance than the modern bridges constructed for the DRR. There are no timber bridges or old steel bridges on the DRR. NS is attempting to apply a different, and unwarranted and unsupported standard of care to the DRR bridges.

Many existing steel structures on the NS require ongoing maintenance and repairs, largely due to the fact that some bridges in service now were designed and constructed in the late 1800's and early 1900's when gross car weights were lower than today's freight cars. With heavier car loads today, these bridges require above normal levels of annual inspection, maintenance, and repair work. The DRR has only new concrete and steel bridges, and does not have aged steel structures that were constructed in the late 1800's and early 1900's like some of the structures on the existing NS lines.

The B&B staffing levels presented by DuPont in opening are very conservative given the fact that the bridges are all new, and will require little to no annual maintenance

DuPont Witness Crouch has been responsible for the annual inspection of, and planning of rehabilitation programs for hundreds of railroad bridges every year for the past 20 years, and he is very familiar with the work effort required to make the necessary inspections and repairs. Mr. Crouch is also very familiar with the new FRA bridge safety rules, having completed the FRA mandated Bridge Management Plans for many railroads, and having been the designated bridge engineer for many railroads, with responsibility for the management of their annual bridge inspections as well as bridge load ratings

MAINTENANCE OF WAY

The fact that the DRR's bridges are being constructed new, with concrete and steel components, and generally, with longer spans than the existing NS bridges, results in a reduced likelihood of stream flow impacts and drift accumulation impacts, and minimizes this type of annual maintenance work required during the first ten years of operations. Thus Mr. Crouch's original proposed B&B staffing is very conservative.

NS experts suggest that there are not enough inspectors to check the DRR system tunnels and culverts. The tunnels on the DRR will be completely new, and will not require any maintenance work in the 10 year life of the DRR. They will be observed at least twice a week by the Assistant Roadmaster as they patrol track, and will be inspected annually by the B&B department. Culvert performance will also be assessed weekly during the regular track inspections by the Assistant Roadmasters. Culverts will be inspected annually by the B&B work forces.

Since there will be little to no required maintenance on the new bridges or culverts, the B&B work crews can also assist in performing annual bridge inspections and culvert inspections if needed.

Finally, NS proposes to add 56 Bridge Tenders, apparently to operate at least some of the movable bridges the DRR will have.[43] However, as provided for in Opening Evidence, a newly-constructed, non-unionized railroad would not man these movable bridges with Bridge Tenders, which are anachronistic. Rather, it would provide for remote control of such bridges by the railroad's dispatcher for the territory involved, with the Coast Guard authorized to provide a telephone number or radio contact information so that a vessel approaching the bridge could

[43] *See* NS Reply, p. III-D-233

contact the dispatcher to request that the span be moved [44] The DRR reaffirms that it would follow this procedure and thus does not need any Bridge Tenders.

NS claims that additional design and construction personnel are required even for a newly constructed railroad, to accommodate things such as fiber optic cable installation, pipeline crossings, etc. This is a false assumption. Many railroads utilize third party contractors to perform these functions (e.g. Genesee & Wyoming, RailAmerica; Gulf and Ohio Railways), and have continuing service contracts to manage these events at no cost to the railroad. NS overstates the personnel required for the proper functioning of the B&B Department.

In summary, given the lack of any supporting evidence or justified explanation of how NS's engineers arrived at their increased level of B&B field staffing, the Board should accept DuPont's conservative staffing proposal for the B&B function.

In Reply, NS experts assert that the support staff for the DRR is woefully inadequate [45] This is an inaccurate statement. NS attempts to include and create positions that are simply not needed, or have a much smaller responsibility than suggested by NS experts. These positions are fully addressed in Appendix A to this Rebuttal Exhibit, including discussion of the creation of unnecessary departments and positions within the MOW staffing plan by NS experts.

a. General Office Staff

DuPont reaffirms that its office staff is reasonable for the inspection and maintenance of the new DRR bridges and buildings. Bridge inspections will be discussed in the appropriate section below.

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[44] *See* Koglin, Terry L., *Movable Bridge Engineering*, John Wiley & Sons, Inc 2003 (copy of relevant pages included in Rebuttal e-workpaper "Movable Bridges pdf"). This publication also describes several instances where existing movable span railroad bridges have been converted to remote control, thus eliminating the need for bridge tenders.

[45] *See* NS Reply, p. III-D-237.

MAINTENANCE OF WAY

b. Field Staff

DuPont reaffirms that its field staff is reasonable for the inspection and maintenance of the new DRR bridges and buildings Bridge inspections will be discussed in the appropriate section below. NS provided no supporting evidence in Reply to the contrary.

i. B&B Supervisors

DuPont reaffirms that its number of B&B Supervisors is reasonable and more than adequate for the newly constructed bridges and buildings on the DRR. NS provided no supporting evidence in Reply to the contrary.

ii. Bridge Inspectors and Other Field B&B employees

DuPont reaffirms that its number of Bridge Inspectors and other B&B field employees is reasonable and more than adequate for the newly constructed bridges and buildings on the DRR NS provided no supporting evidence in Reply to the contrary.

4. Miscellaneous Administrative/ Support Personnel

NS experts proposed an unrealistic, unsupported MOW staffing Plan in Reply that increased the number of employees in almost every position on the DRR. As previously discussed, many new and unnecessary MOW departments were added by the NS experts. Almost all of the positions and additional employees added by NS in Reply are unnecessary, infeasible, unrealistic, and unsupported, and should be rejected, with the exception of the adjustment to Signal Maintainers and Signal Supervisor positions based on the final number of signal units on the DRR in Rebuttal, MOW Control Center Technicians (using the 5 employees recommended by NS in Reply), and rail lubricator repairmen (using the 38 employees recommended by NS in Reply).

MAINTENANCE OF WAY

In Reply, NS experts overstate the need for the number of employees for many of the MOW field and office positions proposed by DuPont on Opening. Their overstatements of need are based on inherent flaws in their plan, including overstatement of the size of the DRR infrastructure, the unrealistically small average Roadmaster territory size; the arbitrary, unsupported doubling of the number of track crews, smoothing crews, and other crews related to the number of Roadmasters submitted by DuPont on Opening; the reduced need for regular and spot maintenance on an annual basis due to having a newly constructed railroad infrastructure, and, the fact that Roadmasters and their local crews no longer perform support functions for the railroad's system gangs since contractors perform all capital work. NS's staffing plan for MOW is overstated, unrealistic, infeasible, and unsupported. A position-by-position listing of the NS proposed staffing, and the reasons that the NS approach is unrealistic, unreasonable, infeasible, and/or unsupported is presented in Appendix A to this Rebuttal Exhibit.

5. Compensation for MOW Employees

NS states that it has accepted DuPont's compensation methodology for MOW employees.[46] NS states it uses its own pay scales Review of NS's workpapers shows in fact it also used the Wage Form A&B data provided in discovery and used by DuPont in Opening.

C. NON-PROGRAM MOW WORK PERFORMED BY CONTRACTORS

1. Planned Contract Maintenance

NS accepts DuPont's specification that various categories of maintenance such as track testing, rail grinding, etc would be performed by contractors rather than by the DRR's in-house

[46] *See* NS Reply, p III-D-208.

maintenance forces [47] Each category of contract maintenance addressed by NS is discussed in turn below.

a. Track Geometry Testing

NS provided geometry testing costs and frequencies in Discovery, as described on Opening; however, NS experts claim in reply that DuPont cannot use the costs provided in Discovery because they were costs associated with the railroad's testing equipment. DuPont reaffirms its right to use the costs provided by NS in Discovery, which are also reasonable when compared to the cost of contracting for geometry testing by Contractor.

b. Ultrasonic Rail Testing

DuPont agrees with NS that it overstated the number of miles of track that require ultrasonic rail testing annually,[48] and accepts the reduction in annual ultrasonic rail testing costs shown by NS in Reply from DuPont's $3,653,070 to NS's annual cost of $2,402,989 [49]

c. Rail Grinding

NS accepted DuPont's approach to rail grinding and costs per mile, except that NS did not agree that Premium rail does not need grinding before 100 MGT, and referred to a technical paper provided by NS in Reply for a study done on the Canadian division of the CP with the most extreme track geometry and weather conditions, using that paper in support of the NS experts' argument.

In the paper presented in Reply by NS, Peter Sroba provides no data, opinions, evidence, nor claims regarding the required frequency for grinding rail in curves with premium rail over 3 degrees, nor does he provide any correlation to rail lubrication or other factors affecting premium

[47] *See* NS Reply, p III-D-248
[48] *Id,* p III-D-249.
[49] *See* NS Reply, Table III-D-62, p III-D-248

rail wear in his paper This is a case of NS providing what seems to be "evidence" in support of its argument without actually providing a real argument or real evidence or conclusions that supports the NS claim There are no references to an industry standard for corrective rail grinding in premium rail in the paper provided. DuPont rejects the NS experts' assertion as being unsupported, and reaffirm the rail grinding methodology, plan and costs presented on Opening

In its Opening SAC analysis, DuPont capitalized certain expenditures, including rail grinding, instead of treating these activities as standard operating cost items [50] In Reply, NS disputes the capitalization of the maintenance activities and cites *AEPCO* for the reasons that these activities should be treated as operating expenses.[51] Based on the accounting standards NS uses in its real world operations and statements made by engineering executives, DuPont continues to believe the proper methodology for accounting for these MOW costs is to include them in the DRR's capital recovery stream.

NS's 2012 SEC Form 10-K discusses when and where the railroad decides to treat maintenance of way outlays as either a capital expense or an operating expense. As indicated by NS:

> We capitalize interest on major projects during the period of their construction. Expenditures, including those on leased assets, that extend an asset's useful life or increase its utility, are capitalized Expenditures capitalized include those that are directly related to a capital project and may include materials, labor and equipment, in addition to an allocable portion of indirect costs that clearly relate to a particular project. Due to the capital intensive nature of the railroad industry, a significant portion of annual capital spending relates to the replacement of self-constructed assets. Because removal activities

[50] *See* DuPont Opening e-workpaper "Exhibit III-II-1 Errata xlsx," tab "Investment SAC," cell J13.
[51] *See* NS Reply at III-D-264.

> occur in conjunction with replacement, removal costs are estimated based on an average percentage of time employees replacing assets spend on removal functions Costs related to repairs and maintenance activities that do not extend an asset's useful life or increase its utility are expensed when such repairs are performed.[52]

Based on NS's description of its accounting practices, the key factor of whether the cost is expensed or capitalized is whether the activity extends the life of the asset.

Based on statements made by NS engineering executives, there is no question that rail grinding and repaving extend the useful lives of NS assets. NS included in an SEC Form 8-K filing a presentation made by Tim J. Drake, NS's then Vice President of Engineering, at a June 6, 2007 Investor Day hosted by NS , during which members of management provided information regarding various aspects of NS's business. Mr Drake stated as part of his presentation that:

> Norfolk Southern will spend $12 million in rail grinding in 2007. This process is used to enhance the life of the rail and provide a smooth running surface for trains.[53]

NS's own engineering executives clearly acknowledge rail grinding extends the life of rail

These sentiments are expressed by other maintenance of way experts. Based on published reports, NS uses a Loram RG400 Series grinder as part of its maintenance operations.[54] According to Loram's Manager of Marketing and Business Development Joseph Ashley, "we're starting to see better rail life extension through more exact rail grinding."[55]

Similar statements were made by other railroad spokespeople:

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[52] NS SEC Form 10-K for Year Ending December 31, 2012 at page K49 (emphasis added). Similar statements of NS's accounting position can be found in NS's SEC Form 10-K from earlier years

[53] A copy of Mr. Drake's presentation can be found at http //www sec gov/Archives/edgar/data/702165/ 000070216507000154/drake1 htm.

[54] *See* "Maintenance of Way. Rail Grinding Equipment Update," Progressive Railroading, November 2011, "Norfolk Southern Railway was the first railroad to begin using the RG400 Series Production Rail Grinder," says Loram Manager of Marketing and Business Development Joseph Ashley "

[55] *Id*

MAINTENANCE OF WAY

> At CSX Transportation, MOW officials are seeking a computerized selection of the daily grind plan based on a laser-head profile at the front of the grinder and a daily pre-grind measurement to improve grinding operations In addition, if grinders could operate more efficiently, CSXT could reduce the amount of track time needed for grinding, said CSXT Spokesman Gary Sease in an email, adding that the Class I's "preventative grinding philosophy" calls for operating production grinders on main routes to maintain rail and extend rail life.[56]

There is no question that rail grinding extends the useful life of rail Based on this widely acknowledged fact, and NS's own statement that it capitalizes maintenance activities that extend the life of assets, DuPont continues to capitalize certain maintenance of way activities in Rebuttal.

d. Yard Cleaning

NS accepted that yards require cleaning, and accepted the daily rate for yard cleaning used by DuPont [57] NS bases its higher cost for Yard Cleaning in Reply on a higher number of miles of yard tracks, which is a result of NS overstating its yard tracks in Reply. NS provided no evidence in Discovery that it uses a yard cleaning service for all yards on an annual basis, nor did it provide evidence of its annual cost of yard cleaning that would support the NS argument DuPont reaffirms that its costs are correct, and that NS did not provide any costs for annual yard cleaning for all of its existing yards in Discovery. NS does not claim that it cleans all of its yard tracks on an annual basis. Therefore, DuPont's cost of $959,400 per year is very reasonable and realistic NS's claim is unsupported.

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[56] *See* "Technology update. Rail grinding equipment," Progressive Railroading, May 2010.
[57] *See* NS Reply, p. III-D-251

MAINTENANCE OF WAY

e. Vegetation Control

NS states that the R-1 mileage is not correct,[58] that it includes 4,570 miles of Class 5 track that is included in the 20,623 route miles listed in the R-1 report, however, NS fails to state whether the 4,570 miles are route miles or track miles, which would affect the calculations for annual vegetation control costs. NS fails to state where the miles are located NS fails to provide an accurate number of route miles and also fails to correlate any differences in mileage to differences in annual vegetation control costs NS should have provided evidence of its actual vegetation costs by route mile in Discovery.

NS also argues that the brush cutting requirements on its existing lines being replicated are the same as the requirements for the DRR, which right-of-way has been completely cleared and grubbed, then seeded and mulched to establish a stand of grass over the entire railroad NS overstates the need for brush and vegetation control, therefore the vegetation control plan presented by DuPont on Opening should be used.

f. Brush Cutting

As stated above, NS argues that the brush cutting requirements on its existing lines being replicated are the same as the requirements for the DRR, which right-of-way has been completely cleared and grubbed, then seeded and mulched to establish a stand of grass over the entire railroad. NS overstates the need for brush and vegetation control; therefore the vegetation control plan presented by DuPont on Opening should be used

[58] *See* NS Reply, p. III-D-252.

MAINTENANCE OF WAY

g. Crossing Repaving

The NS experts accepted the costs proposed for this item on Opening, which DuPont included in the DCF model DuPont experts opine that repaving would not likely be required within the 10 year life of the DRR, and that including it at all is very conservative.

Like rail grinding costs, discussed *supra*, repaving costs extend the life of road property assets, in this instance crossings, and therefore are include as a capital expenditure, not an operating expense. Equipment Maintenance

NS accepts DuPont's calculation that the DRR's annual cost-of equipment maintenance would be five (5) percent of the purchase price, but overestimates the annual contract equipment maintenance cost based on its flawed MOW plan with respect to an unsupported staff size and the vehicles required for that staff. This estimate apparently is based on the additional equipment needed for the inflated MOW personnel that NS proposes to add

As indicated earlier DuPont disagrees that the additional MOW personnel proposed by NS in Reply are needed, and NS has not provided any evidentiary support for its increased equipment maintenance cost. The Board therefore should accept DuPont's Opening equipment maintenance unit costs, and the final cost adjusted as noted in the Rebuttal sections herein, based on correcting the number of trucks required per position, and using 5% of the annual cost of equipment as the cost of maintenance.

h. Communications System Inspection and Repair (Annual Maintenance)

NS accepts DuPont's methodology for determining communications system inspection and repair costs (2 percent of the original purchase cost). DuPont reaffirms its costs in Opening.

MAINTENANCE OF WAY

i. Bridge Inspections

In Opening, DuPont provided for "special inspections of major bridges" using a five-year inspection cycle. NS experts rejected that [special] major bridge inspections only occur every five years.[59] However, DuPont is correct in stating that special bridge inspections for major bridges, which are considered a part of special inspections. are completed every five years in accordance with the new FRA bridge safety rules (CFR Part 214) All bridges are inspected annually as per DuPont's MOW plan The minor bridge inspections (regular bridge inspections) are completed annually by the DRR MOW bridge inspectors and support staff.

NS failed to recognize or acknowledge that annual inspections will be completed by the DRR B&B bridge inspectors, which is typical for all Class I Railroads, including NS. NS's claim is unsupported and unrealistic DuPont reaffirms its approach presented in Opening.

NS claims that DuPont did not include 65 bridges that require Snooper Truck Inspections.[60] NS is correct that some bridges were left off of the Snooper Truck Inspection list In rebuttal, DuPont will accept the changes to the Bridge List proposed by NS

NS notes that DuPont incorrectly stated the length of 30 major bridges needing Snooper truck inspections.[61] NS is correct that some of the bridge lengths included not only the length of major spans, but also the length of normal approach spans, which should not have been included in the Special Bridge Inspections. DuPont will accept NS's changes to the lengths of bridge to inspect. NS rejects DuPont's cost per foot for inspecting major bridges during special bridge inspections, using a Snooper Truck because of miscalculations on DuPont's part.[62] NS is correct

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[59] *See* NS Reply, pp. III-D-257-258.
[60] *See* NS Reply, p III-D-258.
[61] *Id*
[62] *Id*

that the labor utilization was accidentally omitted from the Snooper Truck Inspection Ratings. DuPont will accept NS's special bridge inspections cost of $7.75/TF

The major change in bridge inspection cost is based on NS wanting to inspect these bridges every year with a Snooper Truck instead of declaring these a special inspection and inspecting the structures every five years, which does not conform to the new FRA bridge safety rules (CFR Part 214). DuPont's cost in Opening was $826,912 based on Special Inspections occurring every 5 years, which it affirms is correct, and DuPont will adjust the cost in Rebuttal as noted above NS's cost in Reply was $935,379 for every year; however, Special Inspections are required only every 5 years. DuPont rejects the use of "Special Inspections" on an annual basis as unnecessary

DuPont will accept NS's changes to the number of bridges to inspect, the amount of track to inspect, and cost per Track Foot of inspection, but DuPont will remain firm in stating that yearly (annual) inspections (as required by the FRA) are completed by in-house personnel. Thus, we will use the $935,379 figure for Special Inspections, and divide that cost over 5 years.

j. Building Maintenance

NS accepted DuPont's methodology for calculating the cost of contract building maintenance (two (2) percent of the total cost of constructing the buildings), and agrees with the annual costs for building maintenance in Reply.[63] NS agrees that the costs of repairs would be included in this item.[64] DuPont, in rebuttal, adjusted the total cost of constructing buildings based on its revisions to the total staff needed for the DRR, and the related changes to facilities

[63] *See* NS Reply, Table III-D-62, p III-D-248.
[64] *See* NS Reply, p III-D-260

in rebuttal Likewise, the annual maintenance cost has been adjusted to reflect the changes to construction prices in rebuttal

k. Shoulder Ballast Cleaning

DuPont experts asserted on Opening that no shoulder ballast cleaning would be required on the DRR within the first ten years considering that it is a newly constructed line, free from blown in soils, and because it would have no fouling of ballast from roadbed pumping, and no previously fouled ballast to contend with [65] In Reply, NS claims that DuPont "omitted the essential maintenance function of shoulder ballast cleaning" in opening, which is not correct.[66] DuPont experts recognize that it is a useful practice when and where needed, but that the need for shoulder ballast cleaning comes over time, and for reasons that would not be a factor on a newly constructed railroad.

NS experts state that there will be no need for shoulder ballast cleaning within the first three years of operation, and suggest that cleaning cycles will vary from 4 to 10 years after that. Their statement is based on their experience with older, existing railroads, and using the 10-year cycle (higher end of the cycle) they mention would eliminate any need for shoulder ballast cleaning on the DRR during its 10 year life

NS experts fail to recognize that, on most all of the existing lines replicated on the DRR, sub-ballast was not used in the original construction to cap the roadbed and provide for drainage off of the track and roadbed The use of a crushed stone sub-ballast cap is a modern practice that reduces MOW needs When there is poor drainage from the track and roadbed, the roadbed under the track becomes more susceptible to roadbed pumping, which is one of the primary

[65] *See* DuPont Opening e-workpaper "III-D-3 DRR MOW.xls," level "Totals"
[66] *See* NS Reply, p. III-D-254.

causes of ballast fouling. The DRR is newly constructed, with a sub-ballast cap. Precipitation will run off the roadbed, which is sloped to drain for that purpose, as opposed to the earlier construction in the 1800's, which was not built in the same fashion. Another factor in determining the need for shoulder ballast cleaning is time.

It takes time for dust from the atmosphere to settle into the roadbed, or accumulate from passing coal cars or other open-top hopper cars. There is no reason to assume that shoulder ballast cleaning would be necessary within the first ten years on a newly constructed railroad, which is why DuPont experts listed it in Exhibit III-D-3 DRR MOW.xls in Opening, but stated that it would not be needed and provided zero cost on Opening.

NS experts mention in Reply that NS used Loram to clean 235 miles of main line track in 2010; however, the NS experts claim that their conservative annual shoulder ballast cleaning plan for the DRR includes cleaning 2,260 miles of track each year.[67] If shoulder ballast cleaning is truly that important, and is a regular practice of NS, then the track miles cleaned on the NS in 2010 would have been on the order of 7,500 miles (based on the 20,600 mile long NS system vs. the 7,272 mile long DRR, and 2,260 miles per year on the DRR, or (just over 1/3 of the DRR's system), not 235 miles

Clearly, the NS experts are far exceeding the reality of the current practices on the existing NS lines, and are completely exaggerating the need for ballast cleaning on the DRR by, at best, a factor of 30. NS experts' claims are completely unrealistic and unsupported.

[67] *See* NS Reply, p. III-D-256.

MAINTENANCE OF WAY

DuPont reaffirms that no shoulder ballast cleaning would be necessary on the DRR, and NS experts failed to provide evidence that it cleans the shoulder ballast on all of its lines in the manner they prescribe for the DRR

1. Ditching

DuPont's MOW plan provides for 12 Gradalls and 4 track excavators (large backhoes) to be used for ditching by the DRR's in-house ditching crews. In addition, 6 bulldozers are available for shaping ditches. However, with newly constructed roadbed, ditches, culverts and bridges, it is highly likely that most of the DRR ditches would remain problem-free within the ten year life. Therefore, the DRR MOW equipment called for on Opening is very conservative

2. Unplanned Contract Maintenance

a. Snow Removal

In Reply, NS rejects DuPont's estimated snow removal costs of $325,000 annually[68] as unsupported, and opines that the cost would be $750,000 annually;[69] however, NS experts provide no supporting evidence for their opinion, and NS failed to provide annual costs for snow removal in Discovery.

Mr. Crouch believes his estimate is reasonable given the temperate climate in which most of the DRR system is located (significant snow accumulation is rare in Kentucky, Tennessee, Alabama, Mississippi, Louisiana, Georgia, South Carolina, North Carolina, and Virginia, and usually is not present for more than a day or two) The DRR's field maintenance forces (Roadmasters, Assistant Roadmasters, track foremen, track crew laborers, etc.) light switch heaters and perform switch sweeping and other light snow removal as part of their normal duties.

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[68] *See* DuPont Opening e-workpaper "III-D-3 DRR MOW.xls."
[69] *See* NS Reply, p III-D-259

MAINTENANCE OF WAY

In Mr. Crouch's experience as a track supervisor in Virginia and performing other MOW work in Appalachia, contract forces are not typically used for snow removal and this task normally falls on the track crews. On occasion, ballast regulators are used by the field MOW forces to sweep track. The ballast regulators selected on Opening, in the northern region, are equipped specifically for snow removal.

b. Storm Debris Removal

After noting that NS did not provide any information on storm clean-up in Discovery, and based on his experience with weather conditions and storms in the geographic regions in which the DRR's lines are situated, DuPont witness Crouch provided $100,000 for annual storm debris removal costs.[70] NS estimated the DRR's annual storm debris removal cost at $250,000 in Reply, but after failing to provide data in Discovery, also fails to provide any supporting evidence for this opinion [71]

Local track crews and Assistant Roadmasters typically handle normal, localized storm debris cleanup, and the $100,000 annual contract cost proposed by Mr. Crouch should be more than sufficient for the DRR.

c. Building Repairs

As noted above, the annual cost of building repairs and maintenance is accounted for by DuPont taking two (2) percent of the construction cost of facilities

[70] *See* DuPont Opening e-workpaper "III-D-3 DRR MOW.xls "
[71] *See* NS Reply, pp III-D-263, 248

MAINTENANCE OF WAY.

D. LARGE MAGNITUDE UNPLANNED MAINTENANCE

1. Derailments, Accidents and Wreck Clearing

In Reply, NS experts claim that "DuPont fails to recognize that newly constructed railroads are not exempt from the risks of derailment".[72] This is a false statement. DuPont experts realize that not all derailments are related to track causes, and provided an annual combined cost for repairing damage from derailments and similar accidents ($2,386,642 for derailments), and clearing wrecks ($2,521,178) of $4,907,820, based on 2009 FRA accident reports for NS on a state-by-state basis.[73] NS argues that track caused derailments are not significant, and that having a newly constructed railroad is not important, increasing the annual cost on the DRR to $17.4 million – combined derailment cost and costs from wreck clearing).[74] DuPont rejects these claims as unsupported and unrealistic

DuPont submits that its calculation of annual contract costs for accidents and wreck clearing is superior to NS's, as it takes into account state-by-state accident costs as reported to the FRA. With respect to the system-wide derailment costs that NS incurred in 2009, NS has not provided any information that can be used to attribute any of these costs to the lines (or geographic regions) replicated by the DRR, or the causes of the derailments, or the correlation between the cause of the derailment and the magnitude of the costs associated with each type of derailment.

NS rejects DuPont's calculation of costs for derailments and clearing wrecks based on three arguments: 1) NS contends that new railroads such as the DRR are not exempt from

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[72] *See* NS Reply, p. III-D-260
[73] *See* DuPont Opening e-workpaper "III-D-3 DRR MOW.xls," level "Totals"
[74] *See* NS Reply, p. III-D-261

derailments, 2) NS argues that DuPont's calculations for derailment and clearing wrecks expense include incorrect route miles; and 3) NS argues that the FRA database DuPont relies on for the expense of repairing damage from derailment understates that cost.

NS then calculates the cost of derailments using damage costs reported in it R-1 Annual Report, Schedule 410, line 18 "Road Property Damaged" and allocates this NS system amount to the DRR based on the ratio of DRR ton-miles to NS system ton-miles, which equals 86 percent of NS's system cost or $11.34 million for derailments and $6.17 million for clearing wrecks. In Opening, DuPont included $2.4 million for derailment costs based on a route mile allocation of derailment costs reported by NS to the FRA and $2 5 million for clearing wrecks based on NS's system cost reported in NS's R-1 and allocated based on DRR route miles

NS's argument that new railroads are not exempt from the expense of derailments and clearing wrecks is meaningless Both parties include derailment and clearing wrecks expense based on NS's experience and DuPont continues to do so on Rebuttal. NS's second argument that DuPont incorrectly used miles NS operated for allocating derailment and clearing wrecks expense rather than NS miles owned is correct DuPont has corrected these miles in its Rebuttal calculations

NS's argues that the derailment expense amount it reports in Schedule 410, line 18 of the R-1 Annual report more appropriately reflects derailment costs than do the costs published by the FRA, which is based on data provided by NS Contrary to NS's claim that the R-1 more appropriately reports its cost of repairing damage from derailments than does the FRA data, NS states that the R-1 expenses include the expense of repairing damage to roadway property

resulting from "derailments, collision, fire, explosions, sabotage and other casualties."[75] Clearly this expense includes more than repairing damage from derailments and over-reports NS's expense for derailments. Review of the public record in both the *WFA/Basin* and *AEPCO* proceedings reveals that both parties relied on FRA data, not R-1 data for determining the cost of repairing damage from derailments, and the Board accepted the parties' calculations in those proceedings

DuPont also disagrees with NS's allocation of derailment and clearing wrecks expense based on ton-miles rather that route miles. As demonstrated by the title of the Schedule 410 expense NS relies on in its evidence, i.e, "Road Property Damaged", the damage caused by derailments and wrecks is related to road property not to tons handled. Thus the appropriate allocation of this expense is to route miles or track miles not ton-miles

In Rebuttal, DuPont continues to rely on the method of determining derailment and clearing wrecks expenses as relied on in Opening, with the correction of using route miles owned rather than route miles operated. This method is consistent with the parties' calculations and Board decisions in previous proceedings In Rebuttal, DuPont determines that derailment expense for the DRR equals $3 3 million and clearing wrecks expense equals $3.3 million.

If for some reason the Board believes that the derailment expense NS proffers(i.e., that reported in Schedule 410, line 18) should be used, then DuPont argues the Board should not allocate this expense based on ton-miles, as allocation based on route miles or track miles is more appropriate.

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[75] *See* NS Reply, p. III-D-262

MAINTENANCE OF WAY

NS experts fail to mention that the entire DRR is signaled, and will have Positive Train Control, thereby reducing the likelihood of train collisions as a source of wrecks and derailments. DuPont experts opine that this will result in a significant reduction in the number of broken rail and non-track related derailments and accidents, as does the Federal Railroad Administration by enacting requirements for PTC.

2. Washouts

In Discovery, NS failed to provide documentation of annual costs related to washout damage. NS experts state that DuPont has provided no support for its estimated annual contract cost for washouts of $100,000,[76] and opine that the annual cost should be $500,000.[77]

Washouts typically occur for a number of reasons, such as when concrete culverts separate at the joints and cause the roadbed to fail, when a record flood causes runoff flows that exceed design capacity, when ditches become blocked with tree debris, or culverts become clogged with drift or vegetation. Mr Crouch used metal pipe culverts for the most part, which typically do not experience joint separation failure as with concrete pipe culverts. Ditches, culverts, and bridges are new on the DRR and not subject to failure under normal circumstances. Also, the DRR's culverts are designed for present-day runoff coefficients and drainage area characteristics, whereas existing railroads such as NS have to deal with undersized culverts built many years ago

Land characteristics and runoff coefficients have changed for the worse over time due to increasing land development – forests have been replaced with parking plots and agricultural

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[76] *See* DuPont Opening e-workpaper "III-D-3 DRR MOW.xls"
[77] *See* NS Reply, pp. III-D-248, 262-263

fields, which concentrate storm water runoff much faster than when the lines were originally built

Based on the fact that NS did not provide cost data for this item in Discovery, and that washouts are less likely to occur on the newly built DRR, the cost presented by DuPont on Opening should be used.

3. **Environmental Cleanups**

Regarding environmental staff, NS overestimates the duties and number of employees needed for environmental safety and training, most likely comparing the environmental challenges of the existing NS system, and including the past environmental problems that may be ongoing, to the newly constructed DRR, which starts operations with no environmental problems.

On Opening, DuPont provide $100,000 in annual costs for environmental cleanup. NS accepted this cost in Reply.[78]

4. **Surfacing**

There is no additional cost required for surfacing and lining track that has not already been accounted for in DuPont's plan for smoothing crews and capital work covered by the DCF model

5. **Bridge Superstructure and Substructure Repair (Bridge Contract Repairs)**

NS accepts DuPont's methodology and unit cost for determining the annual cost of contract bridge repairs ($4,000 per bridge with repairs performed on each major bridge every

[78] *See* NS Reply, Table III-D-62, p III-D-248

five years).[79] NS added 65 major bridges in this item, which DuPont experts accept, for a revised total annual cost of $380,000, based on 95 major bridges.

E. EQUIPMENT

As stated above, NS overstated the amount of equipment required for the DRR in Reply for a number of reasons, including the arbitrary doubling of the work crews associated with the increased number of Roadmasters and smaller Roadmaster territories proposed by NS.

DuPont recognizes the need to correct some overstated numbers of equipment and some understated numbers, and has made the proper changes.[80]

1. Hi-Rail vehicles and Other Vehicles

In Reply, NS criticizes the DRR staff as inadequate for the maintenance of equipment required for the MOW Department.[81] There are three major flaws in the NS Reply. First, NS fails to acknowledge when discussing the equipment staffing, that there is already a cost of annual equipment maintenance provided in Opening,[82] representing an annual maintenance dollar amount that is 5% of the cost of the equipment (but then later accepts the inclusion of 5% for annual maintenance costs when presenting its proposed annual maintenance cost).[83]

Second, NS fails to acknowledge the Manager of Mechanical Operations presented in the MOW staffing spreadsheet, the two (2) Managers of Work Equipment, and the 18 Roadway Mechanics when discussing the appropriate staff size.

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[79] *See* NS Reply, p. III-D-264.
[80] *See* Rebuttal e-workpaper "Rebuttal Exhibit III-D-2 MOW xlsx"
[81] *See* NS Reply, p. III-D-243
[82] *See* Opening e-workpaper "III-D-3 DRR MOW xls"
[83] *See* NS Reply, pp. Reply III-D-243, 257

MAINTENANCE OF WAY

Third, NS overstates the amount of equipment required for the DRR, which has much less MOW equipment than the proposed NS MOW Department, for reasons stated herein, and therefore required a much smaller staff than the NS plan provides

The maintenance of automobiles, trucks, backhoes, dump trucks, etc will be minimal for new, leased vehicles, and will be performed by local dealerships. Daily maintenance of roadway machines, such as lubrication and testing, is performed by the machine operators. This is a standard practice on railroads. The Roadway Mechanics will make repairs, such as replacing damaged motors and electrical components, welding damaged machine parts, and performing major maintenance items Again, DuPont provided for the annual maintenance cost for the MOW equipment, which NS's experts ignored.

NS has generally accepted DuPont's listing of vehicles and other equipment for the DRR's MOW personnel, except that NS used some different models of vehicles for certain functions and used some higher value lease rates from Danella.[84] Where NS did not provide monthly lease rates, DuPont used the purchase price of equipment gathered from manufacturers or retailers, and assumed a financing cost of 5% over 5 years DuPont reaffirms its use of NS monthly lease rates for the respective equipment provided as set forth on Opening.

DuPont Experts agree that the trucks for the Roadway Mechanics were not included in the DRR MOW plan on Opening and have added 18 trucks for this purpose.[85] DuPont has checked the vehicle lists for the required MOW staff, and has made corrections to some quantities that were both understated, and overstated.[86]

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[84] *See* NS Reply, pp III-D-264, 265
[85] *See* NS Reply, p. III-D-265.
[86] *See* Rebuttal e-workpaper "Rebuttal Exhibit III-D-2 MOW xlsx "

MAINTENANCE OF WAY

DuPont experts disagree that no trucks were provided for the smoothing crews.[87] In Opening, the DRR was staffed with 18 smoothing crews, 18 foremen, who were each provided a truck for transporting the crews.[88]

DuPont experts have ensured that the proper number of trucks are provided in Rebuttal for the bridge crews.[89] In Opening, the DRR was staffed with eight (8) B&B foremen. The number of crew trucks needed was overstated in Opening. This has been corrected (reduced) in rebuttal. Each foreman has a 3-man crew. One crew size hi-rail crew truck is provided for each crew in rebuttal

DuPont has increased the number of hi-rail trucks for lubricator repairmen in rebuttal from 18 to 38, ensuring that each repairman is equipped with a hi-rail truck It is not clear whether NS agrees or disagrees with DuPont's providing a hi-rail truck for each signal maintainer, however, DuPont experts maintain that one hi-rail equipped truck will be required for each signal maintainer, and continues to provide for those vehicles in Rebuttal, adjusting the quantity based on the final number of Signal Maintainers.

DuPont experts disagree that the Track Engineers need a hi-rail vehicle for inspections. They typically include the Roadmaster in the inspection, and would simply use the Roadmaster's hi-rail, or one of the Assistant Roadmaster's hi-rails. This is standard practice on many Railroads

The DuPont experts did not include a Speedswing at each hump yard because the DRR in Opening did not have any Hump Yards. The DuPont experts disagree that a Speedswing would

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[87] *See* NS Reply, p. III-D-265
[88] *See* Opening e-workpaper "III-D-3 DRR MOW xls"
[89] *See* NS Reply, p III-D-265.

be required in a new hump yard regardless since rail change-outs could be done with a MOW crew truck or local Roadmaster backhoe.

NS fails to acknowledge the inclusion of 90 specialized MOW track and bridge crew trucks in Opening.[90] DuPont experts disagree that no trucks were provided for the bridge crews and track crews.[91] In fact, the number of hi-rail maintenance crew trucks listed was overstated and corrected, as mentioned above.

NS in Reply improperly and unjustifiably criticize the DRR approach to MOW equipment costs as using a factor of 60 in order to arrive at monthly rates[92] NS experts are clearly mistaken as shown in the following examples. Where NS provided monthly rates for equipment in Discovery, which covers most of the equipment used by DuPont in Opening, Mr. Crouch typically used an average of the rates provided by NS. Where information on specific equipment was not provided in Discovery by NS, Mr Crouch assumed that equipment would be financed over a five (5) year period at five (5) percent interest, realizing that this approach was very conservative since the useful life of this equipment, in his experience, far exceeds 5 years, and, there would be value in the equipment after 5 years.

a DuPont uses the Case 580M backhoe for each of its 36 Roadmaster territories, which is not only common on most railroads, but also is the exact model used by NS. DuPont experts could have used the least-cost monthly lease rate provided by NS in Discovery for this piece of equipment,[93] which was {{[redacted]}} per month for the Case 580M in August, 2009; however, DuPont's expert chose to use an average of the lease rates provided instead ($1,852 per month, and then multiplied the monthly rate by 12 months/year to get the annual lease cost). Nonetheless, DuPont's experts did not use a factor of 60, as claimed by NS, to establish the monthly costs and annual costs for backhoes. DuPont used data provided in Discovery; therefore, NS expert's claim is not supported.

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[90] *See* Opening e-workpaper "III-D-3 DRR MOW xls."
[91] *See* NS Reply, p III-D-265
[92] *Id*, p III-D-266
[93] *See* Discovery e-workpaper "MOW Vehicles.xls."

MAINTENANCE OF WAY

b. Regarding dump trucks, NS failed, in Discovery, to provide either a monthly lease cost or the purchase price and monthly costs for the dump trucks typically used to pull backhoe trailers. Mr Crouch selected a type of dump truck that is common for this use, but is in no way undersized. The purchase price listed for this type of dump truck is $124,100. Mr. Crouch used the purchase price, with a conservative vehicle life of 5 years, at 5% a.p r. financing, = $2,342/month financed over 60 months. DuPont asserts that this is a very reasonable, realistic and conservative approach in the absence of any data furnished by NS in Discovery. NS failed to provide the information needed for some equipment in Discovery NS expert's claim is not supported

c NS failed to provide a cost for tampers in Discovery. DuPont obtained a quote from Plasser American for a tamper for each of the smoothing crews and related the cost quoted by Plasser American for its 09-16 Dyna-C.A.T tamper is $750,000. NS's claim of a cost of $2,000,000 for this machine is incorrect, and unsupported

NS expert's claims regarding DuPont's monthly and annual equipment costs are unsupported, and simply not factual DuPont's monthly and annual equipment costs are conservative, and are absolutely supported by NS data in Discovery, and by reasonable cost and lease rates provided by DuPont in the absence of data furnished by NS in Discovery.

NS's proposal to increase costs for equipment is based on an unrealistic MOW plan, an overstated, unrealistic number of equipment, and on unrealistic costs to fill in the gap of missing data provided in Discovery by NS NS experts propose to increase the cost of equipment, but this is largely a function of NS experts' increase in the number of MOW employees as most of the field employees and most of the general office employees require vehicles and/or equipment.

Equipment lists and monthly costs were provided by NS in Discovery, and DuPont's experts used the NS real world lists to select the models of vehicles for each MOW function based on the need for each position on the DRR, therefore, the vehicle changes used by NS should be rejected. As stated above, where NS failed to provide information regarding certain necessary equipment in Discovery, Mr. Crouch conservatively used quotes for missing

equipment, and financing for each vehicle at five (5) percent over five (5) years (60 months) to establish a monthly cost and annual cost. Again, the vehicle changes used by NS should be rejected

2: Equipment for Track and Related Work

DuPont reaffirms that the cost of equipment necessary for local track crews, assistant Roadmasters, and other work crews was properly accounted for at opening

Regarding Tampers, NS experts questioned the cost of the tamper specified by DuPont at opening. DuPont obtained a quote directly from the manufacturer and reaffirms that is used the proper cost.

F. CAPITAL PROGRAM AND ANNUAL OPERATING EXPENSE

DuPont stated in its Opening evidence that it allotted two-thirds (66%) of the salaries of the Vice President-Engineering and his direct reports to operating expense, with the remainder to be capitalized. DuPont allotted 100% of the field MOW staff salaries to operating expense.[94] NS allotted 85 percent of these salaries to operating expense,[95] stating that, since all program maintenance would be capitalized, the involvement of the General Office staff is much less than would be the case of program work were performed by railroad employees using railroad equipment and using material purchased and handled by the engineering department. DuPont's allocation of two-thirds of the Vice President and General Office staff, plus 100 percent of the

[94] *See* DuPont Opening Exhibit III-D-3, p. 30 Inadvertently, DuPont included 100 percent of the salaries of the Vice President and his direct reports as operating expense. NS noted this error through a comment in its maintenance of way spreadsheet titled "Exhibit III-D-3 NS DRR MOW xlsx", tab "Totals-Reply", col D, line 5, where it states "DuPont $111M is in error. Should be $103 after deduction for non-maintenance portion " In Rebuttal, DuPont corrects this error and includes only the expense portion of the Vice President and his direct reports as an operating expense

[95] *See* NS Reply, p III-D-263.

field staff, to operating expense is appropriate. The Vice President and General Office staff will be required to plan, contract and oversee contractors who are performing the programmed maintenance which is not a small task and will easily consume one-third of the staff's time.

However, in discussing the general office personnel responsible for MOW functions – which includes a Chief Engineer-Maintenance-of-Way (who presumably, and illogically, reports to the Assistant Vice President ("AVP") Maintenance-of-Way and Structures) and other "Assistant Vice Presidents" responsible for specific MOW functions – NS assigns salary percentages varying from 10 percent to 100 percent of operating expense [96]

For example, NS's AVP-Communications & Signals is the equivalent of DuPont's Communications & Signals Engineer. NS assigns 99 8 percent of this AVP's time to operating expense activities, compared with 30 percent for DuPont's equivalent position

Given the differences between the parties on the general office staff and the varying percentages of their time (and salaries) assigned to operating expense by NS, the Board should accept DuPont's proposal to assign a flat 66 percent of the general office staff salaries to operating expense.

G. FURTHER COMMENTS BY NS EXPERTS ADDRESSED BY DUPONT IN REBUTTAL

In Reply, NS provided many comments regarding DuPont's MOW plan on Opening Many of the comments were repetitive, or were based upon misperceptions; failure to acknowledge the conditions of the newly constructed DRR infrastructure compared to the older NS lines being replicated, failure to acknowledged the lessened work load of local crews based on the use of contractor forces for capital projects, NS's experts' arbitrary increase of all crews

[96] *See* NS Reply e-workpaper "Exhibit III-D-3 NS DRR MOW.xlsx "

based solely on NS increasing the number of Roadmasters (which was not supported, nor realistic), and other factors outlined in the Introduction herein.

The additional comments by NS are listed and addressed in Appendix B to Rebuttal Exhibit III-D-2.

In summary, DuPont's revised annual MOW expense for the DRR equals $156.9 million at the 2009 level.[97]

[97] *See* DuPont Rebuttal e-workpaper "Rebuttal Exhibit III-D-2 MOW.xlsx."

REBUTTAL TO NS REPLY COMMENTS

In an effort to increase the number of MOW employees needed, in Reply, NS added new departments (e g the Construction Department, the Industrial Development Department, and the Technical Services Group within the DRR's MOW group) and new positions within the MOW staff These additional departments and the associated positions are unnecessary on the DRR.

A. NS PROPOSED AN UNNECESSARY CONSTRUCTION DEPARTMENT

There is absolutely no need for a construction department on the DRR since the DRR has already been designed and constructed The purpose of the existing NS Construction Department is almost exclusively for the purpose of constructing new capacity projects or projects funded by others. Any additional traffic, not considered in the RTC model, would be the funding source for any new capital projects needed, and should not be considered in the DRR SARR The Construction Department is completely unnecessary on the DRR.

B. NS PROPOSED AN UNNECESSARY INDUSTRIAL DEVELOPMENT DEPARTMENT

There is absolutely no need for an industrial development department on the DRR since the DRR has been designed and constructed. The existing NS Industrial Development Department assists industries (existing and potential customers) with the survey and design of facility changes and new facilities in order to obtain more business for NS. The customer is ultimately responsible for the cost of its new track and the main line turnout construction as per current NS policies The DRR already has the traffic used in the RTC model and SAC analysis, therefore, there is no need for an industrial development department for the DRR.

REBUTTAL TO NS REPLY COMMENTS

C. NS PROPOSED AN UNNECESSARY TECHNICAL SERVICE GROUP

There is absolutely no need for a technical services group on the DRR since the DRR has been designed and constructed, and other functions proposed by NS are handled on the division level or headquarters level by the DRR staff proposed in Opening. The Technical Services Group, while not explained in detail, lists positions which are not necessary for the DRR, such as GIS mapping. The DRR would have been surveyed, mapped, and designed during the construction phase; therefore, the functions and positions listed are not necessary for the DRR. The functions listed as being necessary and covered by the proposed NS Technical Services Group are performed or carried out on the DRR by the staffing proposed by DuPont in Opening.

D. NS PROPOSED UNNECESSARY ADDITIONAL ENGINEERING DESIGN AND OTHER POSITIONS

The extra engineering positions added by NS may be typical for a large Class I railroad that must provide support for an aging infrastructure, industrial development, design and construction of new capital track infrastructure and capacity, intermodal construction projects, and maintenance of a large network of system work gangs and equipment infrastructure, however, none of these functions or positions are necessary for the proper maintenance and operations of the DRR.

1. Position – By – Position Rebuttal Regarding Positions Proposed by NS

The proposed departments referenced above and the following positions (and increased numbers of employees by position) are unnecessary for the operation of the DRR, and NS fails to provide supporting evidence for the need of the following positions, with very few exceptions, as

REBUTTAL TO NS REPLY COMMENTS

noted The positions enumerated below are unrealistic in terms of the operating and maintenance needs of the DRR.

1) NS adds an Assistant Vice president MW&S, which is an unnecessary level of upper management NS fails to explain the need for this position.

2) NS adds a Chief Engineer MW&S, which is an unnecessary level of upper management NS fails to explain the need for this position DuPont's VP Engineering acts as the Chief Engineer for the DRR as explained in Opening.

3) NS adds an Assistant Division Engineer – Bridges, which is an unnecessary level of upper management. DuPont's Divisional B&B Supervisor is more than capable of monitoring the necessary bridge inspection work and minor maintenance work. The need for this position was not justified by NS, nor substantiated with supporting evidence.

4) NS experts agree that there will be less maintenance required for the new bridges, but then added an additional B&B Supervisor at the division level for maintenance of the system bridges without providing any supporting evidence to justify an extra Supervisor.

5) NS adds B&B Foremen - NS experts agree that there will be less maintenance required for the new bridges, but double the number of B&B foremen for maintenance of the system bridges, without providing any supporting evidence to justify the extra employees. The existing NS lines being replicated require more B&B employees because of the numerous existing timber bridges, and older steel structures that require more annual maintenance and more detailed inspections The existing bridges have more spans and more components to inspect and maintain than on the DRR

6) NS adds B&B laborers - NS experts agree that there will be less maintenance required for the new bridges. but double the number of B&B laborers for maintenance of the system bridges, without providing any supporting evidence to justify the extra employees. NS also adds more B&B machine operators and equipment, even though there are no timber bridges to maintain, and the bridges are new, requiring virtually no maintenance

7) NS adds bridge inspectors - NS experts agree that all bridge construction on the DRR will be new concrete and steel bridges, and that there will be less maintenance required for the new bridges, but NS experts add additional inspectors for the system bridges, without providing supporting evidence. Based on his experience performing and managing bridge inspections for hundreds of railroad bridges annually, conforming to FRA regulations, Mr. Crouch reaffirms that the number of inspectors provided for the DRR by

REBUTTAL TO NS REPLY COMMENTS

DuPont in Opening is reasonable to perform the bridge inspections necessary for the DRR.

8) NS adds unnecessary Bridge Tenders - The DRR movable bridges are operated by remote control as stated in Opening; therefore, the Bridge Tenders added by the NS experts to the MOW B&B staff are not necessary, and the addition of those employees is unrealistic, unreasonable, and unsupported

9) NS adds additional Administrative staff at the Division level. DuPont provided adequate explanation of the reasonable need for administrative staff. NS created a greater need for support staff by doubling the number of employees in most MOW staff positions and by creating unnecessary departments and positions. DuPont rejects the arbitrary increases in crews and employees, and the addition of unnecessary departments and positions.

10) NS adds a new position – Director, Maintenance Services. The need for this position was not justified by NS, nor substantiated with supporting evidence.

11) Regarding the Manager of Maintenance Equipment, DuPont has a similar position, but uses 2 people instead of the 1 provided for by NS experts.

12) NS adds additional Supervisors of Work Equipment Maintenance at the Division level The need for this position was not justified by NS, nor substantiated with supporting evidence. Because NS experts simply doubled the Roadmaster territories, and arbitrarily doubled the crews associated with each Roadmaster, NS created on paper the requirement for a much larger number of MOW equipment than is necessary, justified, or supported. The doubling of the number of Roadmasters was not justified, and the associated arbitrary doubling of work crews and equipment was also not justified.

13) NS adds an Engineer, Track and Materials. The need for this position was not justified by NS, nor substantiated with supporting evidence. Contractors furnish the materials used for capital program and construction.

14) NS adds two Engineers, Material Management. The need for this position was not justified by NS, nor substantiated with supporting evidence.

15) NS adds an Engineer, Rail and Geometry Tests. The need for this position was not justified by NS, nor substantiated with supporting evidence. This function is performed on the DRR at the division level.

16) NS adds a System Track Analyst. The need for this position was not justified by NS, nor substantiated with supporting evidence The DRR system has already been designed and constructed, and will not be modified during the 10-year life of the DRR.

REBUTTAL TO NS REPLY COMMENTS

17) NS adds a Manager, Programs and Contracts, which is unnecessary. This position and the functions related to it are covered by the Engineer of Programs and Contracts, and supported by the manager of Administration and Budgets

18) NS adds a Director of Bridges and Structures. There is only a need for one Bridge Engineer for the entire system since all of the bridges needed for the DRR have been designed and newly constructed, and virtually no major maintenance would be required The need for this position was not justified by NS, nor substantiated with supporting evidence The DRR system has already been designed and constructed, and will not be modified during the 10-year life of the DRR

19) NS adds an Engineer Structures The need for this position was not justified by NS, nor substantiated with supporting evidence. The DRR system has already been designed and constructed, and will not be modified during the 10-year life of the DRR.

20) NS adds an Assistant Engineer Structures. All of the bridges and structures needed for the DRR have been designed and constructed, and virtually no maintenance would be required. The need for this position was not justified by NS, nor substantiated with supporting evidence.

21) NS adds a Manager, Engineering Services, Bridges and Structures. All of the bridges and structures needed for the DRR have been designed and constructed, and no major maintenance would be required. The need for this position was not justified by NS, nor substantiated with supporting evidence

22) NS adds a Clearance Engineer. There is no need for this position, and the need for this position was not justified by NS, nor substantiated with supporting evidence. The DRR was designed and constructed with allowance for proper clearances at all bridges and tunnels. The modern DRR would not be designed with any horizontal or vertical clearance defects or deficiencies built in This position is not necessary.

23) NS adds an AVP Communications and Signals The need for this position was not justified by NS, nor substantiated with supporting evidence. It is another example of an unnecessary layer of upper level management that has no useful function. The C&S infrastructure of the DRR has already been designed and built

24) NS adds a Superintendent of Communications and Signals The need for this position was not justified by NS, nor substantiated with supporting evidence

REBUTTAL TO NS REPLY COMMENTS

25) NS adds an Assistant Superintendent of Communications and Signals The need for this position was not justified by NS, nor substantiated with supporting evidence.

26) NS adds 8 Terminal Supervisors, C&S. The need for this position was not justified by NS, nor substantiated with supporting evidence.

27) NS adds 8 Signal Technicians, Hump The need for this position was not justified by NS, nor substantiated with supporting evidence. There were no hump yards in Opening on the DRR.

28) NS adds 48 Signalmen, Hump The need for this position was not justified by NS, nor substantiated with supporting evidence. There were no hump yards in Opening on the DRR

29) NS adds 38 Signal Technicians The need for this position was not justified by NS, nor substantiated with supporting evidence.

30) NS essentially doubles the DuPont number of Signal Maintainers, based on claims made regarding the number of signal units covered by each signal maintainer, and rejecting DuPont's assignment of one Signal Maintainer for every 2,000 signal units. DuPont disagrees with NS's Claims. The final number of Signal Maintainers in Rebuttal is based on the final number of signal units provided for in Rebuttal. The number of Signal Supervisors is adjusted based on the change in the number of required Signal Maintainers.

31) NS adds 19 relief signal maintainers. The need for this position was not justified by NS, nor substantiated with supporting evidence.

32) NS adds 5 CTC Center Technicians. DuPont Experts accept the need for these 5 positions, as reflected on the MOW staffing plan in Rebuttal Exhibit III-D-2 DRR MOW.xls

33) NS adds 10, for a total of 28 Communications Technicians The need for this higher number of technicians was not justified by NS, nor substantiated with supporting evidence

34) NS adds 5 Control Center Supervisors. The need for this position was not justified by NS, nor substantiated with supporting evidence.

35) NS adds a Director of Advanced Train Control. The need for this position was not justified by NS, nor substantiated with supporting evidence.

36) NS adds an Engineer of Train Control. The need for this position was not justified by NS, nor substantiated with supporting evidence. The DRR signal

REBUTTAL TO NS REPLY COMMENTS

system has already been designed and constructed, and will not be modified during the 10-year life of the DRR.

37) NS adds an Engineer – Records and Compliance. The need for this position was not justified by NS, nor substantiated with supporting evidence

38) NS adds an Engineer – PTC Communications Systems. The need for this position was not justified by NS, nor substantiated with supporting evidence The DRR signal system has already been designed and constructed, and will not be modified during the 10-year life of the DRR

39) NS adds two Engineers – PTC The need for this position was not justified by NS, nor substantiated with supporting evidence. The DRR signal system has already been designed and constructed, and will not be modified during the 10-year life of the DRR.

40) NS adds an Engineer – C&S Engineering The need for this position was not justified by NS, nor substantiated with supporting evidence The signal and communications systems have already been designed and built for the DRR, so this position is unnecessary.

41) NS adds a Manager, Microwave and Data Systems. The need for this position was not justified by NS, nor substantiated with supporting evidence The signal and communications systems have already been designed and built for the DRR, so this position is unnecessary.

42) NS adds a Coordinator – Communications Control Center. The need for this position was not justified by NS, nor substantiated with supporting evidence.

43) NS adds an Engineer, AEI's and FED's The need for this position was not justified by NS, nor substantiated with supporting evidence. The DRR was designed and constructed with allowance for these devices.

44) NS adds a Manager – Communications System. The need for this position was not justified by NS, nor substantiated with supporting evidence

45) NS adds a Communications Engineer, VHF Systems. The need for this position was not justified by NS, nor substantiated with supporting evidence The communications system has already been designed and built for the DRR, so this position is unnecessary.

46) NS adds a Communications Engineer, Communications Plant. The need for this position was not justified by NS, nor substantiated with supporting evidence.

47) NS adds a Manager – Electronic Systems. The need for this position was not justified by NS, nor substantiated with supporting evidence.

REBUTTAL TO NS REPLY COMMENTS

48) NS adds an Electronic Engineer – Automatic Train Control. The need for this position was not justified by NS, nor substantiated with supporting evidence. The signal and communications systems have been designed and built for the DRR.

49) NS adds an Engineer – Electronic Railway Systems. The need for this position was not justified by NS, nor substantiated with supporting evidence The signal and communications systems have been designed and built for the DRR.

50) NS adds an Administrator – Grade Crossing program The need for this position was not justified by NS, nor substantiated with supporting evidence. The grade crossings have all been built, and maintenance is planned for in the DCF model Any requests for new grade crossings would be handled through the Public Projects Engineer and the entity contracted to provide right-of-way leases and agreements

51) NS adds a Highway Crossing Engineer. The need for this position was not justified by NS, nor substantiated with supporting evidence. This positions is not needed, crossings have been designed and constructed for the DRR. New applications for crossings can be handled by the Public Projects Engineer or a third party contractor which will be paid for by the proper agency (this is a standard practice on most railroads, including NS) applying for a new grade crossing or upgrade to an existing crossing

52) NS adds two System Engineers. The need for this position was not justified by NS, nor substantiated with supporting evidence.

53) NS adds a Process Control System Engineer. The need for this position was not justified by NS, nor substantiated with supporting evidence

54) NS adds an AVP Engineering Design and Construction. The need for this position was not justified by NS, nor substantiated with supporting evidence The DRR has already been designed and constructed for the proper capacity. There is no need for any design engineers, nor any Construction Department or related personnel

55) NS adds a System Engineer - design The need for this position was not justified by NS, nor substantiated with supporting evidence. No new design is necessary.

56) NS adds 4 Design Engineers. The need for this position was not justified by NS, not substantiated with supporting evidence. The DRR has already been designed and constructed for the proper capacity. There is no need for these employees on the DRR.

REBUTTAL TO NS REPLY COMMENTS

57) NS adds a System Engineer – Public Projects, and calls for 8 Public Project Engineers. DuPont rejects the need for 1 + 8 employees for this position, and has 4 of these employees listed in Opening DuPont rejects NS's claim as unsupported and unrealistic

58) NS adds an Administrative Engineer – Utility Construction. The need for this position was not justified by NS, nor substantiated with supporting evidence

59) NS adds a Public Utility Engineer The need for this position was not justified by NS, nor substantiated with supporting evidence. Utilities are handled under Public Projects, or handled by a third party consultant, and paid for by the utility company applicant, as on most railroads.

60) NS adds a Manager Construction. The need for this position was not justified by NS, nor substantiated with supporting evidence, and is not needed for the DRR - the DRR has already been constructed with the necessary capacity, based on computer modeling of train operations. On the DRR, a construction department is completely unnecessary as are employees of this type.

61) NS adds a Manager Architectural Services. The need for this position was not justified by NS, nor substantiated with supporting evidence, and is not needed for the DRR - the DRR has already been constructed with the necessary facilities.

62) NS adds an AVP Technical Services. The need for this position was not justified by NS, nor substantiated with supporting evidence. NS failed to justify or support its argument for adding a whole new Technical Services Group. The functions are not necessary for a newly planned, surveyed, mapped, designed, and built railroad that was surveyed, mapped, and designed based on specific capacity, operations, and infrastructure needs

63) NS adds a Director of Costs and Business Systems The need for this position was not justified by NS, nor substantiated with supporting evidence.

64) NS adds a Manager, Engineering Costs. The need for this position was not justified by NS, nor substantiated with supporting evidence Most of the engineering positions added are not necessary for the newly constructed DRR, which needs no more capacity than was originally designed

65) NS adds two Cost Control Analysts The need for this position was not justified by NS, nor substantiated with supporting evidence. This function is handled under the Engineer of Programs and Contracts, and Manager Administration and Budgets

REBUTTAL TO NS REPLY COMMENTS

66) NS adds a Manager, Engineering Systems The need for this position was not justified by NS, nor substantiated with supporting evidence.

67) NS adds two Systems Analysts The need for this position was not justified by NS, nor substantiated with supporting evidence.

68) NS adds two Joint Accounts Engineers. The need for this position was not justified by NS, nor substantiated with supporting evidence

69) NS adds a System Engineer – Mapping and Utilities. The need for this position was not justified by NS, nor substantiated with supporting evidence. The DRR is surveyed and mapped during engineering and construction.

70) NS adds a System Track Analyst. The need for this position was not justified by NS, nor substantiated with supporting evidence.

71) NS adds an Engineer – Planning. The need for this position was not justified by NS, nor substantiated with supporting evidence. The DRR has already been planned, designed, and constructed to the proper capacity There is no supported need for this position

72) NS adds an Asset Inventory Engineer. The need for this position was not justified by NS, nor substantiated with supporting evidence.

73) NS adds a Supervisor – Engineering Tax Reporting. The need for this position was not justified by NS, nor substantiated with supporting evidence. Taxes and work related to taxes are handled under G&A.

74) NS adds a Map Engineer. The need for this position was not justified by NS, nor substantiated with supporting evidence The DRR has already been surveyed, mapped, designed, and constructed

75) NS adds a Micrographic Technician. The need for this position was not justified by NS, nor substantiated with supporting evidence.

76) NS adds a GIS Manager The need for this position was not justified by NS, nor substantiated with supporting evidence The DRR was surveyed and mapped during engineering and construction of the DRR

77) NS adds an Engineer – System Design - GIS The need for this position was not justified by NS, nor substantiated with supporting evidence. The DRR was surveyed and mapped during engineering and construction of the DRR

78) NS adds an Engineer – GIS. The need for this position was not justified by NS, nor substantiated with supporting evidence. The DRR was surveyed and mapped during engineering and construction of the DRR.

REBUTTAL TO NS REPLY COMMENTS

79) NS adds a System Engineer – Real Estate. The need for this position was not justified by NS, nor substantiated with supporting evidence There is no need on the DRR for the acquisition of additional real estate or property.

80) NS adds an Assistant Engineer – Real Estate The need for this position was not justified by NS, nor substantiated with supporting evidence. There is no need on the DRR for the acquisition of additional real estate or property.

81) NS adds an Office Manager. The need for this position was not justified by NS, nor substantiated with supporting evidence.

82) NS adds 24 Management Trainees. The need for this position was not justified by NS, nor substantiated with supporting evidence.

83) NS provides for a total of 13 Administrative Assistants. The need for the additional number of employees in this position was not justified by NS, nor substantiated with supporting evidence

Almost all of the positions and additional employees added by NS in Reply are unnecessary, unrealistic, and unsupported, and should be rejected, with the exception of. the adjustment to Signal Maintainers and Signal Supervisor positions, based on the final number of signal units on the DRR in Rebuttal; MOW Control Center Technicians (using the five (5) employees recommended by NS in Reply), and rail lubricator repairmen (using the 38 employees recommended by NS in Reply).

On Reply, NS experts overstate the need for the number of employees for many of the MOW field and office positions proposed by DuPont in Opening. Their overstatements of need are based on inherent flaws in their plan, including overstatement of the size of the DRR infrastructure; the unrealistically small average Roadmaster territory size, the arbitrary, unsupported doubling of the number of track crews, smoothing crews. and other crews related to the number of Roadmasters submitted by DuPont in Opening. the reduced need for regular and spot maintenance on an annual basis due to having a newly constructed railroad infrastructure; and, the fact that Roadmasters and their local crews no longer perform support functions for the

REBUTTAL TO NS REPLY COMMENTS

railroad's system gangs since contractors perform all capital work. NS's staffing plan for MOW is overstated, unrealistic, infeasible, and unsupported.

An example of NS's overstated, bloated, staffing plan is the suggested use of one (1) Manager and four (4) Supervisors of Work Equipment rather than the two (2) positions proposed by DuPont. DuPont suggests that this increase is based on the overstated amount of Railroad leased equipment, which is based on an overstatement of MOW employee needs, and the artificial doubling of the number of work crews by NS in Reply

This appendix contains specific claims and assertions made by NS in Reply, many of which are duplicated claims and assertions covered in the DuPont MOW rebuttal narrative. DuPont experts, in an attempt to address all of NS's experts' claims and assertions in Reply, have included the following claims and assertions in an attempt to provide a complete response to NS in Reply.

MOW REBUTTAL - ADDITIONAL SUPPORTING INFORMATION

This Appendix provides additional information supporting DuPont's maintenance of way Rebuttal evidence addressing NS's Reply comments and arguments made in both NS's text and documents found in its maintenance of way related workpapers.

A. NS CLAIMS INSUFFICIENT MOW STAFF

On Reply, NS attacks DuPont's MOW plan by claiming that "DuPont's proposed staffing is not nearly sufficient to properly maintain the DRR's expansive network of high-density lines."[1] NS also claims that "DuPont presents no evidence that can explain how DRR could operate with such a ludicrously small staff"[2] NS attacks DuPont's MOW plan for the DRR as inadequate due to its high density lines, and NS experts claim to have identified many flaws in DuPont's MOW evidence which include failure to address relative traffic density and train frequency, and external environmental factors such as weather and terrain[3]

On Opening, DuPont experts considered the annual gross tonnage and standard industry practices in creating all of the DRR's MOW testing and maintenance cycles, and in setting up criteria for the DRR's crew sizes, the type of crews required, the number of each type of crew needed, and the equipment needed to support each type and quantity of crews and equipment. NS fails to provide supporting evidence to substantiate its claims against DuPont's MOW plan in Reply. As described in the Introduction of the MOW rebuttal narrative, NS fails to consider the realistic maintenance requirements of the newly constructed DRR in Reply. and presents an unrealistic, unsupported, and, inflated quantity for MOW staff and related equipment in reply

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1 *See* NS Reply, p. III-D-195.
2 *Id*
3 *Id*, p III-D-197

MOW REBUTTAL - ADDITIONAL SUPPORTING INFORMATION

B. NS DOUBLES THE STAFF SIZE AND ANNUAL COST OF MOW EXPENSES IN REPLY

NS proposes to more than double the DRR's annual MOW expense, from $156.6 million in Opening to $377.1 million in Reply. NS also proposes to increase the DRR's office and field MOW personnel by 126 percent, from 1,006 employees to 2,270 employees, or an increase of 1,264 employees.[4]

1. NS Claims DuPont Experts Ignored Size of the DRR, Annual Tonnage, and Other Factors

NS experts claim that the DRR's MOW plan developed by its principal engineering expert, Harvey Crouch, ignores the DRR's size, tonnage, varied terrain, and other less significant factors.[5] NS also makes many statements claiming that the DRR plan is "simplistic," "flawed," and "patently insufficient." The NS argument is based on a criticism of the DRR plan as being a "paper exercise". These claims are absurd.

First, as detailed in his Statement of Qualifications, Mr. Crouch has considerable experience designing, building and maintaining railroad lines in the territory served by the DRR, including direct field experience as a track supervisor and member of the NS Engineering Department.[6] His consulting firm, headquartered near Nashville, TN, specializes in railway engineering and has planned, designed, and supervised numerous successful railroad construction and MOW projects in the DRR region. Mr. Crouch and his team at Crouch Engineering are well-aware of the geography, topography, soils, weather, and other conditions in

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[4] NS states the total number of DRR MOW employees using three (3) different totals: 2,133 (NS Reply Table III-D-50); 2,270 (NS Reply Table III-D-51), and 2,332 (e-workpaper "MOW Workforce - 28.xlsx")

[5] *See* NS Reply, pp. III-D-197-200

[6] *See* DuPont Opening, Part IV

which the DRR must be constructed and operate. They are also familiar with NS's maintenance practices, and followed them where appropriate in designing the DRR MOW plan.

Contrary to NS's insinuations, Mr. Crouch is well-aware that a railroad that handles a high volume of heavy tonnage trains must be maintained to a different standard than a railroad with lower traffic densities and less traffic. Mr. Crouch's MOW plan considered annual gross tonnage as **the** major factor affecting maintenance requirements on the DRR and was considered during development of the MOW plan as presented in Opening. Annual gross tonnage is **the** major factor in terms of impacts on MOW maintenance requirements and testing frequencies. Of course, as stated by the NS experts, the length of track is a major factor in determining the number of employees needed, and the annual maintenance costs, but that really goes without saying.

All calculations for maintenance needs have a length of track component. To insinuate that Mr. Crouch ignored the size of the DRR system is ludicrous All annual work and costs set forth in Opening by DuPont were based on annual gross tonnage **and** the length of the tracks in the DRR system, and other factors presented in Opening.

Other important factors considered by Mr Crouch and his team, in addition to annual gross tonnage and length of track, included track geometry, including grades and curves; geography; climate; maximum authorized train speeds; and train car weights.[7] The factors mentioned above, along with annual gross tonnages, drove the design of maintenance frequencies, testing frequencies, and staffing.

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[7] 286,000-pound cars move mostly in unit coal trains, which comprise a minority of the DRR's traffic. Most of the DRR's merchandise trains, and all of its intermodal trains, have cars or containers that are loaded to considerably less than 286,000 pounds GWR. However, Mr Crouch designed the DRR MOW plan primarily for the 286,000-pound loads.

MOW REBUTTAL - ADDITIONAL SUPPORTING INFORMATION

Following are just a few of the examples of the DuPont experts use of or consideration of annual tonnage and other significant factors in the design and preparation of the MOW plan:

1) Traffic density/annual tonnage was used to develop thresholds for the rail section used in each type of track (e.g 115 RE CWR was used where annual gross tonnage was below 20 MGT).

2) Traffic density/annual tonnage was used in developing maintenance cycles for ultrasonic rail testing.

3) Traffic density/annual tonnage was used in developing maintenance cycles for geometry car testing.

4) Traffic density/annual tonnage was used in developing maintenance cycles for the rail grinding program.

5) Curvature was used in planning for use of head hardened rail, spiking patterns, super elevation, ballast quantities, and other calculations;

6) Climate and location were considered in developing the level of vegetation control required.

7) Climate and location were considered in developing snow removal costs.

To state that the factors mentioned by NS in Reply were not addressed by DuPont's experts in developing the design of the DRR or the development of the MOW plan is simply not factual, and is unsupported, as demonstrated in the examples above.

Annual gross tonnage over a line is the most significant factor with respect to rail wear. DuPont experts considered other factors, and incorporated those considerations into its design. DuPont used head hardened rail on all main line curves of three (3) degrees or greater. Rail wear was considered in the development of the MOW plan and design. Rail replacement programs, and timber replacement programs as well as grade crossing paving programs were considered in the DCF model.

MOW REBUTTAL - ADDITIONAL SUPPORTING INFORMATION

Mr. Crouch also considered NS's own maintenance standards, as well as other industry standards for maintenance practices based on annual gross tonnage

2. NS Experts Fail to Acknowledge the Dramatically Lower Amount of Annual Maintenance Required for Newly Constructed Railroad Infrastructure

This topic is covered in the MOW Rebuttal narrative Introduction. NS experts acknowledge that, because the DRR bridges are all new steel and concrete bridges, they will require less maintenance; however, the NS experts fail to acknowledge that, because the track and roadbed are new, the track and roadbed will also require very little maintenance in the ten year life of the DRR.[8] The NS experts set a double standard by taking this approach, and they completely ignore the new condition of the DRR infrastructure (except for the bridges). Mr. Crouch explains in detail the staffing and cost impacts of ignoring the fact that the DRR is newly constructed in following sections.

3. NS Inflates the Annual Maintenance, Staffing, and Equipment Needs for the DRR by Adding Additional Facilities Not Necessary for Operation of the DRR

Another very large difference in DRR and NS MOW costs is based on the difference between the DuPont DRR maintenance-of-way staff size and related annual MOW maintenance cost presented in Opening, and the staff required by the larger infrastructure NS proposed in Reply (which increased the size of the DRR system, along with the number of yards and other facilities, and the number of MOW employees in Reply) NS more than doubled the DuPont

[8] *See* NS Reply, p III-D-235.

MOW REBUTTAL - ADDITIONAL SUPPORTING INFORMATION

DRR MOW costs in Reply without providing reasonable evidence in support of its larger system and the subsequent larger staff claimed by NS.

DuPont's experts acknowledge that a larger system with respect to route miles would require more staff, in proper proportion.

NS experts failed to state that increasing the size of the system was a significant reason for their higher MOW staffing and maintenance plan costs. Instead, NS claimed simply that the DRR did not provide adequate staff or equipment, or provide for enough maintenance, so NS added more MOW staff

4. NS Experts Make Unsupported Claims and Assertions that Because its [Exaggerated] Costs are Higher, DuPont's Plan and Costs are Inadequate

NS made numerous statements about its maintenance costs being higher than DuPont presented in Opening Evidence in an effort to paint the DRR MOW staffing maintenance plan as being inadequate; however, NS fails to mention that its escalated costs are based in part on NS claiming more facilities and more route and track miles in its proposed system, and the fact that NS doubled the number of Roadmasters, and arbitrarily doubled the number of local crews, smoothing crews, backhoes, etc.

NS failed to provide an "apples to apples" comparison between the maintenance needed for the newly constructed DRR system submitted in Opening evidence versus the larger, older, completely different system presented by NS in Reply.

MOW REBUTTAL - ADDITIONAL SUPPORTING INFORMATION

5. NS Experts Question Mr. Crouch's Knowledge of the DRR Lines

While Mr Crouch has worked extensively on railway projects throughout the eastern United States, he did not rely solely on his own past experience in developing the DRR's MOW plan. In the summer of 2011 he rode over the NS line from Greeneville, SC to New Orleans, (via Amtrak, and contrary to the claims by NS experts that he did not ride over the lines) to verify ditch, vegetation, railroad bridge type, overhead bridge type and other physical features of the railroad, validating and confirming his past experience and knowledge of the lines

He has planned and designed track projects in most of the states of the DRR system. Over his 35 years in the railway industry, he has observed the different types of terrain involved, roadbed and ditch conditions, track components and conditions, existing bridges and culverts (design, type and configuration), grade crossings and grade separations (which were very uniform in their design and construction), signal systems, and train operations in varying weather conditions on both tangent and curved track in mountainous, intermediate, and coastal-plain areas His past experience and follow-up inspections played an important role in developing the DRR's MOW plan.

6. NS Experts Criticize the DRR Roadmaster Territories in Reply

NS experts assert, as a criticism, that DuPont DRR Roadmaster territories were developed using an average number of route miles per Roadmaster territory [9] NS is correct with respect to there being an average size territory for DRR Roadmasters – that is a statistical fact for the DuPont DRR, as well as for the NS plan for the DRR. NS itself uses an average size

[9] *See* NS Reply, pp. III-D-197-198

MOW REBUTTAL - ADDITIONAL SUPPORTING INFORMATION

Roadmaster territory, just over 100 route miles average, and an average size Assistant Roadmaster territory, approximately 100 route miles (which is the same as the DRR in Opening).

While the DuPont DRR Roadmaster territories and locations may not be perfectly balanced, DuPont is correct in using the proposed number of Roadmaster territories in Opening. After carefully considering all of the DRR territories, DRR experts elected to use an approximate average of roughly 200 route miles per Roadmaster territory A 200 route mile territory is not uncommon on high volume short line railroads or on Class 1 railroads. There are many reasons for using an average size territory that are outlined below.

While criticizing the use of averages, NS itself uses route mile averages in assigning territories – NS experts assigned roughly 100 route miles of territory to each Assistant Roadmaster, just as provided for on the DRR by DuPont experts. Although stating it is unreasonable to use average sizes for Roadmaster territories, NS uses an average of just over 100 route miles of territory to size its Roadmaster territories

NS experts, in Reply, use an unsupported, unexplained, flawed, and unrealistic work load methodology and assignments for its Roadmasters. While criticizing Mr Crouch for using an "average" number of miles per territory, NS experts conveniently use Roadmaster territories that are approximately double the average miles of the DuPont territories in opening

NS experts use an average territory for Assistant Roadmasters of 100 route miles, accepting DuPont's approach There is no merit in the NS criticism of DuPont's use of an average size territory, because NS itself accepted the DRR average Assistant Roadmaster territories and itself uses a statistical average number of miles to develop its Roadmaster and Assistant Roadmaster territory sizes.

MOW REBUTTAL - ADDITIONAL SUPPORTING INFORMATION

On Reply, it is evident that NS experts based their Roadmaster plan on a 1970's version of the pre-NS system, in which division sizes were smaller, Roadmaster territories were smaller, and Track Supervisors had responsibilities for roughly average 100 route mile territories. This is an anachronistic and antiquated approach that fails to consider the DRR for what it is and how it is maintained, and is not consistent with current NS, CSX or other railroad practices

After the Southern Railway/N&W merger in 1982, the MOW department was studied, and in 1987, significant changes were made in terms of downsizing the MOW staff. Division sizes shrunk, positions were eliminated, and cuts were made in the MOW staff based on increasing and improving technologies, and economies of scale. The NS staffing plan for the DRR in Reply is unrealistic and unsupported because it is more aligned with the pre-1987 staffing-size of NS and not the modern staff size of NS.

In Mr. Crouch's experience, as recently as 1987, not every NS Track Supervisor had a hi-rail equipped truck. In the past, they were responsible for lines that had been in a state of deferred maintenance in earlier decades, and were responsible for coordinating and assisting with system rail laying crews, timber and surfacing crews, brush cutting crews, rail test and geometry test cars. Their local maintenance crews were often used for major rail change-out of welded rail in curves, performing bolt tightening, rebuilding turnouts, crosstie replacement in sidings and yard tracks, and other tasks that would not be performed by the local maintenance crews on the DRR either because of the newness of the system, or because the work would be done by Contractors.

Many of the tasks regularly performed by the Roadmaster and his crews on their 100 mile territory in the past are simply not needed on the DRR for the following reasons:

MOW REBUTTAL - ADDITIONAL SUPPORTING INFORMATION

1) The "new" roadbed, bridge, culvert, turnout, grade crossing, and track construction,

2) Drift at bridges is lessened by the longer spans and lack of timber bridge spans;

3) Ditches and culverts function properly because they are new, and made of good materials,

4) Vegetation control needs are less because the entire right-of-way has been cleared, grubbed, and seeded, and is controlled by weed spraying; and,

5) The fact that there is not a need for Roadmaster and maintenance crew support for capital projects and maintenance projects such as rail replacement projects, grade crossing paving projects, or timber and surfacing projects that are all bid to and performed by contractors on the DRR.

Because the responsibilities and duties of the modern Roadmaster have been changing over time, Roadmaster territories on many Class I railroads have grown in terms of route miles, with some territories in the range of 200 miles on existing lines. Many short line railroads, which use contract labor almost exclusively for various maintenance and capital projects, have Roadmaster territories in excess of 200 miles.

Class I railroad MOW Divisions have grown in terms of size over the last 3 decades with respect to the number of route miles per division, especially since the major railroad staff downsizing efforts that followed the passing of the Staggers Act in the 1980's. The number of divisions and division Engineers has been reduced since the 1980's

It may be easier to state what the DRR Roadmasters will not be doing that was considered a part of their common duties in the past when they had smaller territories. Since major program work such as rail laying, tie replacement programs, grade crossing paving, testing programs, and vegetation control are being performed/executed by contractors, the Roadmaster and his forces are no longer required to perform the support services that had been required by the railroad's in-house production crews in the past.

MOW REBUTTAL - ADDITIONAL SUPPORTING INFORMATION

Work routinely performed in the past, but not necessary to be performed on the DRR includes the following:

- Unloading of spikes, crossties, rail anchors, tie plates, and rail and other materials.
- Distributing and/or laying out crossties, tie plates, spikes, rail anchors, etc.
- Assisting the production crew with substitute labor or machine operators
- Clean-up and picking up materials following the work of the production crew.
- Making field welds following rail laying
- Setting up crew trailers
- Assisting production crews with moving vehicles around, access to work sites, traffic control, miscellaneous labor, etc
- Testing the rail.
- Disposing of or loading scrap or other released materials into rail cars or trucks.
- Restoring bond wires and signals.
- Cleaning, lubricating, adjusting, and checking turnouts for proper working order of switch stands, switch points, and power switches following tie replacement and rail laying programs.

Also, with two (2) Assistant Track Engineers per territory, there is less demand for the Roadmaster to accompany test vehicles over the Roadmaster territory.

The Roadmaster is free to line up his foremen and crews to perform spot maintenance, or planned switch, lubricator, or other maintenance on a daily basis, and assist the Assistant Roadmasters with inspections that are weather or event driven, as needed Spot maintenance requirements will be considerably less than on the aging NS replicated lines since the DRR railroad infrastructure is all new construction.

The DRR staffing plan submitted by DuPont uses 1 Assistant Roadmaster per 100 miles on average. NS's recommended plan also uses 100 mile average territories for Assistant Roadmasters (Assistant Track Supervisors). Each Assistant Roadmaster typically inspects 50 miles of track per day, covering each half of its territory twice a week The 100 mile territory has been a typical size for Assistant supervisors for decades because it is manageable and

realistic. However, the Roadmaster territory size has been growing over time, since the 1980's, with the mechanization and use of large system rail laying, timber and surfacing, ditching, and other crews, benefits of the widespread use of continuous welded rail, and the increased use of contractors for regular annual testing and maintenance, and capital programs.

7. NS Claims that Employee Route Mile Ratios Should be Used to Determine the Necessary Number of MOW Employees for the DRR, Rather than Relying on the Actual Maintenance Needs of the Newly Constructed DRR to Develop its MOW Plan

NS claims that the number of employees per track mile should be used as the proper measure of the staff size needed for maintenance of the DRR [10] This is a simplistic approach that ignores the actual maintenance needs of the newly constructed DRR NS compares the ratio of MOW employees per track mile in various SARR cases, none of which are of the magnitude of the DRR. NS suggests that the DRR, because of its size, would need a larger hierarchy of management, rather than recognize that there are economies of scale with size NS relies on an apples-to-oranges comparison, rather than designing the DRR for the conditions unique to its system.

It is not realistic to compare the DRR to other SARR's due to its size. For example, a SARR with 200 miles still requires an AVP MOW, a track (division) engineer, and a compliment of staff that must perform the same tasks required on the DRR, but on a smaller scale.

It is also unrealistic to compare the annual maintenance needs of the DRR with the annual maintenance needs and very different staffing and equipment needs of the existing NS lines being replicated

[10] *See* NS Reply, pp III-D-197-198.

MOW REBUTTAL - ADDITIONAL SUPPORTING INFORMATION

While past cases have considered comparisons based on other STB complaints, each Board decision has been based on the actual, individual, unique SARR system and the anticipated system requirements. The DRR is unique in that it is one of the largest SARR systems ever considered, and there are many economies of scale in consideration of the staff size that were not recognized or acknowledged by NS

8. NS Experts Double the Quantity of Roadmasters and Related MOW Crews and Equipment Without Supporting Evidence, or Sound, Logical Explanation

NS quickly, easily, arbitrarily, and inexplicably doubled the size of its MOW field staff primarily by nearly doubling the number of Roadmasters, then linking every type of crew that DuPont had assigned to a Roadmaster territory to the additional Roadmasters. NS experts effectively doubled the number of local work crews, smoothing crews, welding crews, etc Without providing supporting evidence or reasons based on existing practices, NS experts simply doubled the field staff, based on their new quantity of Roadmaster territories, failing to cite any actual needs. This arbitrary increase is without merit, support, or evidence, and is unrealistic, unsupported, and unnecessary.

9. NS Experts Criticize DuPont's Opening as a "Paper Exercise"

NS makes many statements and assertions that the DRR plan is "simplistic", "flawed", and "patently insufficient".[11] The NS argument is based on a criticism of the DRR plan as being a "paper exercise". The entire SAC process is a paper exercise, by the very nature of the Stand-Alone methodology. NS followed the same methodology as DuPont in establishing the MOW

[11] *See* NS Reply, p III-D-198.

plan, but overstates the maintenance needs, fails to mention or even consider the "new" track and roadbed construction, and adds significant positions and staff that are unnecessary, even adding entire departments that are unnecessary and unrealistic.

10. NS Does Not Acknowledge the Use of Non-Union Labor

Another significant flaw in the NS staffing plan assumptions is related to the fact that currently, NS employs many union employees, whose duties are restricted, and whose work rules are limiting. The DRR staff is not subject to those same limitations and restrictions.

11. NS Experts Claim that DuPont did not Consider Environmental Factors Environmental and Other Conditions

NS experts claim that precipitation and soil type in a geographic area are factors to consider in preparation of a MOW plan Precipitation and soil type can be ruled out as major factors for several reasons.[12] Precipitation occurs all over the DRR, and is handled perfectly well by its newly constructed roadbed (and crushed stone sub-ballast cap which drains the track roadbed to the ditches), ditches, culverts, and bridges. Precipitation, per se, has no impact on track maintenance over the ten (10) year life of the DRR.

Soil type varies all over the DRR. There is no one soil type per region or along the length of the DRR Furthermore, all soil encountered is stabilized during construction, the new roadbed is well-compacted, the new roadbed is capped with compacted crusher run sub-ballast which allows rainfall to drain off of the roadbed to ditches, ditches are adequate to convey storm water away from the roadbed; the soil subgrade does not get saturated because there is adequate

[12] *See* NS Reply, p. III-D-200.

drainage, the DRR's construction meets modern industry and AREMA standards. The NS argument or theory is unsupported, unrealistic, and without merit

NS presents a "note" drafted, and signed, by an unknown person (Full name not provided, experience record not provided).[13] In the "note", the author offers engineering opinions and conclusions without providing any evidence. This "note/evidence" is unsupported, infeasible, and unrealistic The "note" is questionable because the author begins it with an incoherent, incomplete sentence that fails to communicate the author's theory, and there is no explanation of who the author is, or what the experience of the author is.

On Reply, NS states "[t]he conclusion reached is that subgrade condition as determined by precipitation and soil types is the greatest differentiator between DRR lines "[14] NS does not state what it is the conclusion of There was no study mentioned, and no correlation provided or shown This claim is not quantitative, accurate, or founded in any science or studies.

NS also states " . DRR has relatively greater workforce requirements due to precipitation and soil types and population density but slightly lower relative workforce requirements due to snow and cold weather."[15] DuPont experts reject the NS claim that precipitation affects work force requirements as unsupported, infeasible, and unrealistic.

Precipitation and soil type are purported to be environmental factors by NS experts. NS fails to provide supporting evidence for its theory. NS's claim that precipitation is a factor on the DRR is unsupported and unrealistic.

NS experts also ignored the fact that the sub-grade on the DRR would have a stabilized sub-base, would be well compacted, would not be damaged from prior factors (jointed rail, joint

[13] *Id*
[14] *See* NS Reply e-workpaper "DRR Environmental Factors docx" p. 18
[15] *Id*, p. 1.

MOW REBUTTAL - ADDITIONAL SUPPORTING INFORMATION

pumping, washouts, poor ditch maintenance over time, etc.) and would be capped with a new crusher run sub-ballast roadbed cap, unlike the original railroad roadbeds of the NS lines being replicated. The track modulus will be more consistent on the DRR than on the existing NS lines being replicated. NS experts fail to properly explain and relate the modulus of elasticity of the roadbed with the track modulus The modulus of elasticity varies with depth of ballast, sub-ballast, and depth of stabilized sub-grade Because the DRR has a uniform ballast depth, a uniform sub-ballast depth, and well compacted stabilized roadbed, the modulus of elasticity will remain very uniform, and will therefore cause the track modulus to remain uniform, reducing the need for more frequent track surfacing. And, it is common knowledge in the railroad industry that newly constructed track and roadbed require very little maintenance within the first 10 years of use. Short of an extreme storm event, or washout, with a well-compacted roadbed, properly functioning ditches, and compacted, protective roadbed cap, precipitation is not a factor in roadbed stability for newly constructed roadbed and track.

In Reply, NS states "The principal drivers of infrastructure work load are the amount of assets maintained (track miles, switches, signals, bridges etc) and the intensity of their use measured principally in gross tons passing over the track "[16] NS states the principal drivers of infrastructure work load are how much track and the annual gross tonnage – Mr. Crouch agrees, and used annual gross tonnage over route miles to design the maintenance needs for the DRR.

NS then states "there are other secondary drivers of infrastructure workload that must be taken into account in establishing an appropriate maintenance workforce."[17] "This note describes four factors (precipitation and soil types, population density, snow and winter weather

[16] *Id*
[17] *Id*

MOW REBUTTAL - ADDITIONAL SUPPORTING INFORMATION

and heat) that have an impact on railroad infrastructure maintenance workload that vary among the various DRR line segments "[18]

The NS experts proceed to rule out temperature, snow, and cold weather as significant factors or material differentiators of work load....

- Temperature differences between north and south were not found to be a material differentiator of work load
- Snow and cold weather – NS admits "Slightly lower workforce requirements due to snow and cold weather "[19]

NS fails to provide evidence that precipitation is a significant factor in the cost of track maintenance. Its expert's claims are unsupported.

On Reply, NS asserts that DuPont did not account for rain.[20] That is ludicrous Rain is accounted for in the design of the DRR Precipitation falls from the sky onto the roadbed, where it is drained across the top of the sloped, compacted, crushed stone sub-ballast From the edge of the sub-ballast cap, the runoff makes its way into lateral ditches, and then culverts or bridges, all of which have been designed for the purpose of draining the DRR roadbeds. NS experts' claim that precipitation is a major factor in staffing the DRR MOW department is unrealistic and unsupported.

In its environment factors workpaper, NS states that "[t]he conclusion reached is that subgrade condition as determined by precipitation and soil types is the greatest differentiator between DRR lines, followed by population density."[21] It is precipitation that soaks into an existing roadbed where there was never any sub-ballast that is a problem, or a washout caused by

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[18] *Id.*
[19] *Id*
[20] *See* NS Reply, p. III-D-214
[21] *See* NS Reply e-workpaper "DRR Environmental Factors.docx "

a failed aged culvert or poorly maintained ditch line These are not significant factors on a newly built railroad.

C. NS USES A FLAWED, UNSUPPORTED MODEL AND APPROACH TO JUSTIFY MOW POSITIONS

On Reply, NS experts claim that, "after evaluating relevant DRR and external data, the NS MOW experts summarized the relevant characteristics that determine workforce requirements for each of the main DRR routes. The...experts then assigned the appropriate number of track maintenance crews and signal maintenance employees to each segment.. ' Reply Exhibits "Line Segment Work Load Evaluation.xlsx" and "Line Segment Work Load Support.xlsx".[22]

DuPont rejects the NS Reply spreadsheets referenced above and the data contained therein because the spreadsheets contain unsupported evidence, unexplained and incoherent calculations, lack of correlation between data, no explanation of any modeling or process or procedures, and no calculations in some cells, with un-sourced data inserted into the spreadsheet without reference or calculation.

NS fails to explain its model, where data came from, how data were used, and what calculations were made. The spreadsheets do not represent or yield any acceptable type of modeling or calculation effort and should be rejected.

D. NS FAILS TO UNDERSTAND THE MOW PLAN PRESENTED IN OPENING REGARDING THE DRR FIELD STAFF, AND DIVISION LEVEL SUPERVISION

On Reply, NS states, "DuPont provides for 136 field supervisors, but no divisional management for its four divisions... even without division management the DuPont workforce is

[22] *See* NS Reply, p. III-D-200

MOW REBUTTAL - ADDITIONAL SUPPORTING INFORMATION

top heavy ."."[23] NS's claim is simply not true As provided for in Opening, there are four Track Engineers, each one of whom is responsible for management of one of the four MOW divisions, and there is division support at each office including two Assistant Track Engineers, one Bridge & Building Supervisor, and an Administrative Assistant. Each division includes one Public Projects Engineer, four C&S Supervisors, one Bridge Inspector, and nine (9) Roadmasters, with 18 Assistant Roadmasters. Foremen report to their Roadmasters or supervisors. Roadmasters report to their Track Engineer. C&S maintains report to their Supervisors. Supervisors report to their respective engineering managers.

The NS statement that the "DuPont workforce is top heavy" conflicts with the statement made on the very next page, "DuPont's proposal simply does not provide sufficient management "[24] DuPont asserts that the management team for each division is adequate and reasonable for the level of maintenance anticipated on the DRR, and is neither "top heavy" nor insufficient". NS does not provide supporting evidence for either of its assertions, which are actually in conflict with each other

On Reply, NS doubles the size of the DRR staff without providing supporting evidence or information, and states that a workforce of over 2,300 is necessary for the DRR.[25] DuPont asserts that one reason for NS experts doubling the size of the MOW staff is based on using average 100 mile territories for Roadmasters, and then doubling every other category of worker, but without explaining why doubling the number of Roadmasters automatically requires doubling all other workers. NS exaggerates the size of the necessary workforce without proper support or justification.

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[23] *Id.* p III-D-202
[24] *Id.* p III-D-203
[25] *Id.* p. III-D-203.

MOW REBUTTAL - ADDITIONAL SUPPORTING INFORMATION

On Reply, NS adds organizational structure, management, and other positions for functions that are common in Class I railroads, but are not at all necessary for the operation of the DRR [26]

On the DRR, the general office does not manage the maintenance and replacement of the infrastructure assets, maintain road property asset inventories, maintain records for tax purposes, manage infrastructure relationships with governments or third parties (government project costs are reimbursed), analyze infrastructure and performance, or develop plans for infrastructure maintenance. These activities, as necessary, are carried out at the Division level.

On Reply, NS states that job titles and duties are listed in a workpaper entitled "MOW Job Titles and Position Descriptions pdf"[27] There was no such file provided in Reply DuPont assumes that NS is referring to file "MOW Position Description pdf"

On Reply, NS adds MOW positions that are not necessary, are redundant, or would be performed by contractors and funded by third parties.[28] NS fails to explain the need for most of these positions, and fails to acknowledge that many of the duties provided would not be necessary on the DRR

1. Transportation Cost of Materials and Equipment

On Reply, NS asserts that DuPont fails to provide for the transportation cost of materials and equipment.[29] NS's claim is unsupported. On Reply, NS claims that "DuPont's MOW plan neglects to include trucks and drivers needed to transport maintenance material and machines to the locations where they would be needed on the DRR network, nor does DuPont include costs

[26] *Id*, p III-D-203.
[27] *Id*, p III-D-204.
[28] *Id*
[29] *Id*, pp. III-D-215-216.

for outside contractors to perform this service."[30] There was no evidence provided by NS to indicate extra costs need to be included. Contractors perform program work, and handle the materials being supplied, and Suppliers deliver the purchased materials for capital projects and local maintenance The cost of capital work is included in the DCF model, not in annual maintenance.

2. NS Overstates Needs For Welding Crews

On Reply, NS states, "DuPont provided one welding gang per DRR Roadmaster for a total of 36 Welder/Helper/Grinder crews, which is completely inadequate."[31] The NS experts' claim is unrealistic and unsupported. NS experts fail to consider the new condition of the DRR, and fail to mention that they are currently maintaining an existing system composed of older and used components in varying stages of their useful life, most of which are not new Because the DRR is constructed new, with all new track and turnout materials, the maintenance needs will be much, much less for the DRR than on the existing NS lines being replicated (just as NS acknowledges that maintenance for the new DRR bridges will be less than for the existing NS bridges)

3. Switching Crews

On Reply, NS states, "NS MOW Experts accept the proposed crew size and equipment per crew, but disagree about the number of ditching crews required, [and] a yearly ditching program is particularly critical to avoid blocked drainage and pockets of water that soften and erode the subgrade."[32] With all new roadbed, ditch, and culvert construction, there will be very

[30] *Id*, p III-D-216
[31] *Id*, p III-D-217.
[32] *Id*, p III-D-220

MOW REBUTTAL - ADDITIONAL SUPPORTING INFORMATION

little ditch maintenance activity required within the life of the DRR. Moreover, NS does not perform maintenance on all of its ditches on an annual basis No railroad does. DuPont's planned number of ditching crews is very conservative for a newly constructed railroad DuPont rejects NS's proposed number of ditching crews as excessive, unrealistic, and unsupported.

On Reply, NS cites the Track Cyclopedia stating that ditches should have a minimum bottom width of 3 feet.[33] It is not clear why NS states this The typical roadbed section for the DRR roadbed indicates a two foot flat bottom ditch, which also happens to be a common ditch width in the design of modern NS infrastructure projects. The use of 3' flat bottom ditches is not the NS standard for new construction. Therefore, DuPont rejects the use of 3' flat bottom ditches as unnecessary and unrealistic

On Reply, NS states, "DuPont does not provide any justification or supporting documentation in its narrative regarding how the number of sixteen ditching crews was determined or any documentation of the 'field inspections' whereby DuPont supposedly determined that most NS roadbed was perched."[34] Ditching is performed primarily in cuts The DRR is starting out with new ditches and stabilized slope, with a vegetative cover There should be virtually no ditch maintenance required on the DRR in the first few years, and still very little maintenance required in the ten year life of the DRR

Also, on Reply, NS states, "[t]he NS MOW Experts reject DuPont's allegation that most of the NS roadbed for the lines being replicated by the DRR is perched "[35] Mr. Crouch reaffirms his observations based on his inspection between Greenville, SC and New Orleans, LA, by train, and his prior experience working all over the eastern US, and past experiences surveying,

[33] *Id*, pp. III-D-221-222
[34] *Id.*
[35] *Id.*

maintaining, and working on NS lines. He has also reaffirmed his position by viewing NS railway lines in Google Earth. For a railroad roadbed to be considered "perched", it is simply not in a cut, and has a few feet of fill material. The replicated NS lines have much more track footage in fills (embankments) than in cuts (excavation)

4. Management Oversight of Signal Supervisors

On Reply, NS experts claim DuPont fails to provide for management oversight of DRR signal supervisors [36] DuPont rejects this claim DuPont provided in Opening that C&S supervisors report to the two (2) Assistant C&S Engineers (each one covers two Divisions). DuPont will adjust, as necessary, the number of signal maintainers needed and related number of supervisors, based on the final number of signal units in rebuttal

5. Hump Yard Employees

On Reply, NS demands more MOW employees for hump yards [37] DuPont rejects the claim as unsupported, infeasible and unrealistic.

E. DESIGN OF THE DUPONT DRR MOW PLAN

Mr. Crouch focused on and used the actual maintenance needs for newly constructed track, turnouts, roadbed, bridges, grade crossings, culverts, etc., as well as the influence and impacts of annual gross tonnage, and environmental and topographic conditions to create the MOW staffing and equipment plan, and develop annual costs for the MOW department as explained in previous sections

Additionally, Mr Crouch took into account the fact that the DRR is not unionized, and thus does not need to follow the traditional craft boundaries (or layers of field supervision) that

[36] *Id*, pp III-D-226-227
[37] *Id*, p III-D-230

MOW REBUTTAL - ADDITIONAL SUPPORTING INFORMATION

are typical of Class I railroads such as NS. The DRR MOW plan and department staffing were based on the size of the DRR, consideration given to the decreased maintenance needs for new track and roadbed, and the development of individual maintenance territories, eliminating the need for a multi-layered management hierarchy such as the one used by NS .

NS's discussion of the DRR MOW plans (both DuPont's and NS's) is sponsored primarily by Don Bagley, who was in several MOW positions at NS, and who also worked in MOW for CSX. Most of Mr. Bagley's discussion of DuPont's MOW plan consists of unsupported opinion, and unrealistic and unsupported theories and studies. He does not compare the DuPont DRR plan – or his own DRR MOW plan – with actual NS maintenance standards and practices This may well be because those standards and practices support Mr. Crouch's MOW plan

PART III-F

PUBLIC VERSION

Table of Contents

III. STAND-ALONE COST III-F-1

F. ROAD PROPERTY INVESTMENT III-F-1

1. Land III-F-4

a Review of Norfolk Southern's Land Valuation III-F-5

b Rebuttal Of NS Review Of DuPont Appraisal: Summary III-F-11

c. Rebuttal of NS Appraiser's Review: Summary III-F-13

d. Easements III-F-14

2. Roadbed Preparation III-F-15

a. Clearing and Grubbing III-F-29

i. Quantities of Clearing And Grubbing III-F-29

ii. Clearing and Grubbing Unit Costs III-F-29

b Earthwork III-F-31

i Earthwork Quantities III-F-31

(1) DRR Line Segments III-F-31

(2) DRR Yards III-F-33

(3) Total Earthwork Quantities III-F-34

ii Earthwork Unit Costs III-F-35

(1) Common Excavation III-F-35

(2) Common Excavation – Adverse III-F-36

(3) Loose Rock Excavation III-F-39

(4) Loose Rock Excavation – Adverse III-F-40

(5) Solid Rock Excavation III-F-40

(6) Solid Rock Excavation – Adverse III-F-42

(7) Embankment/Borrow III-F-42

(8) Other Earthwork Quantities and Unit Costs III-F-43

(a) Stripping III-F-43

(b) Undercutting III-F-44

(c) Over-Excavation III-F-47

(d) Fine Grading III-F-48

(e) Swell III-F-49

(9) Subgrade Preparation III-F-51

(10) Land for Waste Excavation III-F-55

c Drainage III-F-57

i. Lateral Drainage III-F-57
ii. Yard Drainage. III-F-57
d. Culverts III-F-58
i Culvert Unit Costs..... III-F-58
ii. Culvert Installation Plans III-F-59
iii Culvert Quantities... ..... III-F-60
e Other III-F-61
i. Sideslopes. III-F-61
ii. Ditches III-F-61
iii. Retaining Walls III-F-61
(1) Increased Roadbed Width III-F-62
(2) Masonry Walls III-F-64
(3) Timber and Tie Walls.. ..... III-F-66
(4) Piles.. ..... III-F-66
(5) Foundation Excavation III-F-67
(6) Unit Costs..... III-F-67
iv. Rip Rap... ..... III-F-68
v Relocating and Protecting Utilities..... III-F-68
vi. Seeding/Topsoil Placement..... III-F-68
vii. Water for Compaction..... III-F-68
viii. Surfacing for Detour Roads... ..... III-F-68
ix. Environmental Compliance III-F-68
x. Lighting for Night Work..... III-F-69
xi. Dust Control Work..... III-F-70
3. Track Construction III-F-70
a Geotextiles..... III-F-72
b. Ballast and Sub-ballast III-F-73
i. Ballast and Sub-ballast Quantities III-F-73
ii. Ballast and Sub-ballast Unit Costs..... III-F-76
c. Ties III-F-80
d. Track (Rail)... ..... III-F-81
i. Specifications..... III-F-81
ii Rail Pricing..... III-F-81
iii. Field Welds III-F-82

iv. Insulated Joints.... ....III-F-83
v. Switches III-F-83
e. Other III-F-84
i. Rail Lubricators III-F-84
ii. Plates, Spikes and Anchors..... . ...III-F-84
iii. Derails and Wheel Stops III-F-84
iv. Crossing Diamonds..... ....III-F-85
v Materials Transportation..... . . ..III-F-85
vi. Track Labor and Equipment III-F-85
4. Tunnels.. . ... III-F-86
5. Bridges III-F-86
a Bridge Inventory..... .... III-F-87
b Bridge Design and Cost Overview III-F-90
i. Cost Overview III-F-91
ii. Bridge Design III-F-92
(1) Superstructure Design (Spans) III-F-92
(2) Substructure Design (Piers and Abutments) III-F-93
iii. Type I Bridges..... . ...III-F-94
iv Type II Bridges III-F-95
v. Type III Bridges.... .... III-F-95
vi Type IV Bridges III-F-97
vii Bridges with Multiple Span Types III-F-97
viii. Special Bridges III-F-98
(1) Movable Bridges III-F-98
(2) Exceptionally Tall Bridges..... .... III-F-106
(3) Non-Movable Bridges over Navigable Waters III-F-107
c Highway Overpasses..... . . .. III-F-107
d. Summary... .... III-F-108
6. Signals and Communications III-F-108
a. Centralized Traffic Control. III-F-108
i PTC Installation in 2009..... . ...III-F-108
ii. Inventory of Signal Components III-F-113
iii. Unit Costs for Signal Components III-F-115
b. Positive Train Control.. .... III-F-116

PUBLIC VERSION

i. PTC Wayside System III-F-116
ii. PTC IT Costs..... III-F-117
iii. PTC Locomotive Costs..... III-F-118
iv. PTC Development Costs..... III-F-118
v PTC Expenditure Schedule..... III-F-118
c Detectors III-F-118
d. Crossing Signal Equipment III-F-119
e. Communications III-F-120
f. Hump Yard Equipment..... III-F-120
g Summary..... III-F-121
7. Buildings and Facilities..... III-F-121
a Headquarters Building..... III-F-121
b. Fueling and Locomotive Servicing Facilities..... III-F-122
i. Fixed Fueling Facilities..... III-F-122
ii. Fueling by Truck and Locomotive Servicing Facilities..... III-F-124
c. Locomotive Repair Facilities..... III-F-124
d Car Repair Facilities III-F-125
e. Crew Change Facilities..... III-F-127
f. Yard Offices..... III-F-128
g. Maintenance of Way Buildings (Roadway Buildings) III-F-129
h. Wastewater Treatment III-F-131
i Other Facilities / Site Costs..... III-F-131
j. Guard Booths III-F-134
k. Mechanic Repair Shops III-F-135
l Mechanical Offices..... III-F-136
m Observation/Yard Master Towers III-F-136
n Storage and Warehouse Buildings III-F-137
o. Miscellaneous Buildings III-F-138
p. Foundation Designs III-F-138
q. Signal Maintainer Buildings III-F-138
r Intermodal Terminals..... III-F-139
s. Bulk Transfer Facilities III-F-139
t. Automotive Facilities III-F-140
8. Public Improvements III-F-140

PUBLIC VERSION

a. Fences III-F-141
b. Signs and Road Crossing Devices III-F-141
c. Grade-Separations..... . ... III-F-141
d. At-Grade Crossings.... .... III-F-142
e. At-Grade Crossing Detours III-F-142
f. At-Grade Crossing Vegetation Removal III-F-142
9. Mobilization III-F-143
10. Engineering..... .. . . III-F-145
11 Contingencies. III-F-145
12. Construction Schedule..... .... III-F-146
13. Joint Facilities / Shared Assets III-F-147
a. DRR Is Not Required To Construct The Facilities Of Non-Defendant Third Parties III-F-148
i NS Rail Does Not Own Conrail Or IHB..... ....III-F-149
ii. The DRR Is Not Required To Acquire The NS Rail Ownership Interest In The BRC And TRRA..... .. ..III-F-153
b. NS Has Not Properly Calculated The DRR's Ownership Costs For NS-Owned Joint Facilities III-F-155
c NS Improperly Substitutes Replacement Costs For Ownership Costs III-F-155
d. NS Includes Ownership Costs But Ignores Offsetting Revenues.. . ..... III-F-159
e. Conclusions..... .... III-F-165

III. STAND-ALONE COST

F. ROAD PROPERTY INVESTMENT

On Opening, DuPont presented feasible and well supported road property investment costs for the DRR. DuPont's Opening costs included an unprecedented $3,374 million for land acquisition and real-world costs for common earthwork and several other roadbed preparation items, all of which were lower than comparable Means Handbook unit costs. Otherwise, DuPont's Opening road property investment costs were generally consistent with those presented in other SAC cases

Typical of the approach taken by defendant railroads in other SAC cases, NS asserts that DuPont's road property investment costs are greatly understated. As explained below, NS's Reply Evidence investment costs are grossly overstated and, in many instances, are not adequately supported In addition, NS's road property investment costs are inflated due to its inclusion of costs to build what NS refers to as the Partially Owned Lines, which the DRR is not building For all of the reasons set forth in this Part, the Board should reject NS's road property investment costs and accept those presented by DuPont on Rebuttal, as shown in Rebuttal Table III-F-1.

Table III-F-1
DRR Road Property Investment Costs
($ in millions)

	Item	DuPont Opening	NS Reply	DuPont Rebuttal
	(1)	(2)	(3)	(4)
1	Land	$3,374	$5,324	$3,856
2	Roadbed Preparation	3,969	9,173	4,336
3.	Track Construction	8,242	10,628	8,208
4.	Tunnels	444	1,096	1,081
5	Bridges	1,928	4,348	2,273
6.	Signals & Communications	1,247	2,070	1,490
7.	Buildings & Facilities	229	2,636	1,044
8.	Public Improvements	122	256	177
10.	Subtotal	$ 19,555	$ 35,531	$22,465
11.	Mobilization	437	917	503
12.	Engineering	1,618	2,981	1,861
13	Contingencies	1,824	3,371	2,097
14.	Total Road Property Investment Costs	$ 23,434	$ 42,800	$26,926

Source DuPont Rebuttal Exhibit III-F-1

Prior to addressing the specific differences between DuPont and NS, it is necessary to address a theme that is prevalent in NS's Reply evidence. Throughout its Reply, NS questions the competence of several of DuPont's expert witnesses. DuPont's expert witnesses supporting the road property investment costs of the DRR have a vast array of experience.

The DRR's land valuation evidence is sponsored by Richard R. Harps, John G. Pinto, Elizabeth W. Vandermause, Daniel C Vandermause and Philip H. Burris Each of these individuals has a minimum of 30 years experience and as much as 45 years experience. Mr Harps has over 35 years of experience, is a past president of several real estate organizations and has valued property for acquisition by a large transit authority. Mr. Pinto has over 45 years of experience and has performed real estate appraisals related to railroad property and rights-of-way for government agencies, railroads, transit authorities and private sector entities Ms

Vandermause has over 30 years of experience and has conducted appraisals for a large transit agency Mr. Vandermause has over 22 years experience in real estate matters as well as 16 years experience in the railroad industry. Mr Burris has presented evidence pertaining to easements in stand-alone proceedings for over the last ten years

The remainder of DuPont's road property investment evidence is sponsored by Mr. Harvey A. Crouch, Mr. Victor F Grappone and Mr. Charles A. Stedman. Mr Crouch has over 30 years of railroad engineering experience and is a member of several railroad and engineering associations. Mr. Crouch worked for NS and its predecessor Southern Railway for ten years prior to founding Crouch Engineering in 1991 and has since worked on numerous projects for NS. Mr Crouch has presented evidence before the STB in a recent stand-alone cost ("SAC") proceeding.

Mr. Grappone has 35 years of experience with railroad and transit signal and communications systems including 24 years with the Long Island Rail Road ("LIRR"). In 2001, he founded Grappone Technologies and has since undertaken projects for several rail entities including the LIRR and New York City Transit Mr. Grappone has presented evidence on signals and communications costs before the STB in several recent SAC proceedings

Mr Stedman has over 31 years of experience in the railroad consulting business and was instrumental in identifying the ICC Engineering Reports as a useful source of information on original railroad construction and adapting this information for use in stand-alone cost proceedings before the ICC and the STB Mr. Stedman has presented evidence on roadbed preparation costs before the ICC and the STB in virtually every stand-alone cost proceeding since 1994.

DuPont's road property investment expert witnesses have a vast wealth of knowledge and experience in developing the costs associated with a stand-alone railroad.

1. Land

In Opening, DuPont's land acquisition costs for the DRR were developed by Richard R. Harps, MAI, CRE, John C. Pinto CRE, Elizabeth W. Vandermause, MAI, Daniel C. Vandermause and their project team Mr. Harps has over 35 years of experience as an appraiser and consultant. He holds the Member of Appraisal Institute ("MAI") designation from the Counselors of Real Estate In addition, he was President of the Washington, D C. Association of Realtors in 1985. The team he has put together for this assignment brings an extensive background in real estate appraisal and experience in appraisal of transportation right of way including valuation of rail properties throughout the United States and Canada.

In Opening, DuPont's real estate Team, estimated that the DRR's right-of-way, excluding easements, would cost an unprecedented $3.370.8 million to acquire Mr. Harp's valuation considered all segments of the railroad, particularly the major urban centers. In addition, the Team toured significant portions of the route, and reviewed other data such as aerial maps. He also consulted with various local appraisers. On Reply, NS has raised the land acquisition costs well beyond the bounds of reasonableness. In addition, as explained below, and in detail in the Team's Report attached as Rebuttal Exhibit III-F-2, the way NS reached these new heights is simply untenable and produces an unrealistic result.

The DuPont real estate experts conclude that their original land valuation, presented in DuPont's Opening evidence, is the best representation of the value of the land required for the DuPont SARR However, based on the NS's response, two adjustments are required for the land valuation:

Addition of 16.84 miles, in seven locations.

Modifications and additions to the land required for yards and other supporting facilities[1]

Taking the above two modifications into account, Table III-F-2 below summarizes our valuation of the land required for the DuPont SARR.

Table III-F-2
Land Valuation for DuPont Stand-Alone Railroad

	Item	Total Miles	Total Acres	Estimated Value as of 6/1/09 ($000)
	(1)	(2)	(3)	(4)
1.	Land Valuation for DRR (Opening)	7,276.9	81,682 3	$3,373,900
2.	Additions to DRR (7 Locations)	16 8	190 8	25,200
3	Modifications to Yards/Supporting Facilities	xxx	1,791.0	456,100
4	Total Land Valuation for DRR	7,293 8	83,664.4	3,855,200
5	Easements (Opening)	xxx	xxx	535
6.	Total Including Easement Fees	7,293.8	83,664	$3,855,735

Source DuPont Opening e-workpaper "DuPont SAR Land Valuation – April 24, 2012.pdf" and Rebuttal Exhibit III-F-2.

a. Review of Norfolk Southern's Land Valuation

In support of the proceeding before the Surface Transportation Board, the following base land values[2] were submitted:

$3,052,100,000	DuPont base land valuation
$4,154,519,000	NS appraiser's base land valuation
$1,102,419,000	Difference in base land valuation

[1] Acres in yards were modified in Rebuttal in order to accommodate increased yard sizes as a result of the addition of classification tracks In addition, yard acres were increased to reflect acres for intermodal yards, auto distribution yards and bulk transfer facilities. Acres for these facilities are equal to those relied on by NS in Reply, unless documents provided by NS in discovery show that a specific facility is comprised of fewer acres. For example, in Reply, NS included 274 3 acres for the Voltz Auto facility based on the actual acres required for its auto facility in Shelbyville, KY However, in discovery, NS provided a diagram of the Voltz facility. From this diagram it was calculated that the Voltz facility requires 188.0 acres The Rebuttal yard acres are shown in e-workpaper "DRR Yard Acreage Requirements.xlsx" and the calculation of acres from discovery documents are included in Rebuttal e-workpaper "DRR Yard Diagram Acres pdf."

[2] Base land value equals the fee simple value of the land underlying the DuPont SARR, before consideration of other factors, such as land needed for communications facilities, land needed for yards and other support facilities, and adjustments to land value for partially-owned lines and land easements/agreements.

The NS Appraiser produced a total base land valuation that was 36 percent greater than DuPont's base land valuation.

The conclusion of our review of the NS Appraiser's land valuation is that the NS Appraiser developed and applied a purely mathematical and highly mechanized approach that did not apply basic appraisal principles.

An analysis of all the land sales used by the NS Appraiser in six SARR states found that the NS Appraiser's average land values frequently *overstated* the actual sales prices in their data sets, thus overstating the base land value The degree of overstatement is significant – 75 percent of the time the sales prices were overstated by more than 25 percent, and 34 percent of the time, the overstatement more than doubled the actual sales prices. This was not the only significant error by the NS Appraiser Other errors committed by the NS Appraisers also contributed to unsupported land value conclusions.

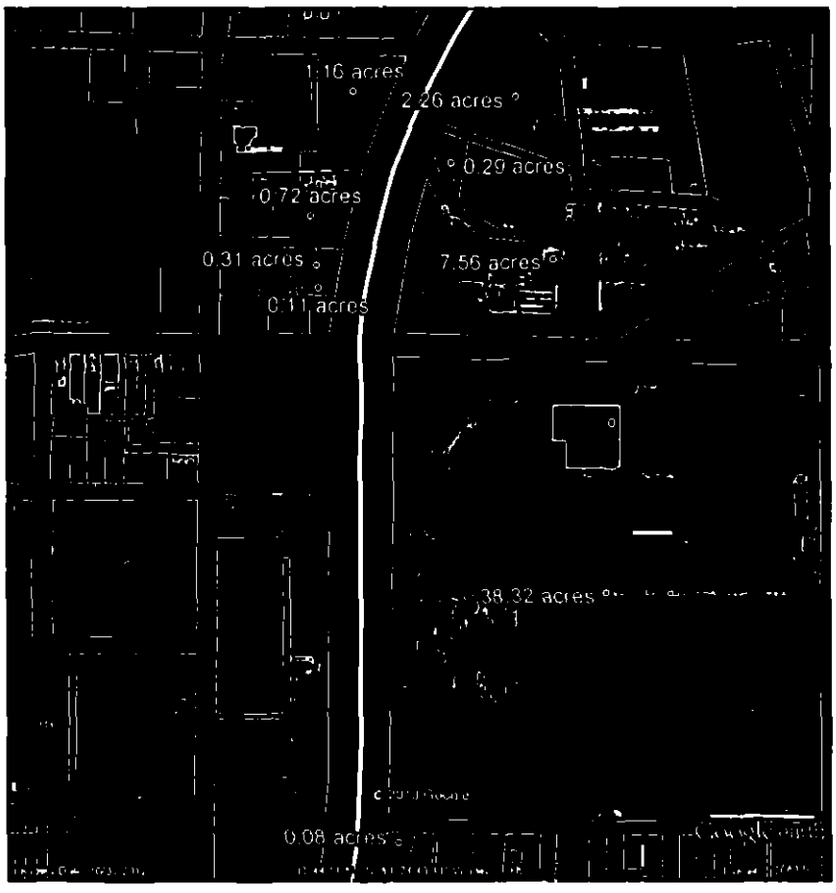
First, the NS Appraiser failed to consider the quantity and quality of the sales data available. Second, the NS Appraiser failed to consider basic valuation tenets. Third, the NS Appraiser then applied analysis techniques that resulted in land valuations that were unsupported by the sales. Thus, the conclusions reached by the NS Appraiser are necessarily unreliable and unsupported

Even though the NS Appraiser describes the process undertaken in their analysis as a sophisticated mass appraisal methodology, these supposedly sophisticated data techniques did not absolve them of the responsibility to be sure that the data was being handled in a manner that is consistent with the appraisal problem being addressed. By ignoring basic characteristics of land sales, characteristics that every appraiser should consider, the NS Appraiser failed in their responsibility to produce value conclusions that are supported and not misleading. The main

observations and conclusions of our review of the NS appraiser's land valuation for the DuPont SARR include the following.

> The NS Appraiser compiled sales data sets grouped by zoning/use and sorted by price per square foot only. The data sets included sales from several years, parcels of various sizes, urban and rural locations sometimes mixed together and all sales were only sorted by price per square foot. By creating such non-homogeneous data sets, the NS Appraiser failed to analyze and account for changes in market conditions / market trends, differences in average prices attributed to land sizes, and the differences attributed to locations (urban and rural land analyzed together)

The NS Appraiser failed to account for differences in parcel size (a key determinant of land value) in the comparable sales. For example, note this portion of the DuPont SARR in the Atlanta, GA area:

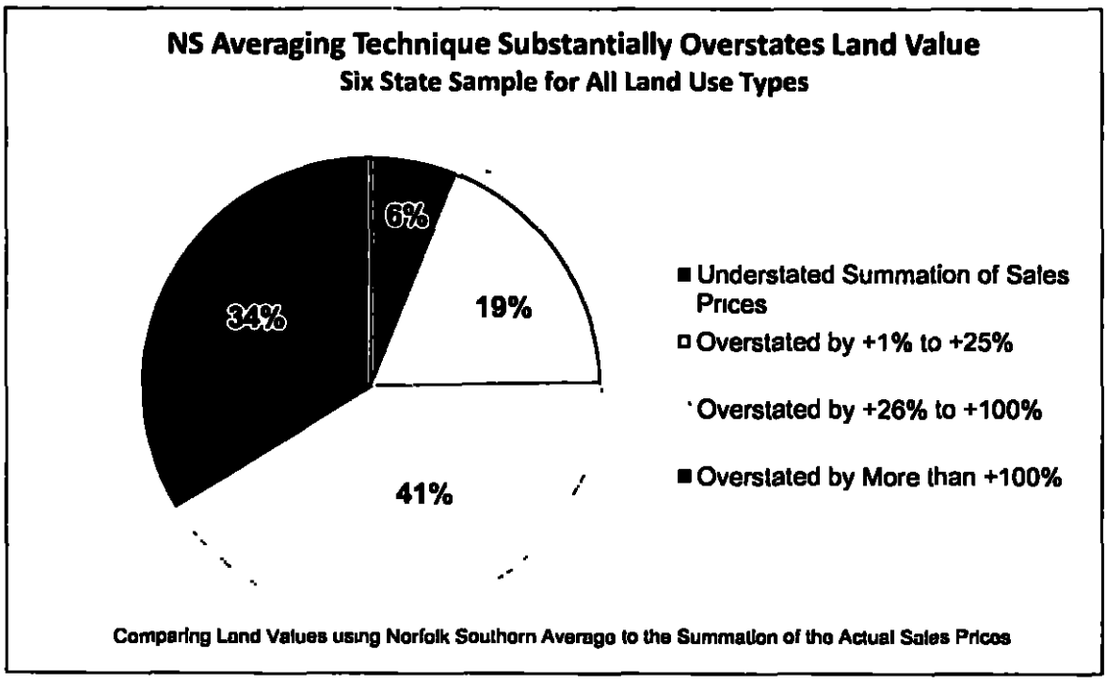


Imagine that the land purchases by the SARR would consist only of the properties on the right side of the SARR (Orange line). Land would be purchased from five properties of the following sizes:

0.08	acres
0 29	acres
2 26	acres
7 56	acres
38.32	acres

It is clear from the above photo that the most land for the SARR will be purchased from the 38 32-acre parcel and that the least amount of land will be purchased from the 0.08 acre parcel. The NS Appraiser gives *equal weight* to each parcel in developing the average price per acre, causing the smaller parcels to be over-represented in the average. Since generally speaking, the unit price for land rises as the parcel size declines, the NS Appraiser overstated the average land value by giving equal weight to each land sale, regardless of the size of the parcel being purchased. The NS Appraiser utilized an inappropriate averaging technique, leading to inflated value conclusions

To measure the extent of the error caused by the inappropriate averaging technique used by the NS Appraiser, the DuPont real estate Team looked at six sample states (Alabama, Ohio, Pennsylvania, New York, North Carolina and Georgia). For each land use type (industrial, residential, etc.) and for each jurisdiction (county) in these six states, we compared the average price per acre produced by the NS Appraiser to the summation of the actual sales prices used by the NS Appraiser:



The team tested 364 sales data sets, representing all the land sales used by the NS Appraiser in these six states. For each set of sales, we compared the summation of the actual sales prices to the summation of the prices computed using the NS Appraiser's average land price. The results show the impact of grouping a non-homogeneous set of sales into one data set and giving all sales equal weight leading to conclusions that could not produce a meaningful value.

In 94% of the cases, the use of the NS Appraiser's average land value overstated the summation of the actual sales prices. The degree of overstatement is significant – 75 percent of the time, sales prices were overstated by more than 25 percent, and 34 percent of the time, the overstatement more than doubled the actual sales prices.

The inflated value conclusions developed by the NS Appraiser were also contrary to and inconsistent with the "no barriers to entry" requirement in SAC analyses.

PUBLIC VERSION

At this point, having failed to properly account for differences in the sales data, the NS Appraiser then utilized the non-homogeneous sales data to produce their land valuations that were based solely on the unit price. This approach is flawed for the following reasons:

- The only categorization or "stratification" of the sales data by the NS Appraiser was by unit price. Without accounting for the differences in parcel size or any other factors that could impact the unit price, the use of this single measure (unit price) as a surrogate for all other valuation factors, does not and could not produce credible value conclusions.
- When eliminating sales as "outliers", only the highest unit price sales were excluded. Having committed the error of using an improper averaging technique (that overstated the resulting land value conclusions), the NS Appraiser then committed another error of eliminating sales only from the high end of the spectrum, making it impossible to judge the reasonableness of the resulting value conclusions.
- By routinely applying route-average or state-average land values to rural jurisdictions, the NS Appraiser applied urban-area land values to rural areas.
- The NS Appraiser produced values that were not supported by actual sales in proximity to DuPont SARR

For example, the exhibit below illustrates a portion of the DuPont SARR in the Pittsburgh, PA area:

For this portion of the DuPont SARR, the NS Appraiser developed the land values shown in WHITE, ranging from $100.00 to $500.00 per square foot of land. However, note that the **comparable sales** used by the NS Appraiser (shown in yellow on the above exhibit) **do not exceed $20.04 per square foot**, and land sales excluded by the NS Appraisers (shown in RED above) do not exceed $89.28 per square foot.

> The land valuations produced by the NS Appraiser did not always stay within the bounds of the sales prices.
>
> The NS Appraiser created average land values by excluding a variable percentage of higher-priced sales from their calculations, with no market rationale. Having committed the error of using an improper averaging technique (that overstated the resulting land value conclusions), the NS Appraiser then committed another error of eliminating sales only from the high end of the spectrum, making it impossible to judge the reasonableness of the resulting value conclusions
>
> The NS Appraiser utilized the same sales data to produce multiple value conclusions, simply by excluding a differing number of high unit price sales, with no market rationale for the sales excluded, other than price

In conclusion, the NS Appraiser failed to consider recognized and accepted appraisal techniques to categorize and analyze land sales. The result was a non-homogeneous set of sales that was thereafter manipulated by the NS Appraiser solely on the unit price, taking no relevant variables into account.

The value conclusions of the NS Appraiser were unsupported by the data, and therefore the value conclusions cannot be relied upon as a reasonable estimate of land value for the land required by the DuPont SARR

b. Rebuttal Of NS Review Of DuPont Appraisal: Summary

The NS Appraiser submitted an appraisal review of DuPont's valuation of the land underlying the DuPont SARR in Part III-F-1 of NS's Reply evidence Review of NS's land Reply shows that NS's criticisms are incorrect and meritless. Information support this

conclusion is well documented in Rebuttal Exhibit III-F-2 included with this evidence The issues addressed include:

> Date of Value/Partially-Owned Rights-of-way/Land Use Agreements and Easements: As fully discussed in Part III-G, DuPont's date of valuation is consistent with Board precedent
>
> Classification of Land Uses: The NS Appraiser contends that the land use definition in our appraisal was not sufficiently detailed. In fact, the land uses designated in DuPont's appraisal properly reflect the underlying land value for that portion of the DuPont SARR.
>
> Inspection of Subject Property: The NS Appraiser, in his review, contends that DuPont's physical inspections of the subject property were not extensive enough, and that we relied too much on computer-based tools for our inspections Rebuttal Exhibit III-F-2 discusses DuPont's extensive pre-planning and detailed on-site physical inspections of the DuPont SARR, and also discusses the powerful computer-based tools (Google Earth and BING) used in our appraisal process.
>
> Selection of Comparable Sales and Verification Process and Taking Proper Steps to Analyze Comparable Sales The NS Appraiser questions several aspects of DuPont's land sales research and land valuation process that were easily refuted in the documentation and data supplied along with DuPont's real estate appraisal. For example DuPont's real estate Appraiser Team.
>
> 1. Did not use "unknown" land use type nor were improved sales used as the basis of some of our values.
>
> 2. Did not use property assessment data as the basis for land value
>
> 3 Did not have an overreliance on "anecdotal" sources of secondary information, such as assessors, brokers and appraisers. As is customary in most appraisals, the Team used these secondary sources to support the actual sales data that was the basis of its appraisal.

The NS Appraiser's claims and false assertions that DuPont's analysis was not documented sufficiently in our work papers must be disregarded.

> Technique Used to Average Data The NS Appraiser contrasts the averaging technique used by DuPont's Appraisal Team (a weighted average approach) with the averaging technique used in the NS Appraiser's valuation report Rebuttal Exhibit III-F-2 clearly shows that the weighted average technique is a superior technique to use in valuing land for the SARR, because it produces more reliable conclusions.

It must be mentioned here that the NS Appraiser attempts to characterize the averaging technique used by DuPont's Team as one that the appraisal industry in general, and the Appraisal Institute in particular, have rejected. NS Appraiser's review document and testimony is misleading, because it appears to confer the approval of the Appraisal Institute on the averaging technique used in their appraisal, as well as the specific rejection by the Appraisal Institute of the averaging technique utilized in our appraisal *This is a false and willfully misleading claim by the NS Appraiser, and should be disregarded*

c. Rebuttal of NS Appraiser's Review: Summary

DuPont's appraisal followed recognized and established appraisal techniques that were appropriate. The process followed in developing the land valuation was not a mechanical process that was followed lockstep, such as that used by the NS Appraisers. Instead, the quantity and quality of the sales data available dictated the process used in developing the land valuation, to ensure the most accurate, reasonable and supportable values that were consistent with the actual sales in the market.

NS Appraiser's failed to consider recognized appraisal techniques and did not produce a valuation that was consistent, supportable, and reasonable based on market data. Having committed the error of using an improper averaging technique (that overstated the resulting land value conclusions), the NS Appraiser then committed another error of eliminating sales only from the high end of the spectrum, making it impossible to judge the reasonableness of the resulting value conclusions The NS Appraiser's conclusions are unrealistic and should be rejected

As discussed in Part III-G, DuPont's application of the July 1, 2009 valuation date is consistent with Board practice; its valuation segment sizes are consistent with appraisal principles, and its market adjustment factor was necessary to arrive at an accurate market value

figure in light of the real estate market's unusual state Thus, DuPont continues to rely on its Opening land costs, as adjusted for the additional route miles and yard acres that have been added on Rebuttal.

d. Easements

DuPont disagrees with NS's claim that easement prices for the DRR should be increased by inflation, or that, alternatively, current land (fee simple) prices should be used in place of easement prices NS's claims are incorrect for two reasons First, easements themselves are typically acquired by payment of a one-time fee, and easement agreements do not provide for inflation of that fee. As the DRR is stepping into NS's shoes with regard to these agreements it is entitled to the cost and benefit of these agreements, including the fee actually paid for the perpetual easement.[3] To do otherwise would be a barrier to entry.[4]

Second, an examination of possible ways to reflect the change in easement prices over time demonstrates that various land value indexes were inappropriate for measurement of the change in easement values. DuPont reviewed NS's and its predecessor companies' actual experience with the easements at issue. Because these easements were acquired by NS between 1836 and2007, DuPont reviewed the actual amounts NS paid for easements over this 171-year period. The average price paid for the easements varied between $0.00 and $52,500 per acre. NS paid $0.00 per acre or $1.00 per acre several dozens of times, (including as recently as 2006) during the 171 years Further the highest amount per acre, $52,500 per acre was paid in1881.[5] The prices paid clearly demonstrate that there is no specific trend in the price of the

[3] *See TMPA*, p. 697.

[4] Furthermore, the Board "does not require a stand-alone railroad to acquire greater title to property than the incumbent railroad " *See TMPA*, p 697. If the Board follows NS's suggestion and values the easement as a fee interest, it will have essentially required the DRR to acquire a greater interest in land than NS's interest.

[5] *See* DuPont Rebuttal e-workpaper "Average Easement Fees xlsx" which shows the minimum, average and maximum price per acre paid for easements each year by state.

easements during this period. For these reasons, DuPont continues to rely on its Opening Evidence regarding the value of easements required for the DRR's right-of-way

2. Roadbed Preparation

In Opening, DuPont relied on the Trestle Hollow Project for several of its construction unit costs, most notably the earthwork unit costs. At the beginning of Roadbed Preparation in Reply, NS devotes fourteen pages to attacking DuPont's: 1) failure to use unit costs from R.S. Means ("Means Handbook"); 2) use of the Trestle Hollow Project; and 3) failure to rely on AFE information provided by NS in discovery[6] DuPont addresses each of NS's claims below and demonstrates that DuPont's Opening is justified and feasible.

NS claims "[t]he Board has long accepted R.S. Means as the appropriate, authoritative source for earthwork costs."[7] Means Handbook unit costs have been used in most prior SAC proceedings because the defendant railroads failed to provide any representative earthwork cost data from actual projects. *WFA/Basin* was the first proceeding where meaningful earthwork cost data for actual projects was provided by the defendant railroad in discovery That trend was continued in *AEPCO*. As discussed later in this section, NS broke this trend which is why DuPont relied, in part, on the Trestle Hollow Project.

The Means Handbook is one of many ways to project costs for a planned rail project. Crouch Engineering, the firm founded by Crouch Engineering president and DuPont's expert engineering witness Harvey Crouch, usually uses a combination of its historical tabulated prices and those developed by various state Departments of Transportation ("DOT"). For example, when Crouch Engineering developed its excavation unit cost estimate for the Trestle Hollow Project, it assumed that the cost per cubic yard ("CY") would be $1.75 based in part on the

[6] *See* NS Reply, pp. III-F-38-51
[7] *Id*, p. III-F-38

Tennessee DOT average of $1.50 per CY in 2005. Crouch Engineering added $0.25 per CY over the Tennessee DOT figure to account for the increased difficulty of the project. In the end, two contractors, including the successful bidder, both provided bids where the cost per CY for excavation was $1.65

Means Handbook unit costs do not recognize the economies of scale of large railroad projects such as the DRR which makes costs derived from direct experience (when available) more useful. In particular, the Means Handbook states that "[t]he size, scope of work, and type of construction project will have a significant impact on cost. Economies of scale can reduce costs for large projects "[8] Clearly, the DRR's construction would be classified as a large project resulting in reduced unit costs (*i e* , lower than those shown in the Means Handbook). DuPont's reliance on unit costs derived from other projects (such as the Trestle Hollow Project), vendor quotes or discovery documents is equally as valid as (if not preferable to) reliance on Means Handbook unit costs. Mr Crouch's direct experience with railroad projects supports DuPont's contention that actual project unit costs are lower than those found in the Means Handbook. In Rebuttal, DuPont continues to use unit costs derived from the actual Trestle Hollow Project and Means Handbook unit costs where direct project costs are not available.

NS claims that *WFA/Basin* and *AEPCO* do not support DuPont's use of the Trestle Hollow Project because, unlike those cases, the Trestle Hollow Project was not conducted by NS, is not on the NS system and was tiny in size and scope[9] But *WFA/Basin* and *AEPCO* support the concept that actual earthwork costs bid by contractors for actual railroad projects are lower than average costs from the Means Handbook Therefore, current real-world costs, when available, are preferred over the Means Handbook.

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[8] *See* DuPont Rebuttal e-workpaper "Means Handbook project size pdf."
[9] *See* NS Reply, pp. III-F-39-41.

While NS may not have constructed the Trestle Hollow Project, it was overseen by a former NS employee, Mr. Crouch, who was a Track Supervisor and Project Engineer for NS and has also designed over 30 capital projects for NS.[10] While the Trestle Hollow Project may not be on the NS system, it is located in the heart of the territory traversed by the DRR. Furthermore, NS certainly employs contractors to do earthwork on many projects and NS simply oversees the work, just as Crouch Engineering did for the South Central Tennessee Railroad. NS's position that the Trestle Hollow Project was not on the NS system is irrelevant to whether those costs are an accurate representation of the costs to construct the DRR

NS's claim that the Trestle Hollow Project is "tiny in size and scope in comparison to the DRR"[11] also carries no weight. Any recent railroad construction project, including all of the other projects identified by NS in its Reply, would be "tiny in size and scope" when compared to the 7,900-mile DRR [12] Furthermore, this NS argument also undermines NS's use of the Means Handbook, which as noted above, does not reflect the economies of scope or scale of a project the size of the DRR.

NS does not accept DuPont's use of costs from the Trestle Hollow Project because of the obvious reason – the costs are too low to suit NS's object of artificially inflating the construction costs of the DRR.

To support its much higher Means Handbook unit costs, NS attempts to discredit the Trestle Hollow Project by suggesting that the project was a "small, isolated, and atypical short-line construction project."[13] NS's position is that, because the Trestle Hollow Project is a short-line project, it is therefore substandard or not relevant to what the DRR is building or is atypical

[10] *See* DuPont Opening, p IV-48.
[11] *See* NS Reply, p. III-F-39
[12] This would also hold true for all of the projects used by R. S Means to develop the unit costs in the Means Handbook.
[13] *See* NS Reply, p III-F-40.

of the unit costs DuPont could expect if it bid out this project. Building a railroad, with complications such as those on the Trestle Hollow Project, is still building a railroad. The Trestle Hollow Project simply proves, as the Walker to Shawnee (Wyoming) project used in *WFA/Basin* proved, that the SARR can expect to beat Means Handbook unit costs by using real-world project costs.

NS includes a one-page discussion of a site visit to the Trestle Hollow Project location made by NS witness Bagley where he characterizes the Trestle Hollow Project as a "simple construction project."[14] Mr. Bagley visited the site after the completion of the project. DuPont engineering witness Crouch was involved with the Trestle Hollow Project from beginning to end and his opinions, expressed below, certainly are more insightful than Mr. Bagley's cursory review of a finished project

The Trestle Hollow Project involved constructing a complicated, new alignment for the South Central Tennessee Railroad. The Trestle Hollow Project was constructed in difficult conditions, including steep terrain, with slopes in excess of 2:1, requiring deep cuts and high fills The purpose of the project was to bypass several large timber bridges that had been built at the turn of the 20th century. The alignment was designed to improve the vertical grade and reduce curvature. The curvature was reduced from nine (9) degrees and six (6) degrees to curves with a maximum of four (4) degrees. The original alignment skirted hilly terrain running west from Centerville, TN to Hohenwald, TN. The new alignment was designed and built on an average 2 4 percent grade over the length of the project, which was an improvement over the original maximum slope. The new design was difficult due to the very hilly terrain and the number of ridges and valleys encountered along the proposed alignment In addition, much of the land had not been accessed in decades The resulting design included several tall

[14] *See* NS Reply e-workpaper "South Central Tennessee Railroad-Trestle Hollow Project.pdf"

embankments and a number of deep cuts, all on an average 2.4 percent grade The elevation change from one end of the project to the other was well over 100 vertical feet. The contractor used scrapers, assisted by bulldozers when necessary, and large excavators with trucks to perform the earthwork.[15] Clearing was difficult due to the hilly nature of the land and the size of the trees.

NS claims that the "Mass Excavation" line item that encompassed all grading for the Trestle Hollow Project cannot mean common earthwork as used by DuPont.[16] NS is again incorrect. The "Mass Excavation" designation was not part of the bid documents that were issued for the Trestle Hollow Project The project bid documents used "Unclassified Earth" or "Unclassified Excavation," which meant that any type of material encountered would all be paid on the same basis.[17] In other words, the designation encompassed common earthwork, plus any other materials that might be encountered. "Mass Excavation" was the term the contractor used in responding to the bid. Simply put, DuPont's engineers were conservative in applying the Trestle Hollow Project unit cost only to common earthwork – they could have easily applied it to the loose rock category as well Indeed, the geotechnical reports for the Trestle Hollow Project show that various chert rock classifications were found in the borings,[18] and ultimately were excavated without any increase in the excavation unit cost.

NS next complains that the high concentration of cubic yards of excavation per mile involved in the Trestle Hollow Project would provide economies that are unavailable on the DRR, where the average cubic yards per mile are lower. NS's argument misses the point

[15] *See* the photos included in DuPont's Opening workpapers in the Trestle Hollow pictures subdirectory.
[16] *See* NS Reply, p. III-F-41
[17] *See* DuPont Opening e-workpaper "Trestle Hollow Specifications.pdf," pages 142 and 150
[18] *Id*, p 4 of the Geotechnical Report (page 231 in the pdf file).

While it is true that the concentration of cubic yards was higher in the Trestle Hollow Project than the average on the DRR, the Trestle Hollow Project was complicated Moving high volumes such as those encountered on the Trestle Hollow Project requires careful coordination, particularly the proper staging of culvert and grading work, the ability to move large volumes of material in a short amount of time, and the ability to spoil, or waste, excavated material offsite The Trestle Hollow Project was more difficult than what the DRR would encounter on many of the lines that it is replicating; yet DuPont only applied the Trestle Hollow cost to non-adverse common excavation and increased the cost for adverse territory. Therefore, the application of the unit cost to easier territory is easily justified despite the lower volume per mile, especially when considering that the total cubic yards of common earthwork for the DRR project exceeds 300 million CY (*i.e.*, DuPont can and will realize economies of scale).

NS next tries to call into question the unit costs used by DuPont from the Trestle Hollow Project by identifying a $10 difference in the total costs between the lump sum bid of $2,698,324 provided by K. W. Lankford and included in one workpaper provided by DuPont[19] and the workpaper used by DuPont for the unit costs (referred to by NS as the "Cost Tracker") which shows a total of $2,698,334.[20] NS then tries to smear the Cost Tracker document by suggesting that it was prepared after the fact for litigation purposes [21]

There is nothing to support NS's outrageous and unsupported accusation that DuPont developed something after the fact for litigation Crouch Engineering is the firm that oversaw the Trestle Hollow Project from the beginning of the process through the completion of construction The bidding was conducted on a lump sum basis but the bidders were told that the winning bidder would have to provide an itemized list showing quantities and unit prices so that

[19] *See* DuPont Opening e-workpaper "Trestle Hollow Specifications pdf," p 5.
[20] *See* DuPont Opening e-workpaper "Trestle Hollow Project Cost Sheet pdf"
[21] *See* NS Reply, p. III-F-42

monthly invoices could be submitted and paid The Cost Tracker was provided by K W. Lankford after winning the bid and prior to submitting the first invoice. A review of the first K. W. Lankford invoice submitted for May 2007 shows the unit cost and quantity breakdown.[22] This invoice also shows a project total of $2,698,324 (the same as the lump sum bid) demonstrating that the $10 difference on the Cost Tracker is simply a typo and has no impact on the unit costs used by DuPont.[23]

NS also refers to a couple of inconsistencies between the Trestle Hollow Project contract bid documents[24] and the Cost Tracker in a feeble attempt to undermine the unit costs on which DuPont relied [25] NS's claims are misguided and have no merit.

The Cost Tracker identifies 787,223 units of mass excavation NS's issue with mass excavation has already been addressed. NS notes that the units are labeled "EA" and not "CY" and tries to read something untoward into this distinction In reality, the "EA" is just a typographical error and should be "CY "[26]

Next, NS comments that the Cost Tracker shows 787,223 units of excavation but the notes to the bidders meeting state "Yardage 630,000"[27] and tries to make something out of this difference NS is once again misguided in its effort to discredit the Trestle Hollow Project. The 630,000 CY was a preliminary estimate of the quantities of earthwork According to Mr. Crouch, this estimated amount was subsequently increased to 696,000 CY. Furthermore, the construction plans for the Trestle Hollow Project were provided to the contractors and they were

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[22] *See* DuPont Rebuttal e-workpaper "Trestle Hollow Project Invoice 001 Approval May 2007 pdf."
[23] The $10 difference is in the total cost figures shown for Class B Rip Rap Compare DuPont Opening e-workpaper "Trestle Hollow Project Cost Sheet pdf" with DuPont Rebuttal e-workpaper "Trestle Hollow Project Invoice 001 Approval May 2007 pdf"
[24] *See* DuPont Opening e-workpaper "Trestle Hollow Specifications pdf"
[25] *See* NS Reply, p. III-F-42
[26] *See* DuPont Rebuttal e-workpaper "Trestle Hollow Project Invoice 001 Approval May 2007 pdf."
[27] *See* DuPont Opening e-workpaper "Trestle Hollow Specifications pdf," page 279.

free to develop their own quantity estimate. The 787,223 CY is the estimate used by K. W. Lankford.

Finally, NS claims that DuPont refused to provide any additional documentation or explanation regarding the Trestle Hollow Project when requested by NS. DuPont's response to NS clearly reveals that NS's characterization is not accurate.[28] NS's workpaper request contained three separate requests. DuPont responded to the first request (a complete set of Trestle Hollow Project specifications), explained its position that the other two requests were more like discovery requests than workpaper requests and asked that NS review the complete document provided, to determine its responsiveness to the other two requests, prior to DuPont incurring the time and expense to gather the additional material requested by NS DuPont invited NS to renew its other two requests if the document provided by DuPont did not address all of NS's concerns.[29] NS never made a follow-up request.

NS next claims that the grading contractor on the Trestle Hollow Project had some sort of advantage with a wider right-of-way than the DRR. NS refers to a right-of-way width of 187 feet based on 30 acres cleared and some contractor notes referred to 600 feet of clearance before encroaching on adjacent property lines.[30] Again, NS's claim has no merit.

Thirty acres were cleared in order to allow for the tall fills and deep cuts in a steep-sloped area, not to increase the right-of-way width Even so, the right-of-way width does not necessarily translate into clear space for equipment to maneuver due to the surrounding topography. Mr. Crouch recalls that there were areas where turning equipment around was difficult but the project was not hindered by this limitation Furthermore, the note referring to 600 feet of clearance before encroaching on private property is just a note; it is not a definition of

[28] *See* NS Reply e-workpaper "Email to DuPont Re Trestle Hollow Project.pdf"
[29] *Id.*
[30] *See* NS Reply, p III-F-43.

right-of-way width for purposes of maneuvering equipment None of the equipment used in the Trestle Hollow Project would have difficulty operating within the right-of-way widths of the DRR.

NS next refers to a cryptic note from the contractor's meeting and concludes that the contractor placed excavated spoils materials (waste) along the right-of-way.[31] NS's conclusion is incorrect. Mr. Crouch recalls that the contractor had to contract with adjacent landowners for a spoils (waste) area and no excess excavation was placed on the railroad right-of-way.

NS then criticizes DuPont's use of the Trestle Hollow Project by referring to a soil analysis that NS conducted in Reply.[32] As discussed later in the "Subgrade Preparation" section of this Rebuttal, DuPont demonstrates that NS's so-called soil analysis is unreliable and, as a result, NS's criticisms have no merit.

Having exhausted its attack on the Trestle Hollow Project, NS attacks DuPont for not relying on Authorizations for Expenditure ("AFEs") provided by NS in discovery. NS begins by stating that it made a list of 775 separate AFEs available for DuPont to review. Sixty-eight (68) of the AFEs contained costs for "grading" activities and DuPont only requested ten (10) AFEs [33] NS's criticism has no merit.

NS has told only part of the AFE story. AFEs were offered to DuPont in response to several discovery requests, not just grading costs. In response to Request for Production ("RFP") Nos 74, 125, 126, 130 and 131, NS stated that AFEs would be made available to DuPont to obtain the requested information. During the discovery process, NS later added RFP Nos. 121

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[31] *See* NS Reply, p III-F-43, and note 39, where NS refers to DuPont Opening e-workpaper "Trestle Hollow Specifications pdf," p. 279. NS is referring to the following comment "100,000-rest spoil-spoil on slopes limited (extend) spoil areas up to contractor (were to spoil 200,000 @ Duck River not available)."

[32] *See* NS Reply, pp. III-F-43-44.

[33] *Id.* p. III-F-45

and 135 to the list of requests for which DuPont could review AFEs. Contrary to NS's inference, the AFEs were not produced solely for the purpose of obtaining grading cost information

Furthermore, DuPont was limited in the total number of AFEs it could request In response to RFP No. 125, NS stated:

> NS responds that it will produce a list of AFEs. .from which DuPont can select a reasonable number for production or inspection at NS offices.

NS makes it sound as if DuPont could have requested all sixty-eight (68) grading AFEs. This is not true DuPont had to select AFEs for several different cost areas, not just roadbed preparation, and still keep the request to a "reasonable number " DuPont selected 100 of the 775 AFEs, of which ten (10) were related to grading DuPont did not request additional AFEs later as discovery had closed. Having imposed a limit on the number of AFEs that DuPont could request, NS cannot now fault DuPont for not using AFEs that were not selected.

In Reply, NS claims that DuPont dismissed the costs from the AFEs it requested because the projects were too small.[34] NS mischaracterized DuPont's Opening evidence. A review of DuPont's Opening at pages III-F-13-14 reveals that DuPont never referred to these projects as small. Rather, DuPont explained that these projects were {{[redacted]}} with CY quantities ranging from {{[redacted]}} and not remotely akin to new rail line construction like the DRR Furthermore, these quantity and cost estimates were prepared by the {{[redacted]}} and none showed actual bid costs from contractors. In addition, all these projects were for extensions or modifications to existing track meaning that they were performed "under traffic" which increases the cost.[35] DuPont did

[34] *Id*, referring to DuPont Opening at III-F-13.

[35] The DRR will be constructed without interference from existing traffic moving over lines adjacent to its construction.

not rely on the NS-provided AFEs for the development of earthwork costs because they were not representative of the new rail construction required to build the DRR.

NS next includes a table listing eight (8) of the ten (10) AFEs as projects that included costs directly related to excavation and borrow.[36] These are the same AFEs that DuPont reviewed and described in its Opening evidence as discussed above.

NS then claims that DuPont dismissed NS's AFE unit costs because they were higher than the Trestle Hollow Project costs and the Means Handbook costs.[37] This is also untrue DuPont rejected NS's AFE unit costs for all the reasons explained in Opening and did not use the Means Handbook unit costs because, as explained earlier, actual project costs are superior.

NS next launches into a discussion of the Keystone Build-Out Project ("Keystone Project") in Shelocta, PA. NS provided details on this project to DuPont in discovery and infers that this is another actual project from which DuPont could have used unit costs for earthwork.[38]

The earthwork cost of $10.91 per CY at 2009 levels shown for the Keystone Project is unreliable and not applicable to the DRR as a common excavation unit cost for several reasons. First, this unit cost is based on a preliminary estimate by {{[redacted]}}[39] and not actual bids from contractors Second, NS describes the project as being {{[redacted]}}[40] but there is no distribution of the estimated {{[redacted]}} CY of earthwork into the three earthwork excavation types (common, loose rock and solid rock). Finally, this project is located within 15 miles of the DRR line segment between Pittsburgh, PA and Altoona, PA which is classified by both DuPont and NS as adverse territory. The Pittsburgh

[36] *See* NS Reply, p. III-F-46
[37] *Id*, p III-F-47.
[38] *Id*
[39] *See* NS Reply e-workpapers "Keystone (NS-DP-HC-25663 to 25701 pdf," pp. 22-24 and "NS Actual Earthwork Costs.xlsx," tab "Actual Cost data," Line 21
[40] *See* NS Reply e-workpaper "Keystone (NS-DP-HC-25663 to 25701 pdf," p. 19.

to Altoona segment is covered by valuation section PRR-17 1&17.2-PA which has a distribution of earthwork by type of over 41 percent solid rock [41] Clearly this indicates that the $10.91 unit cost is for more than just common earthwork.

For the above reasons, the unit cost from the Keystone Project is not useable for common excavation on the DRR.

NS next puts forth Chart III-F-2 comparing the unit cost for the Trestle Hollow Project used by DuPont for common excavation to the unit costs for NS's AFEs and the Keystone Project which represent all categories of earthwork.[42] NS even admits that this comparison is bogus by stating

> Neither the NS AFEs nor the Keystone documents provide separate unit cost for common, loose rock or solid rock excavation so the cost per cubic yard reflected in Chart III-F-2 are the average cost for all categories of earthwork in each of the representative projects [43]

In Chart III-F-3, NS compares the average cost per CY over all types of earthwork used in DuPont's Opening (a combination of the Trestle Hollow Project cost and Means Handbook unit costs) to the average cost per CY using the Means Handbook for all costs, the NS AFE unit costs and the Keystone Project cost.[44] From this comparison, NS draws the conclusion that DuPont's average earthwork costs are unrealistically low because of the Trestle Hollow Project [45] On the contrary, this chart demonstrates that the DRR is a least-cost most-efficient railroad by showing that the actual costs for a large railroad project are lower than Means Handbook costs and the costs for a few small NS projects that were estimated by NS and not based on actual bids from contractors. Just because the DRR's costs are lower does not make

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[41] *See* DuPont Rebuttal e-workpaper "DRR Rebuttal Grading xlsx," tab "EW Cost," Lines 65-66.
[42] *See* NS Reply, p III-F-48
[43] *Id*
[44] *Id*, p III-F-49
[45] *Id*, p III-F-50.

them incorrect. DuPont demonstrated the feasibility of its unit costs in Opening and reinforces that demonstration in Rebuttal.

NS's final Chart III-F-4 compares DuPont's average unit cost for all types of earthwork to the Means Handbook cost for common earthwork shown in DuPont's Opening workpapers [46] NS claims DuPont "jettisoned" the Means Handbook costs after seeing the result "in an attempt to depress DRR's excavation costs."[47] This is simply not true. As explained in Opening, DuPont included the common earthwork and common earthwork-adverse unit costs calculated using the Means Handbook in order to calculate the adjustment ratio to apply to the Trestle Hollow Project cost to develop common earthwork costs for adverse territory [48]

In summary, DuPont used the Trestle Hollow Project unit cost because it is a supportable, feasible and superior real-world substitute for the Means Handbook costs for common earthwork. DuPont's use of the Trestle Hollow Project unit cost reflects the use of actual earthwork costs from a contractor's bid in the same way that actual costs were substituted for Means Handbook costs in *WPA/Basin* and *AEPCO* As shown in *WPA/Basin*, *AEPCO* and this proceeding, actual bids from contractors are lower than Means Handbook costs. This should be expected as the Means Handbook costs do not include any projects comparable in size to a stand-alone railroad such as the DRR.

NS has also included roadbed preparation costs for the Partially Owned Lines that the DRR operates over using trackage rights. As explained in Part III-F-13, the DRR is not building these lines and does not have to pay any part of their reproduction or acquisition cost. As such, DuPont has excluded roadbed preparation costs for these line segments

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[46] *Id*, p III-F-51.
[47] *Id*, p III-F-50
[48] *See* DuPont Opening, p III-F-15. This is also discussed later in the common earthwork unit cost section

Rebuttal Table III-F-3 below summarizes the differences in the parties' roadbed preparation costs

Table III-F-3
Comparison of Roadbed Preparation Costs
($ in thousands)

Item	DuPont Opening[1/]	NS Reply[2/]	DuPont Rebuttal[3/]
(1)	(2)	(3)	(4)
1. Earthwork			
a Common	$666,288	$2,382,946	$706,918
b. Loose Rock	507,986	690,839	539,461
c Solid Rock	1,265,234	1,977,648	1,322,526
d. Borrow	674,182	742,922	678,569
e Subtotal	$3,113,690	$5,794,355	$3,247,474
2. Clearing & Grubbing	$81,191	$127,954	$84,232
3. Drainage			
a. Lateral Drainage	$49,919	$50,086	$50,086
b. Yard Drainage 4/	0	135,385	0
4 Culverts	131,919	746,813	217,924
5. Retaining Walls	346,129	938,032	377,274
6. Rip Rap	36,908	36,989	36,943
7. Road Surfacing for Detours	524	524	524
8 Relocation of Utilities	147	147	147
9. Topsoil Placement / Seeding	1,439	867	1,440
10. Land for waste quantities	206,860	611,365	320,125
11. Environmental Compliance	177	177	177
12 Subgrade Preparation	0	76,476	0
13 Finish Grading	0	68,592	0
14. Lighting	0	267,146	0
15 Dust Control	0	7,250	0
16. Total	$3,968,903	$8,862,160	$4,336,346

1/ DuPont Opening errata, p III-F-7, Table III-F-4
2/ NS Reply e-workpaper "DRR Open Grading errata NS Reply.xlsx," Tab "Summary"
3/ DuPont Rebuttal e-workpaper "DRR Rebuttal Grading.xlsx" and "Culvert Construction Costs Rebuttal.xlsx "
4/ Costs included by DuPont in building site development costs.

a. Clearing and Grubbing

i. Quantities of Clearing And Grubbing

NS accepted DuPont's methodology for developing clearing and grubbing quantities based on the ICC Engineering Reports.[49] The parties' difference in quantities is attributable to a difference in route miles and track miles. On Rebuttal, DuPont has increased its Opening route and track miles, and, therefore DuPont's Rebuttal clearing and grubbing quantities have increased.[50]

ii. Clearing and Grubbing Unit Costs

On Opening, DuPont utilized a unit cost of $2,000 per acre, indexed to $2,111 (June 1, 2009 cost levels), to both clear and grub based on the Trestle Hollow Project cost. DuPont conservatively applied $2,111 per acre for clearing and grubbing to all of the DRR acres of clearing despite the fact that over 70 percent of the DRR's acres would only require clearing, and not grubbing, which can be done with a brush rake at less than $250 per acre – a point that NS admits.[51] Nevertheless, NS argues against DuPont's use of the Trestle Hollow Project unit cost by suggesting that DuPont has not shown a link between the Trestle Hollow Project clearing and grubbing costs and what has to be cleared and grubbed on the DRR.[52] As noted above, the Trestle Hollow Project is a feasible and valid project to use in determining costs for the DRR. The Trestle Hollow Project included some tricky clearing and grubbing due to the terrain involved, and application of the Trestle Hollow Project clearing and grubbing unit cost to the entire DRR probably overstates the cost versus the overall clearing requirements for the DRR's right-of-way. In particular, the trees on the Trestle Hollow Project were located in part on the

[49] *See* NS Reply, p. III-F-52.
[50] *See* DuPont Rebuttal e-workpaper "DRR Rebuttal Grading xls," tab "Other Items."
[51] *See* NS Reply, p. III-F-54
[52] NS also argues that DuPont has not shown whether the 30 acres cleared reflects the total project acreage or just the part that had to be cleared. If NS is attempting to suggest that there were other unknown or higher unit costs, DuPont's engineers note that no other clearing was needed.

right-of-way, but trees on the hillsides were also removed. As the aerial photos included on Opening show, the trees were located in undisturbed stands [53] Many of these trees had never been clear cut (or not cut in many years) due to their location In other words, NS's complaint is a red herring The Trestle Hollow Project clearing and grubbing cost per acre is more than adequate for the DRR.

Instead of using the Trestle Hollow Project unit cost, NS relied on Means Handbook unit costs. While DuPont included a calculation of clearing and grubbing costs based on the Means Handbook in its Opening workpaper,[54] DuPont did not rely on these calculations because actual project costs, where available and appropriate, are superior to Means Handbook costs

On Reply, NS uses the Means Handbook calculations but makes two adjustments. NS cuts the production rate of the clearing crew in half, thereby doubling the cost per acre, and adds another crew to load and haul away the cleared material.[55] Neither adjustment has any merit.

NS claims that the rate of production for the clearing crew is 8 acres per day. However, NS claims that half of the time, this crew would be stockpiling material and would only be able to clear 4 acres per day. NS has provided no evidence supporting its contention that the 8 acres per day rate is for clearing material only and not moving the material. Clearing means clearing, not cutting down and leaving in place.

In addition, NS has not explained why the cleared organic materials must be hauled away. The DRR is built on a 100-foot right-of-way There is ample room to simply place the materials on the edge of the right-of-way where they can decompose naturally Furthermore, even assuming for the sake of argument that a second crew is needed, which DuPont does not agree with, there is no way for NS to know the volume of material it claims would need to be

[53] *See* DuPont Opening e-workpaper "Aerial Photos #1 pdf."
[54] *See* DuPont Opening e-workpaper "DRR Open Grading errata.xlsx," tab "Other Items "
[55] *See* NS Reply, pp III-F-54-56

moved. In addition, NS presents no evidence as to how much material the added crew could move in a day. NS simply adds the costs for a crew for a day and assumes that it would only be able to handle the material cleared from 4 acres. Without knowing how much material there is to be moved and how much material a crew can move in a day, it is impossible to determine the cost

In any event, NS's adjustments to the Means Handbook unit costs are unnecessary and unsupported Furthermore, these same adjustments have been rejected by the STB [56]

The Trestle Hollow Project unit cost used by DuPont in Opening is feasible and more appropriate for the DRR. DuPont continues to use it on Rebuttal.

b. Earthwork

i. Earthwork Quantities

(1) DRR Line Segments

NS accepts DuPont's methodology for the development of earthwork quantities for the DRR line segments However, NS claims there were a few errors in DuPont's input of the quantities taken from the ICC Engineering Reports [57]

DuPont has reviewed each of NS's claimed input errors. DuPont has accepted some, but not all, of NS's corrections Furthermore, NS did not properly incorporate the corrections For example, where an earthwork quantity needed to be changed for a particular valuation section, NS did not make the change at the input level but rather assigned all of the difference to the DRR This is erroneous The proper correction method is to make the change at the input level so the quantities per mile can be adjusted for modern roadbed width and then applied to the DRR miles assigned to that valuation section If the DRR does not traverse the entire valuation

[56] *See AEPCO*, pp 83-84.

[57] *See* NS Reply, pp. III-F-56-57 and e-workpaper "DRR Open Grading errata NS Reply xlsx," tab "DRR – ICC Quantity Errors." The alleged input errors identified by NS included not only earthwork quantities but other items as well.

section, all of the difference is not applicable to the DRR. DuPont has addressed in detail each of NS's alleged input errors and explained NS's erroneous correction method in its rebuttal workpapers.[58]

DuPont also notes that NS has errors in its calculation of earthwork quantities for several of the ICC Engineering Report valuation sections For some unexplained reason, NS rearranged the order of the valuation sections on many levels of its grading spreadsheet This rearranging created numerous errors in NS's calculation of earthwork quantities. NS's first error is on the calculations level On Opening, DuPont had to adjust the calculation formula of revised earthwork quantities for four valuation sections in order to eliminate negative quantities[59] On Reply, NS rearranged the valuation section order. NS properly moved the adjusted formula for three of the valuation sections,[60] did not move the adjusted formula for one valuation section,[61] and left the adjusted formulas in the same locations which erroneously impacted the calculations of four other valuation sections.[62]

NS's second error is on the earthwork by valuation section level. Two valuation sections had zero earthwork quantities on the ICC Engineering Reports so DuPont ensured that these valuation sections would still have zero earthwork quantities after adjusting for the modern roadbed width.[63] By rearranging the order of the valuation sections, NS erroneously altered the quantities per mile of four valuations sections. For the two valuation sections with zero

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[58] *See* DuPont Rebuttal e-workpaper "DRR Rebuttal Grading.xlsx," tab "Response to NS ICC errors "

[59] *See* DuPont Opening e-workpaper "DRR Open Grading errata xlsx," tab "Calculations," Column (H), spreadsheet lines 54, 67, 97 and 200 (valuation sections CNOTP-1-OH, ERIE-15-NY, NONE-2-LA and WAB-5D-IL).

[60] *See* NS Reply e-workpaper "DRR Open Grading errata NS Reply xlsx," tab "Calculations," Column (H), spreadsheet lines 108, 36 and 142 (valuation sections ERIE-15-NY, NONE-2-LA and WAB-5D-IL).

[61] *Id*, spreadsheet line 167 (valuation section CNOTP-1-OH).

[62] *Id*, spreadsheet lines 54, 67, 97 and 220 (valuation sections CNOTP-1-KY, CPR-8-OH, SR-64C-TN and NW-5-MD).

[63] *See* DuPont Opening e-workpaper "DRR Open Grading errata xlsx," tab "Eng Rep Input," Column (H), Line Nos. 57and 65 (valuation sections KM-1-WV and KM-7-OH) and tab "Earthwork by val sec," Line Nos. 57 and 65

earthwork quantities, NS incorrectly showed quantities. For two other valuation sections, NS incorrectly showed zero quantities [64]

As discussed in Part III-B, the parties disagree on the route and track miles for the DRR All of the difference in route miles and part of the difference in track miles is driven by NS's inclusion of the "Partially Owned Lines," which the DRR is not building.

(2) DRR Yards

NS accepted DuPont's methodology for the development of yard earthwork quantities "[e]xcept in special circumstances "[65] There are two problems with NS's earthwork cubic yard calculations for yards. First, as shown in Parts III-B and III-C, NS greatly overstated the DRR's yard track miles. Second, the "special circumstances" referred to by NS, but not discussed in its text, apply to NS's automobile and intermodal yards. For these yards, NS calculated the excavation quantities for the entire square footage of the facility, instead of just the track feet, leading to a gross overstatement in yard excavation quantities.[66] Yard excavation quantities are for yard track only. Any excavation for non-track areas is included in the building and facility costs. Including non-track area quantities in yard track excavation quantities results in a double-count of excavation quantities. NS's calculations should be rejected.

On Rebuttal, as discussed in Parts III-B and III-C, DuPont has modified its yard track quantities. DuPont's rebuttal yard earthwork quantities are detailed in Rebuttal e-workpaper "DRR Rebuttal Grading xls," tab "Yards."

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[64] *See* NS Reply e-workpaper "DRR Open Grading errata NS Reply.xlsx," tab "Earthwork by val sec." Line Nos. 57, 65, 185 and 193 (valuation sections NYC-231-MI, CG-11-GA, KM-1-WV and KM-7-OH)

[65] *See* NS Reply, pp. III-F-57-58.

[66] *See*, for example, NS Reply e-workpaper "Small Auto Center pdf" NS calculates 42,941 CY of excavation based on 1,159,415 square feet for the entire facility. If NS's 6,778 track feet are used, the grading quantity equals only 6,276 CY, less than 16% of the quantity included by NS. NS performed this same erroneous calculation for all of its automobile and intermodal yards.

(3) Total Earthwork Quantities

As discussed above, and in Parts III-B and III-C, DuPont has included additional route miles, second main and passing siding miles and yard miles on Rebuttal. This results in a small increase over Opening in the earthwork quantities for the DRR. Rebuttal Table III-F-4 below compares the parties' earthwork quantities.

Table III-F-4
DRR Earthwork Quantities by
Type of Material Moved
(Cubic yards in thousands)

	Type of Earth Moved	DuPont Opening[1/]	NS Reply[2/]	DuPont Rebuttal[3/]	NS Reply Over / (Under) DuPont Rebuttal[4/]
	(1)	(2)	(3)	(4)	(5)
1	Common (incl. yards)	373,698	407,471	384,991	22,480
2	Loose Rock	49,245	51,293	50,296	997
3.	Solid Rock	92,078	109,419	93,512	15,907
4.	Borrow	43,245	47,343	43,526	3,817
5.	Total	558,266	615,526	572,325	43,201

1/ DuPont Opening e-workpaper "DRR Open Grading errata.xlsx," tab "EW Cost "
2/ NS Reply e-workpaper "DRR Open Grading errata NS Reply.xlsx," tab "EW Cost "
3/ DuPont Rebuttal e-workpaper "DRR Rebuttal Grading xls," tab "EW Cost "

ii. Earthwork Unit Costs

(1) Common Excavation

As noted previously, DuPont used the Trestle Hollow Project earthwork unit cost to develop its Opening common earthwork costs, which DuPont has shown to be a valid and feasible unit cost to apply to the DRR's construction. NS used the Means Handbook costs for common excavation contained in DuPont's Opening workpapers [67]

As discussed above in the response to NS's attack on the Trestle Hollow Project costs, the Means Handbook costs overstate the common earthwork costs that the DRR would be able to obtain for several reasons. DuPont continues to use its Opening unit cost based on the Trestle Hollow Project

[67] As discussed below in the section on adverse territory excavation costs, DuPont included the Means Handbook unit costs for both common excavation and common excavation – adverse only to develop the ratio used to adjust the Trestle Hollow Project unit cost to reflect work in adverse territory

(2) Common Excavation – Adverse

On Opening, DuPont identified certain portions of the DRR that traversed adverse terrain.[68] On Reply, NS accepted DuPont's adverse line segment designations but added additional line segments.[69] On Rebuttal, DuPont has accepted NS's adverse territory designations.[70]

On Opening, DuPont developed the adverse territory common earthwork unit cost as follows. First, DuPont calculated the ratio between the Means Handbook-based common earthwork unit cost and the Means Handbook-based adverse common earthwork unit cost, which was developed using the adverse equipment package from the Eastern cases. DuPont then applied this ratio to the Trestle Hollow Project common earthwork cost to obtain the increased common earthwork cost for adverse mountainous territory.[71]

NS complains that DuPont's method should be rejected because the Trestle Hollow Project costs are inappropriate for the DRR (a point which DuPont has rebutted, as discussed previously) and because the Trestle Hollow Project does not involve any adverse conditions. As DuPont has noted, there were certain aspects of the Trestle Hollow Project that were considered adverse but DuPont has used the Trestle Hollow Project unit cost as representative of common earthwork costs in non-adverse conditions. NS's criticism misses the point. The whole purpose for creating the ratio of the Means Handbook costs was to increase the Trestle Hollow Project cost so that it would be representative of costs in adverse terrain. The Means Handbook costs used by NS for common and adverse territory have few components in common but the

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[68] *See* DuPont Opening, pp. III-F-12-13

[69] *See* NS Reply, pp. III-F-62-64 and e-workpaper "Adverse Territory Identification Narrative.pdf."

[70] DuPont made one correction to NS's adverse territory designations. NS classified 40% of the Binghamton, NY to Buffalo, NY segment of the DRR as adverse. *See* NS Reply e-workpaper "Adverse Territory Identification Narrative.pdf" at page 4. However, in its calculations, NS used 50%. *See* NS Reply e-workpaper "DRR Open Grading errata NS Reply.xlsx," tab "EW Cost," Line Nos. 72 through 77. DuPont has used 40 percent for these segments in Rebuttal.

[71] *See* DuPont Opening, p. III-F-15

relationship is valid. Multiplying the ratio developed by DuPont times the Means Handbook common unit cost would produce the same unit cost as aggregating the unit costs for the various Means Handbook components. Stated differently, using a ratio to adjust a cost is valid.

In fact, ratios of this kind are commonly used. For example, the parties use location factors (ratios) to adjust Means Handbook unit costs. Ratios are used to allocate the revised earthwork quantities for each valuation section to the different types of earthwork. Ratios are used to increase the clearing and grubbing quantities per mile from the ICC Engineering Reports to reflect the modern roadbed widths of the DRR. Ratios are used by both parties in numerous places in the development of the DRR's construction costs. DuPont's methodology simply recognizes the relationship between adverse and normal conditions established in prior cases.

NS made several adjustments to the Means Handbook unit costs for common earthwork in adverse territory The first adjustment NS made was to increase the distance travelled by the earthwork haulers from ½ mile to 1 mile.[72] NS's stated rationale is that the haul distance for the high-capacity haulers used for excavation of common-adverse, loose rock and solid rock must equal the haul distance implicit in the unit cost for the elevated scrapers used for common excavation. NS has not provided any evidence that the distances implicit in the unit costs used by DuPont are unreasonable. NS has provided no analysis of the original topography There are no distances shown in the ICC Engineering Reports other than Train Overhaul categories which both parties converted to borrow quantities to eliminate the long-haul transportation of earthwork. DuPont developed its unit costs for hauling based on the Means Handbook in the same manner and using the same cost items as used by complainants and defendants and accepted by the STB in past proceedings. NS has raised this distance issue for the first time ever

[72] *See* NS Reply, p. III-F-60.

in a SAC proceeding simply as a way to artificially increase the DRR's earthwork costs. DuPont does not accept NS's hauling distance adjustment.

The next adjustment made by NS was to increase the costs for hauling and spreading material to reflect its alleged swell factors As discussed below in the Swell section, NS's adjustment should be rejected

The third adjustment made by NS was to add finish grading costs. As discussed below in the Fine Grading section, NS's additional cost should not be included.

The final adjustment was to the size of the hauler used to move the material On Opening, DuPont used a 42-CY hauler. NS disputes this and substitutes a 22-CY hauler only for hauling material in adverse conditions After reviewing NS's Reply, DuPont agrees that in some situations, the 42-CY hauler is not practical. However, DuPont does not agree that the 42-CY hauler cannot be used for part of the construction. In fact, NS includes a workpaper that demonstrates that a 42-CY hauler is practical for half of the construction process[73] and, furthermore, NS uses a 50/50 mixture of the 42-CY and 22-CY haulers for its loose rock and solid rock hauling of material.[74] In the common-adverse unit cost discussion, NS states that the 42-CY hauler is totally unsuitable for adverse terrain construction but does not provide any support for its statement. The roadbed width during the different phases of construction shown in NS's workpaper[75] would be the same in adverse territory and DuPont sees no reason why the 50/50 mixture would not also apply to adverse territory.

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[73] *See* NS Reply workpaper "48-52_Hauler_Roadbed Stage of Construction pdf."

[74] Although NS Reply workpaper "48-52_Hauler_Roadbed Stage of Construction.pdf" seems to advocate a 48/52 split, NS's earthwork unit costs reflected a 50/50 split for loose rock and a 45/45 split for solid rock (with 10% in 25-ton dump trucks). *See* NS Reply e-workpaper "DRR Open Grading errata NS Reply xlsx," tabs "Unit Costs" and "Unit Cost Modified "

[75] *See* NS Reply workpaper "48-52_Hauler_Roadbed Stage of Construction pdf "

NS also plays the production capacity card in trying to justify the use of the 22-CY hauler 100% in adverse territory by claiming that the 42-CY hauler is a poor match for the 3-CY excavator.[76] This argument has no merit. NS accepted the use of the 3-CY excavator not only for common-adverse but also for loose rock and solid rock where NS used the 50/50 split between the 42-CY and 22-CY haulers.[77] Even NS does not believe its argument against the 50/50 split in adverse territory.

On Rebuttal, DuPont has modified its hauler costs to reflect a 50/50 mixture of the 42-CY and 22-CY haulers

Based on the above discussion, DuPont continues to use its Opening methodology for calculating the common earthwork unit cost for adverse territory. DuPont's adjustment ratio has increased from 1 24 in Opening to 1 32 on Rebuttal to reflect the one modification to the Means Handbook common-adverse unit costs for the split between the two hauler sizes

(3) Loose Rock Excavation

NS made four modifications to DuPont's Opening loose rock excavation costs NS increased the hauling distance, included the swell additive, added finish grading costs and modified the hauler size to reflect a 50/50 split between 42-CY and 22-CY haulers.[78] As explained above, DuPont does not agree with the increase in the hauling distance. As explained below, DuPont does not agree with the swell additive or the addition of finish grading costs As explained above, DuPont has accepted the split between the two hauler sizes.

On Rebuttal, DuPont has modified its Opening unit costs for loose rock excavation only for the split between the two hauler sizes.

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[76] *See* NS Reply, pp. III-F-66-67

[77] *See* NS Reply e-workpaper "DRR Open Grading errata NS Reply xlsx," tabs "Unit Costs" and "Unit Cost Modified "

[78] *See* NS Reply, pp. III-F-68-70 and e-workpaper "DRR Open Grading errata NS Reply xlsx," tabs "Unit Costs" and "Unit Cost Modified "

(4) Loose Rock Excavation – Adverse

For loose rock excavation in adverse territory, NS made the same four modifications to DuPont's Opening unit cost identified above under loose rock excavation except that NS used the 22-CY hauler 100% of the time instead of the 50/50 split.[79] DuPont's response is the same as above except that, for the reasons discussed above under common excavation in adverse territory, DuPont does not agree with NS on the use of the 22-CY hauler 100 percent of the time.

On Rebuttal, DuPont has modified its Opening unit costs for loose rock excavation in adverse territory only for the 50/50 split between the two hauler sizes.

(5) Solid Rock Excavation

NS made the same adjustments to DuPont's solid rock excavation costs for hauling distance, swell, finish grading and hauler split. DuPont's response is the same as previously stated, i.e., rejecting NS's adjustments save for the 50/50 split between the two hauler sizes. NS complains about DuPont's two types of rock blasting costs but used them in Reply. NS made two other adjustments to reflect what NS characterizes as the handling of boulders.[80]

NS estimates that 20 percent of the solid rock excavation quantities shown on the ICC Engineering Reports for the valuation sections covering the DRR would be boulders.[81] For this 20 percent, NS used the cost to excavate and load boulders and the cost to haul boulders DuPont disagrees with NS's position.

NS provides no details of its estimate that 20 percent of the materials left after blasting are boulders that would require special handling beyond the normal production rates achievable with the 3 CY shovel All that NS has shown is that some large boulders remained after blasting

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[79] *See* NS Reply, p III-F-70 and e-workpaper "DRR Open Grading errata NS Reply.xlsx," tabs "Unit Costs" and "Unit Cost Modified "

[80] *See* NS Reply, pp. III-F-71-73 and e-workpaper "DRR Open Grading errata NS Reply xlsx," tabs "Unit Costs" and "Unit Cost Modified."

[81] *See* NS Reply, p III-F-72 Although NS states 20 percent, it used 10 percent in its workpapers *See* e-workpaper "DRR Open Grading errata NS Reply xlsx," tabs "Unit Costs" and "Unit Cost Modified "

on one highway project in the Western U S unrelated to the DRR [82] NS has provided no details on the blasting procedures used or the desired results. In any event, blasting is not a random exercise. Blasting is planned with a number of end results in mind, including the size of rocks that are desired and the landing zone for the materials, and can be quite precise. Indeed, variations in the desired end result are achieved by placing the charges in different locations, varying the spacing of the charges, and varying the depth of the charges.[83] In addition, as explained in *AEP Texas*, the Means Handbook costs for handling blasted materials assumes that blasting would produce materials small enough to be handled by the three (3) CY shovel that AEP Texas used to "excavate and load blasted rock," which is the same unit cost that DuPont is using.[84] Similar adjustments have been rejected by the STB in past proceedings.[85] On Rebuttal, DuPont does not include NS's costs for moving boulders.

DuPont also notes that NS's unit cost for moving boulders repeats the same flaw that afflicted the railroads' evidence in *AEP Texas* and the prior *AEPCO* proceeding – using the unit cost to "Excavate and Load Boulders." The obvious problem with NS's approach is that it represents a cost to move boulders that have not been blasted. Not surprisingly, it is more expensive to excavate boulders that are in place rather than move rocks that have been blasted. Thus, NS's costs must be rejected

The parties agree that the unit cost for solid rock excavation should be comprised of a mixture of 50 percent solid rock costs and 50 percent loose rock costs.[86]

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[82] DuPont notes that NS's Reply relies on the same photos and scant data that its engineers collected in 2003 for a prior STB proceeding.

[83] *See* Dul'ont Rebuttal e-workpaper "blasting.pdf" (desired fragmentation is obtained by checking the drill pattern, spacing and burden to be blasted).

[84] *See AEP Texas* Rebuttal Narrative (Public Version) filed July 27, 2004, p III-F-56.

[85] *See AEP Texas* at 82 and *AEPCO* at 90

[86] *See* NS Reply, p III-F-72

On Rebuttal, DuPont has modified its Opening unit costs for loose rock excavation only for the split between the two hauler sizes.

(6) Solid Rock Excavation – Adverse

On Reply, NS introduced a new unit cost category of solid rock excavation in adverse areas.[87] In prior STB proceedings, a single solid rock excavation unit cost was developed and averaged with loose rock excavation costs in adverse conditions to arrive at a solid rock excavation cost in adverse territory.

A review of NS's workpapers reveals that the only difference between NS's solid rock excavation cost in normal and adverse conditions is that NS used the 22-CY hauler exclusively in adverse conditions rather than the 50/50 split between the 22-CY and 42-CY hauler.[88] As discussed above, DuPont rejects NS's exclusive use of the 22-CY hauler in adverse territory.

On Rebuttal, DuPont continued the accepted practice of averaging its single solid rock excavation unit cost with loose rock excavation costs in adverse territory in calculating the solid rock excavation unit cost in adverse territory

(7) Embankment/Borrow

NS states that it accepted DuPont's unit cost for borrow However, a review of NS's workpapers reveals that NS added finish grading costs to DuPont's borrow unit cost. As discussed below in the Fine Grading section, NS's additional cost should be rejected. As such, DuPont continues to use its Opening borrow unit cost.

[87] *Id.* p III-F-73.

[88] *See* NS Reply e-workpaper "DRR Open Grading errata NS Reply xlsx," tabs "Unit Costs" and "Unit Cost Modified."

(8) Other Earthwork Quantities and Unit Costs

(a) Stripping

NS adds an additional cost for stripping on the basis that such activity is required for roadbeds built on embankments, and that the Trestle Hollow Project, which included stripping (where necessary) in the earthwork costs, is not applicable DuPont has already addressed the applicability of the Trestle Hollow Project.

NS claims that all roots and vegetation must be removed from embankment areas, or else soft spots will cause the embankment to shift and the ground must be filled and compacted. NS further claims that grubbing does not cover this.

NS's additional cost is unnecessary. NS acts as though the original builders of the lines comprising the DRR had no concept of what was necessary to construct rail lines. Any required vegetation removal, removal of soft spots and areas requiring filling and compaction would no doubt have been addressed. NS has not identified any areas on the DRR where the roadbed has been replaced because these items were not accounted for in the initial construction of the lines comprising the DRR. The ICC Engineering Report clearing and grubbing quantities include all clearing and grubbing necessary to construct the roadbed. This would presumably include all clearing and grubbing necessary prior to building embankments NS has not demonstrated otherwise Likewise, the ICC Engineering Report earthwork quantities include all material moved to construct the roadbed. This would include the removal of unsuitable material to build an embankment NS has not demonstrated otherwise. As both parties assumed that 30 percent of excavation quantities are wasted, and included the land necessary for the placement of waste quantities, any unusable material removed from embankment areas would be included.[89]

[89] Excavation quantities on the ICC Engineering Reports are not labeled as being confined only to cut areas, they are simply the CY of earthwork excavated

NS has ignored Board precedent with regard to stripping. In past proceedings, the Board rejected additional stripping costs because "the top 6 inches of soil would be removed during excavation and because topsoil removal is included in waste costs, there would appear to be no need for a separate charge for stripping To the contrary, including such an additional cost would result in a double count."[90] For the above reasons, NS's additional costs are unwarranted

DuPont also notes that NS's calculations are unreliable for at least two reasons First, NS relies on a fill width calculated in the grading spreadsheet This fill width is skewed because of the methodology that allocates virtually all of the earthwork quantities to main line miles through the assignment of only 1-foot of excavation to yard and other miles. While both parties utilize this methodology, it creates overstatements in earthwork quantities per mile and fill and cut widths based on those quantities, especially for short segments with a large amount of yard track.[91] Both parties accept this anomaly for the calculation of earthwork quantities per mile. However, using the overstated fill and cut widths for other quantity calculations results in an overstatement of those quantities.

Second, the length of borrow (and the resulting calculation of quantities of excavation for stripping) is based on the miles of the valuation section and not the miles of the valuation section built by the DRR.[92] This results in a gross overstatement of quantities.

(b) Undercutting

On Opening, DuPont's engineers did not include a separate cost for undercutting DuPont notes that the Board has repeatedly rejected additional costs for this item.[93] In addition,

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[90] *See PSCo/Xcel*, p 671. *See also AEP Texas*, p 79 and *AEPCO*, p 84-85

[91] *See*, for example, the fill widths for valuation sections NYC-218-IL, NYC-217ABCDE-IL, PFWC-1a-PA, PFWC-1b-PA, PFWC-1c-PA and PFWC-1d-PA shown in NS Reply e-workpaper "DRR Open Grading errata NS Reply.xlsx," tab "Stripping," Column (H)

[92] *See* NS Reply e-workpaper "DRR Open Grading errata NS Reply.xlsx," tab "Stripping," Columns (F) through (M).

[93] *See WFA/Basin*, p 83, *AEP Texas*, p 79; *Duke/NS*, p. 176, *CP&L*, p. 313; *Duke/CSXT*, p. 480

the excavation unit costs utilized by DuPont include excavation of unsuitable materials when necessary at no additional cost.[94]

On Reply, NS claims that the ICC Engineering Reports do not "specify the amount of undercutting" and, therefore, NS had to estimate the amount of undercutting required under embankments on the DRR. NS "superimposed" wetland maps over the DRR route and determined that 155.9 miles of the DRR is within wetlands. NS assumed undercutting of an average of two feet of material in these areas, which NS added to its common excavation quantities. NS then added borrow material to replace the undercut material.[95]

NS's additional undercutting costs should be rejected for several reasons. First, NS provides no evidence that ICC Engineering Report earthwork quantities do not include undercutting quantities. In fact, the ICC Engineering Reports include quantities of "subsidence" which both parties included in their respective earthwork quantities taken off the ICC Engineering Reports.[96] Virtually all of the lines being replicated by the DRR were built decades before the ICC valuations were performed during the 1910s and 1920s, so the subsidence quantities on the ICC Engineering Reports would likely capture all undercutting since the original construction

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[94] *See* Dul'ont Opening e-workpaper "Trestle Hollow Specifications pdf" at 156 ("No additional payment will be made for undercutting Work related to undercut and replacement is considered a standard grading practice to achieve a suitable subgrade and shall be considered as incidental to excavation and fill placement Direct payment for work related to undercut and replacement will not be made.")

[95] *See* NS Reply, pp III-F-79-80.

[96] *See* Dul'ont Rebuttal e-workpaper "Rebuttal foundation excavation and subsidence.xlsx" for an identification of the valuation sections for which the ICC Engineering Reports include quantities of subsidence A review of the grading spreadsheets used by both parties reveals that the subsidence quantities for these certain valuation sections are included in the earthwork quantities taken off the ICC Engineering Reports *See also* Dul'ont Opening e-workpaper "DRR Open Grading errata xlsx," tab "Eng Rep Input" and NS Reply e-workpaper "DRR Open Grading errata NS Reply.xlsx," tab "Eng Rep Input "

Second, NS presents no evidence of instances where the original roadbed construction for any of the lines replicated by the DRR had to be replaced, or the subgrade adjusted, because undercutting was not performed during the original construction

Third, NS notes that the ICC Engineering Reports are based in part on "observations of physical characteristics of topography or structures that were readily observable parts of the roadbed construction effort."[97] This indicates that if the area surrounding an embankment showed signs of unsuitable material and/or warranted grubbing, then the quantities would have been included in the quantities reported on the ICC Engineering Reports. DuPont also notes that the ICC Engineering Reports do not specify the quantity of cubic yards of excavation used as embankment, and, therefore, the number of undercutting cubic yards cannot be distinguished from this material – but since those cubic yards are rolled into the quantities, adding undercutting costs would result in a double count. In addition, both parties assumed that 30% of the excavation quantities would be wasted (*i e*, unsuitable materials) Thus, the undercutting quantities estimated by NS are already accounted for in the waste quantities.

Finally, adding borrow is absurd. Undercutting a small amount of material should not require the trucking in of borrow. Suitable replacement materials can be derived from the excavation occurring on-site

NS's undercutting quantities are also unsupported NS has provided no evidence supporting its 2-foot undercutting depth. Furthermore, NS's identification of the miles it claims require undercutting is totally unsupported. NS refers to wetlands maps that it overlaid over the DRR route to identify areas requiring undercutting[98] These maps actually consist of one map

[97] *See* NS Reply, p. III-F-79.
[98] *Id*, p. III-F-80.

which shows the entire 8,100-mile DRR system on a single page.[99] As part of the process to develop its estimate of the undercutting quantities, NS identifies the miles of the segments of the DRR where undercutting is allegedly required. This identification consists of milepost-specific segments of the DRR, many of which are very short. These mileposts are range-valued with no support.[100] Whatever magic NS employed to translate the one page map of the DRR to very short milepost-specific segments of the DRR was not included in its workpapers.

In light of the above, DuPont has not included any additional costs for undercutting.

(c) Over-Excavation

On Reply, NS added costs for "over-excavation," which it claims is necessary in solid rock cuts. In particular, NS argues that 12 inches of over-excavation must occur and then be replaced with compacted fill.[101] NS apparently assumes that such excavation, if necessary, was not done when the lines were originally constructed. NS's additive is unnecessary

NS has provided no evidence that the solid rock quantities on the ICC Engineering Reports do not include "over-excavation" where it may have been necessary. Furthermore, NS has provided no evidence of instances where the original roadbed construction for any of the DRR's rail lines had to be replaced because over-excavation was not performed during the original construction

Finally, DuPont notes that NS's quantities are grossly overstated. Like one of the errors identified in NS's stripping quantity calculations, the length used to calculate the quantities of over-excavation is based on the miles of the valuation section and not the miles of the valuation section built by the DRR.[102] This results in a significant overstatement of quantities.

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[99] *See* NS Reply e-workpaper "NS Reply – Undercutting Unsuitable Soil – Wetland Exhibit - Map.pdf
[100] *See* NS Reply e-workpaper "NS_Undercutting_Response xls," tab "WETLAND LOCATIONS."
[101] *See* NS Reply, p. III-F-81
[102] *See* NS Reply e-workpaper "DRR Open Grading errata NS Reply xlsx," tab "Over Ex," Column (F).

(d) Fine Grading

On Opening, DuPont's Trestle Hollow Project earthwork unit cost already accounted for fine grading at no additional cost. NS argues that the Means Handbook unit costs that NS relies on do not include fine grading activities, and NS has added these costs NS's additional costs are without merit.

The Trestle Hollow Project unit cost already accounts for this activity, and since that unit cost is valid and feasible, NS's additive is unnecessary. NS claims that it is not clear that final grading is included in the Trestle Hollow Project's lump sum bid price for grading.[103] Had NS read the project specifications included in DuPont's Opening workpapers, it would have been clear that final grading was included in the lump sum bid price.[104] In addition, Mr. Crouch notes that, in his experience, a motor grader is often not needed to achieve a finished grade.

The Board has rejected this additive in the past in at least four cases.[105] NS attempts to justify its inclusion based on STB decisions in two cases, *Otter Tail* and *Xcel*, where the Board included additional costs for fine grading in part because the Means Handbook lists a separate cost for fine grading.[106] The mere fact that the Means Handbook lists a separate cost for an item is not a demonstration that it is applicable to the DRR Furthermore, as shown above, fine grading is included in the earthwork costs used by DuPont

Finally, DuPont notes that NS's calculation of the $0 11 per CY additive that NS includes with all of its earthwork unit costs is based on erroneous calculations NS's finish grading quantities are grossly overstated First, NS's calculations suffer from one of the errors identified in NS's stripping quantity calculations, i.e., the length used to calculate the quantities of finish

[103] *See* NS Reply, p. III-F-83
[104] *See* DuPont Opening e-workpaper "Trestle Hollow Specifications pdf," page 164, Sections 3 5 15 and 3.5.16.
[105] *See AEP Texas*, pp 82-83; *Duke/NS*, p. 176; *Duke/CSXT*, p. 480, *CP&L*, pp. 313-314.
[106] *See* NS Reply, pp III-F-81-82

grading is based on the miles of the valuation section and not the miles of the valuation section built by the DRR.[107]

Second, NS's calculations rely on a fill height calculated in the grading spreadsheet. This fill height is skewed because of the methodology that allocates virtually all of the earthwork quantities to main line miles through the assignment of only 1-foot of excavation to yard and other miles While both parties utilize this methodology, it creates overstatements in earthwork quantities per mile and fill heights based on those quantities, especially for short segments with a large amount of yard track.[108] Both of these errors combined result in a significant overstatement in finish grading quantities

Based on the above, DuPont has not added any additional costs for fine grading.

(e) Swell

NS made an adjustment to the earthwork unit costs based on the Means Handbook that has only recently been presented in a SAC proceeding, despite the use of Means Handbook earthwork unit costs in some capacity in virtually every SAC proceeding. NS modified the Means Handbook earthwork unit costs to account for the different volumes of material that must be handled depending on whether the material is still in place (bank-measure volume), loose or compacted NS refers to this in its narrative as its swell adjustment NS suggests the mark-up would be 25 percent for common excavation, 35 percent for loose rock, and 50 percent for solid rock.[109] DuPont disagrees that this adjustment is necessary, notes that it has been rejected by the

[107] *See* NS Reply e-workpaper "DRR Open Grading errata NS Reply.xlsx," tab "Finish Grading," Column (D)
[108] *See*, e g , the fill widths for valuation sections NYC-218-IL, NYC-217ABCDE-IL, PFWC-1a-PA, PFWC-1c-PA, PFWC-1d-PA, KM-5-OH and KM-6-OH shown in NS Reply e-workpaper "DRR Open Grading errata NS Reply.xlsx," tab "Finish Grading," Column (E).
[109] *See* NS Reply, pp III-F-84-86

STB in the one proceeding involving this cost that has gone to a decision[110] and it also shows that, even if such an adjustment was warranted, NS overstated the adjustment

NS's position is predicated on the unsupported assumption that the ICC Engineering Reports show bank cubic yards ("BCY") while the Means Handbook uses loose cubic yards ("LCY") for hauling In fact, the cubic yard quantities shown on the ICC Engineering Reports are not labeled in any way other than as cubic yards. Without a definitive showing of what the cubic yards on the ICC Engineering Reports represent, any adjustment is speculative at best NS's adjustment is simply another way to arbitrarily and unnecessarily inflate the earthwork costs of the DRR.

Contractors are paid on bank quantities as this is the state of the earth prior to construction and the basis for estimating quantities prior to construction. The contractor bases his bid on these bank quantities and any additional hauling based on swell is factored into the bid DuPont has already shown that actual project costs for a large scale project such as the DRR would be lower than the Means Handbook costs. Indeed, the Trestle Hollow Project cost supports substantially lower earthwork costs for common excavation, as well as loose rock excavation, than costs based on Means Handbook unit costs To take already higher Means Handbook costs, and increase them to account for the estimated difference in bank and loose quantities, simply adds more costs where none would be warranted if the DRR project were actually bid out. Indeed, the Trestle Hollow Project unit cost already reflects any difference in quantities, to the extent a difference exists As such, DuPont urges the Board to reject this additive as it did in *AEPCO*.

While DuPont disagrees with NS's adjustment, it also determined that NS's adjustment is overstated. The source that NS relies upon for its adjustment factors does not have a loose rock

[110] *See AEPCO*, p 92

category. Nevertheless, NS adds 35 percent for this category versus 25 percent for common earthwork. In today's construction world there is no loose rock category of costs; it is either common (which encompasses loose rock) or solid rock. Should the Board accept NS's adjustment despite all its shortcomings, the adjustment should be no higher than 25 percent for loose rock

(9) Subgrade Preparation

On Reply, NS adds costs for subgrade preparation NS criticizes DuPont for not including separate costs for water for compaction on Opening. In certain areas of the DRR, NS adds costs for water for compaction and in other areas of the DRR, NS adds costs for drying the soil prior to compaction.[111] NS's additional costs are unsupported and unnecessary.

NS claims DuPont omitted costs for water for compaction because these costs were excluded from the prior cases involving eastern railroads [112] NS is only partially correct. On Opening,[113] DuPont noted that water for compaction costs were excluded from the prior eastern cases because in those proceedings the STB agreed with complainants that the soil contained sufficient moisture [114] DuPont further stated that, even if water for compaction was needed in a particular area, the common earthwork cost utilized by DuPont included incidental items such as water.[115]

NS spends the remainder of this section describing the analysis it undertook and references several workpapers. DuPont has determined that, after a thorough review of NS's analysis and supporting workpapers, NS's analysis does not hold water.

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[111] *See* NS Reply, pp III-F-87-93.
[112] *Duke/NS*, *Duke/CSXT* and *CP&L*
[113] *See* DuPont Opening, pp. III-F-22-23
[114] *See Duke/NS*, pp 179-180, *CP&L*, p 317; and *Duke/CSXT*, p 483
[115] *See* DuPont Opening, p III-F-23. *See also* DuPont Opening e-workpaper "Trestle Hollow Specifications.pdf" pages 160 (specifications for water for compaction or the drying of soil) and 164 (all grading work is included in the lump sum bid price)

NS claims to have studied the soil conditions along the DRR.[116] In support of this statement, NS references two workpapers. "DRR Physiographic Provinces.pdf" is a three-page document that identifies four physiographic provinces covering the DRR route with general statements regarding the characteristics of each province "DRR_Geo_Loc.pdf" is a one-page map showing the entire DRR laid over a color-coded map allegedly intended to show the geology of the territory of the DRR This map also indentifies six (not four) physiographic provinces. This map is confusing at best.

Next, NS posits

> Attempting to characterize the soil moisture conditions on such a large-scale, regional basis is difficult The compaction characteristics of a particular soil are typically evaluated at a very local basis as soil conditions can vary dramatically over short distances and with depth.[117]

Then NS describes that it relied on detailed soil information using two Natural Resource Conservation Service ("NRCS") sources – the Soil Climate Analysis Network ("SCAN") and the Web Soil Survey ("WSS") [118] NS then explains

> The SCAN system collects soil moisture, precipitation, and other climatic information at specific stations across the U.S. and makes it available in real-time over a website. Within most states traversed by the DRR, NS has identified at least one SCAN station near the alignment [119]

Despite NS's earlier statement that "soil conditions can vary dramatically over short distances," NS is proud that it was able to identify at least <u>one</u> SCAN station in <u>most</u> states traversed by the DRR A review of NS's workpaper "DRR Soil Moisture Content R1.xlsx" reveals that NS identified twenty-one (21) SCAN stations in only fourteen (14) of the twenty

[116] *See* NS Reply, p III-F-89
[117] *See* NS Reply, p III-F-89.
[118] *Id*, p. III-F-90
[119] *Id* (footnote omitted)

(20) states traversed by the DRR Of these twenty-one (21) locations, only three (3) are located on DRR lines.[120]

NS next compared the SCAN data to WSS data for these same twenty-one (21) locations plus another seventeen (17) WSS locations that do not correspond to SCAN locations. NS then magically determined without explanation that thirty-one (31) of these thirty-eight (38) locations are "wet," five (5) are "dry" and two (2) are "at opt."[121]

NS then shifts gears in its text and refers to these thirty-eight (38) locations as thirty-eight (38) major soil types.[122] It is unclear how this transition from location to soil type is made, especially since "silt loam" appears under "Predominant Soil Type" for thirteen (13) of the thirty-eight (38) locations.[123]

Having developed this thirty-eight (38) line table which makes no sense, NS attempts to quantify the cubic yards of earthwork which NS alleges require water for compaction and the cubic yards of earthwork which NS alleges require drying prior to compaction [124] NS lists each of the 294 segments of the NS's DRR configuration and specifies whether each segment is "wet," "dry" or "opt "[125] In a footnote, NS identifies the source of this identification, for 294 specific segments with specific mileposts, as "See NS Reply WP "DRR_Geo_Loc.pdf" mapping which val segments fall in different soil conditions areas "[126] This is the same letter-sized one-page map of the DRR described earlier as confusing at best. Nowhere on this map is any identification of valuation segments.

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[120] Compare the SCAN locations shown in NS Reply e-workpaper "DRR Soil Moisture Content R1 xlsx" with the location of these stations shown on the map in NS Reply e-workpaper "DRR_Geo_Loc.pdf"

[121] *See* NS Reply e-workpaper "DRR Soil Moisture Content R1.xlsx."

[122] *See* NS Reply, p III-F-92

[123] *See* NS Reply e-workpaper "DRR Soil Moisture Content R1.xlsx "

[124] *See* NS Reply e-workpaper "DRR Open Grading errata NS Reply.xlsx," tab "Subgrade Preparation "

[125] *Id*

[126] *Id.*

NS's quantity calculations are equally puzzling and erroneous. For segments classified as "wet," NS assumes that every cubic yard of common excavation must be dried. Notwithstanding the fact that the classification of "wet" is totally unsupported, this calculation is a gross overstatement. Even assuming that every cubic yard needed to be dried, which DuPont vehemently disputes, only 70% of common excavation is assumed to be reused as embankment and 30% is wasted. There is no reason to remove water from the waste quantities.

For segments classified as "dry," NS applies water for compaction costs to 20% of the total common excavation and borrow quantities NS sources its 20 percent factor to William Hay's Railroad Engineering[127] but there is nothing in the sourced material specifying 20 percent. Furthermore, only 70 percent of the common excavation quantities are assumed to be reused as embankment and there is no need to add water for compaction to waste quantities.

Finally, NS applies a cost of {{[redacted]}} per cubic yard for water for compaction and a cost of {{[redacted]}} per cubic yard for the drying of soil.[128] Apparently, NS believes that the cost to supply water, drive a truck over the roadbed and spray water costs *over 8 times more* than the costs for a bulldozer with a Disc Harrow Attachment to spread and scarify material to be dried prior to compacting. NS's unit cost for water makes no sense.

As shown above, NS's attempt to classify portions of the DRR needing water for compaction and requiring drying of material prior to compacting is erroneous, unsupported and totally unreliable. The initial identification of which areas are "wet," "dry" or "opt" is unsupported and confusing at best. The link from the identification of these areas on the one-page map to the milepost-specific segments of the DRR is non-existent NS's quantity

[127] *See* NS Reply, p. III-F-93 and note 144
[128] *See* NS Reply e-workpaper "DRR Open Grading errata NS Reply.xlsx," tab "Subgrade Preparation "

calculations are erroneous and unsupported. NS's unit cost for water for compaction is ridiculously overstated NS's analyses and costs must be rejected.

DuPont continues to exclude additional costs for water for compaction or drying of material for two reasons First, NS has provided no supported evidence that such costs are required. Second, as noted earlier, DuPont's Trestle Hollow Project unit cost includes the costs for these two items should they be necessary Furthermore, even though NS claims that the Trestle Hollow Project soil analysis showed optimum water content,[129] DuPont's engineering witness Mr. Crouch, who oversaw the Trestle Hollow Project, recollects that water for compaction was used on the project and, following rain events, the contractor was required to blade up the soil so it would dry. There was no additional compensation for these items per the Trestle Hollow Project specifications identified previously.

(10) Land for Waste Excavation

Consistent with the procedures used in other SAC cases, on Opening, DuPont assumed a 30 percent waste ratio for excavation quantities and included the costs to acquire rural land at a cost of $27,000 per acre to place the wasted material.[130]

NS accepted DuPont's approach but made several modifications to DuPont's methodology and calculations. NS increased the distance for waste excavation haulers, expanded the footprint of the waste dump sites to allow for the side slope of the waste material and space for equipment to work, placed a waste dump site every mile along the DRR and increased the average cost of the land to {{[redacted]}} per acre by including the cost of urban land.[131]

[129] *See* NS Reply, pp. III-F-43-44
[130] *See* DuPont Opening, p. III-F-17
[131] *See* NS Reply, pp III-F-75-77 and e-workpaper "DRR Open Grading errata NS Reply xlsx," tab "Other Costs."

DuPont rejects NS's increased haul distance NS has not shown that DuPont's distance was not feasible NS's assumption of evenly spaced and evenly sized waste excavation along the DRR requiring a waste pit every mile is unsupported and erroneous The 30% waste excavation figure is an average for the entire DRR. Some sections will have no waste excavation as all of the material will be suitable for reuse as embankment. Some sections will have more than 30% waste due to lesser embankment needs or the removal of unsuitable material.[132] Waste dump sites are only needed where there is waste and cannot be spaced evenly along the DRR The sites will be placed alongside the DRR in close proximity to where the waste material is generated [133]

DuPont accepts NS's increase to the footprint of the waste dump sites to account for the side slope of the waste material and space for equipment to work. DuPont has increased its land requirements by the same ratio used by NS.[134]

DuPont rejects NS's increase in land costs As noted above, the DRR's waste material dump sites are not evenly spaced or evenly sized. The majority of excavation will take place outside of urban areas as urban areas, with a few exceptions, tend to be more flat. Furthermore, a least-cost, most-efficient railroad such as the DRR will make a concerted effort to balance cut and fill quantities in urban areas resulting in less waste Finally, DuPont is not aware of any previous SAC proceedings where urban land was used for waste dump sites. In fact, in several other proceedings before the STB, both parties have used the rural cost per acre with costs as low

[132] The 30 percent waste excavation estimate dates back to the early SAC proceedings where the ICC Engineering Report data was first used and 30 percent has been used ever since

[133] DuPont notes that the increased hauling costs are actually incorporated into NS's Reply earthwork unit costs As discussed above in the earthwork unit cost section, DuPont did not accept NS's unsupported increased hauling distance

[134] *See* NS Reply e-workpaper "DRR Open Grading errata NS Reply.xlsx," tab "Other Costs " {{ }} acres acquired to {{ }} acres needed for the waste material equals a mark-up ratio of {{ }}.

as $300 per acre.[135] On Rebuttal, DuPont continues to use $27,000 per acre for land for waste excavation.

c. Drainage

i. Lateral Drainage

As noted in Part III-B, DuPont has accepted NS's additional route miles in Chicago and the six coal lead tracks. As a result, the parties agree on lateral drainage costs for the DRR

ii. Yard Drainage

On Opening, DuPont included $28 7 million for yard drainage for the DRR's six (6) major yards in the yard building site development costs.[136] For the remaining DRR yards, DuPont's engineers accounted for drainage by properly sloping the yard track roadbed so that water runs off through the ballast into ditches. NS claims that drainage structures must be included for every single foot of its more than 1.500 miles of yard track at a total cost of over $132 million [137] NS's overstated drainage is unsupported and not needed.

When setting up the DRR yard tracks, the roadbed is sloped to run the surface drainage to ditch lines and the ballast aids in running the storm water toward the roadbed shoulders making drainage structures unnecessary. In addition, NS has not demonstrated that drainage structures are needed for every foot of DRR yard track nor has NS provided any evidence that the drainage it proposes for the DRR is included in all of its own yards NS simply took a cost per foot that it developed from a single yard and applied it to all DRR yard track During his work with both

[135] *See* Complainant's January 25, 2010 Opening Evidence (Public Version) in *AEPCO*, p III-F-38 and Defendants' May 7, 2010 Reply Evidence (Public Version), p III.F-28, Complainant's August 31, 2009 Opening Evidence (Public Version) in *Seminole*, pp III-F-38-39 and Defendant's January 19, 2010 Reply Evidence (Public Version), p. III-F-45, Complainants' April 19, 2005 Opening Evidence (Public Version) in *WFA/Basin*, p III-F-44 and Defendant's July 25, 2005 Reply Evidence (Public Version), p III.F-82, Complainant's March 1, 2004 Opening Evidence (Public Version) in *AEP Texas*, pp. III-F-42-43 and Defendant's May 24, 2004 Reply Evidence (Public Version), p. III.F-80; and Complainant's June 13, 2003 Opening Evidence (Public Version) in *Otter Tail*, p III-F-31 and Defendant's October 8, 2003 Reply Evidence (Public Version) at p III.F-123 These pages are included in DuPont Rebuttal e-workpaper "Rural land cost pdf"

[136] *See* DuPont Opening, p. III-F-18

[137] *See* NS Reply, pp III-F-94-95

NS and Crouch Engineering, DuPont witness Crouch has seen numerous NS and other railroad yards with no track drainage inlet and culvert structures. Furthermore, NS actually prefers that catch basins and similar drainage facilities not be included because they tend to interfere with ballast regulation and they are easily clogged with ballast and fines Indeed, when Crouch Engineering worked on a yard project for NS in Sheffield, AL, no additional drainage for the new yard tracks was included.

For the above reasons, DuPont has not included drainage costs for any additional yards on Rebuttal. DuPont has increased its Opening yard drainage costs from $28 7 million to $29.3 million to reflect the increased size of the DRR's six major yards.

d. Culverts

On Opening, DuPont explained its development of culvert costs at pages III-F-18 through 20. DuPont included $131.9 million for culvert costs NS's response to DuPont's culvert costs is contained at pages III-F-95 through 107 of its Reply. NS included $746.8 million for culvert costs. Each of NS's criticisms is addressed below.

i. Culvert Unit Costs

On Opening, DuPont utilized unit costs for corrugated metal pipe ("CMP") derived from a bid from Contech, a vendor that supplies CMP to many railroads. Transportation costs for culverts were included at $0.035 per ton-mile. The crushed stone bedding unit cost, including placement, was derived from the Trestle Hollow Project. The excavation and backfill pricing was derived from Means Handbook unit costs [138]

NS accepted DuPont's unit cost for culverts and DuPont's transportation costs of $0.035 per ton-mile but claims that DuPont understated transportation costs by understating the weight

[138] *See* DuPont Opening e-workpaper "Culvert Construction Costs errata xls "

of the culverts. DuPont agrees that culvert weights were understated in opening and has accepted NS's change in weights used to calculate culvert transportation costs

NS rejected DuPont's unit cost for crushed rock bedding material derived from the Trestle Hollow Project cost for sub-ballast for culverts and developed bedding costs from the Means Handbook. The Trestle Hollow Project sub-ballast costs are discussed in more detail in Part III-F-3 Regardless, as DuPont has already explained in this section, the Trestle Hollow Project costs are valid and feasible. Consequently, DuPont continues to use its Opening unit cost for the culvert bedding.

NS accepts DuPont's Opening unit costs for excavation and trench backfill based on the Means Handbook.[139]

ii. Culvert Installation Plans

NS states that the culvert installation plan in DuPont's Opening text and DuPont's workpapers for trench dimensions are conflicting[140] On Rebuttal, DuPont has corrected its calculations to match the specified trench width equal to the culvert width plus one foot on either side[141] of the culvert and the trench height of two feet higher than the culvert height DuPont also accepts NS's other modifications to culvert widths and spacing between pipes on multiple barrels

DuPont has also corrected its calculation of bedding material to correspond to the corrections in trench width and accepted NS's modification to the height of the bedding material. Finally, DuPont has corrected trench backfill quantity to correspond to the applicable trench dimensions

[139] *See* NS Reply, p III-F-97.
[140] *Id*, pp. III-F-97-98
[141] *See* DuPont Opening, p III-F-19

iii. Culvert Quantities

On Opening, DuPont used the culvert inventories provided by NS in discovery to form an initial culvert list. As explained on Opening at page III-F-20, it was necessary for DuPont to make some assumptions regarding the data provided by NS. On Opening, DuPont also converted bridges less than 20 feet in length to culverts.

NS identified several issues with DuPont's opening culvert quantities.[142] Based on a review of NS's Reply, DuPont has made several modifications to its culvert quantities. DuPont has removed from the culvert list the bridges less than 20 feet in length that are bridges over automobile roads and, instead, constructed bridges at those locations. DuPont has also accepted NS's modifications to the number and size of CMP culverts required to replace bridges under 20 feet in length and large box culverts based on the flow requirements. DuPont has accepted NS's inclusion of costs for replacement in kind when the costs of CMP exceeded the costs for replacement in kind DuPont has accepted NS's inclusion of culverts shorter than 20 feet when those culverts are extensions of existing pipes. Finally, DuPont has accepted NS's reduction in culvert quantities caused by a misinterpretation of the culvert data provided by NS in discovery.

In addition to the differences in quantities described above, DuPont identified a major problem with NS's culvert quantities Specifically, NS grossly overstated the length of 50 culverts by thousands of feet each For example, at milepost 258 7 on the Central Division, there are two 135-foot culverts that NS listed as 150,015 feet each.[143] The overstatement in length for these 50 culverts caused a $499 million overstatement in NS's culvert costs [144]

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[142] *See* NS Reply, pp. III-F-100-107

[143] *See* DuPont Rebuttal e-workpaper "NS culverts with excessive lengths xlsx."

[144] Making only the length corrections in NS's culvert spreadsheet reduces the total cost from $747 million to $248 million *See* DuPont Rebuttal e-workpaper "Culvert Construction Cost errata_NS Reply corrected lengths xlsx," tabs "Unit Costs" and "Active."

NS also claims that DuPont erred by failing to provide culvert inlet protection (silt fences) during construction. On rebuttal, DuPont has included the costs for inlet protection

With the modifications described above, DuPont's revised Rebuttal culvert costs equal $218 million [145]

e. Other

i. Sideslopes

The parties agree on an average 1 5.1 sideslope

ii. Ditches

The parties agree on the specifications for ditches

iii. Retaining Walls

On Opening, DuPont developed retaining wall quantities using the ICC Engineering Reports and used gabions for all retaining walls.[146] To be conservative, DuPont allocated all of the retaining wall quantities (shown on the ICC Engineering Reports as cubic yards) for a given valuation section to the mainline miles of the valuation section, creating an average quantity of cubic yards of retaining walls per mainline mile for each valuation section. This methodology most likely results in an overstatement of the quantities per mile because it is probable that some retaining walls were necessary to accommodate side tracks, yard tracks or other facilities that the DRR is not constructing. DuPont then applied this average quantity per mainline mile to the route miles of the DRR traversing each valuation section.

NS accepts DuPont's use of gabions and the allocation process to calculate the average cubic yards per mile but rejects DuPont's development of quantities for the DRR line segments. NS claims that DuPont failed to account for increased quantities due to the increased roadbed

[145] *See* DuPont Rebuttal e-workpaper "Culvert Construction Costs Rebuttal xlsx."
[146] *See* DuPont Opening, pp. III-F-20-21

width of the DRR, understated quantities by assuming a 1.1 replacement of masonry with gabions, failed to include costs for the preparation of the foundation area of the walls and failed to use treated timber piles for timber piling walls.[147] NS's claims are addressed below.

(1) Increased Roadbed Width

NS brings out a tired, and rejected, argument that the retaining wall quantities should be increased due to differences in roadbed width between those used when the ICC Engineering Reports were compiled and those used today.[148] This argument was raised recently in *AEPCO* and *AEP Texas* and rejected by the Board.[149] Before turning to the merits, DuPont notes that the same engineers that NS is using raised the exact same arguments in *AEPCO* and *AEP Texas*. Indeed, DuPont believes that the workpapers may even be the same, as the date on some of the materials is circa 2003. Regardless, NS has not offered any new rationale that is different than that raised and rejected in *AEPCO* and *AEP Texas*. On this basis alone, NS's additional retaining wall quantities are unwarranted.

NS's methodology is also flawed. First, NS has provided no evidence detailing the construction of any new retaining walls or increasing the height of existing retaining walls to accommodate modifications to the original roadbed width, nor has it shown that the original roadbed width has been significantly increased in size.[150]

Second, NS has assumed that, at every retaining wall location, the topography is such that the surrounding earth side wall is always going upward (in a cut) or downward (in a fill) as one moves out from the center of the roadbed. This is simply not the case. NS's drawings of these circumstances in its Reply workpapers have no basis in reality. In particular, the side retaining

[147] *See* NS Reply, p III-F-108.
[148] *Id*, p III-F-109-110.
[149] *See AEPCO* at 84 and *AEP Texas* at 84
[150] The adjustments made to the ICC Engineering Report earthwork quantities by both parties to account for a modern 24-foot roadbed are based on an assumption of the original roadbed width but there is no evidence that the roadbed width of the lines replicated by the DRR, in fact, have been modified from the original construction.

walls do not always increase; they may actually decrease or they may stay the same. The only way to know for certain what impact a wider roadbed would have on a retaining wall is to look at each and every retaining wall location and ascertain the surrounding topography Thus, if the topography is sloping upward away from the roadbed, a wider roadbed would result in a taller retaining wall in a cut and a shorter retaining wall for a fill However, if the topography is sloping downward away from the roadbed, the opposite would occur (*i.e.*, a wider roadbed would result in a shorter retaining wall in a cut and a higher retaining wall in a fill). Finally, if the topography is flat, widening the roadbed would have no impact on the height of the retaining wall. NS provides no evidence that it reviewed all existing retaining wall locations and determined that in every instance the retaining wall would need to be enlarged. Such a result is illogical.

In addition, NS assumes that the wider roadbed extends equally on each side of the track centerline. NS has provided no support for this assumption. If there is a location where a retaining wall is necessary, it is quite possible that the entire amount of the widened roadbed could be accommodated on the side where the retaining wall is not required, meaning that no adjustment in size is necessary. In short, there are several scenarios where the retaining wall quantities could be decreased as well as increased, and NS has relied only on unsupported assumptions.

NS's increase in retaining walls heights is also flawed because it assumes that all retaining walls from the ICC Engineering Reports were ten feet tall and that the new walls must be fourteen feet tall NS has provided no evidence that all the retaining walls from the ICC Engineering Reports are ten feet tall, as the ICC Engineering Reports do not show the height of any retaining wall. NS claims that it included photos demonstrating that the average ten-foot

height for all the retaining walls on the DRR is reasonable [151] A review of the photos submitted by NS clearly demonstrates otherwise.[152] In addition, NS provided no basis for its assumption that all retaining walls on the DRR would be fourteen feet in height. Furthermore, NS's four-foot increase in height is based on its flawed assumption of the impact of an expanded roadbed width which DuPont debunked above. NS's increase in retaining wall height is completely unsupported.

(2) Masonry Walls

On Opening, DuPont provided gabion baskets in place of the many varieties of masonry walls shown on the ICC Engineering Reports DuPont's use of gabion baskets and a one-for-one CY quantity replacement is the same methodology employed in other cases.[153] In this case, NS abandons the accepted methodology and instead proceeds from a flawed assumption that all masonry retaining walls on the DRR are solid and weigh 54% more than the stone included in the baskets of the gabion retaining walls.[154]

NS's weight adjustment is unsupported. NS has provided no evidence that all masonry walls are solid. The ICC Engineering Reports show that a vast number of different materials were used A list of over sixty (60) various materials used for masonry retaining walls as identified on the ICC Engineering Reports is contained in DuPont's Rebuttal workpapers.[155] Approximately a third of the material types are identified as in mortar, cement or concrete Another third of the material types are identified as "dry" meaning pieces of stone placed with no

[151] *See* NS Reply, p. III-F-113

[152] *See* NS Reply e-workpaper "Retaining wall photos.pdf" This workpaper consists of six photographs at three locations and the last photo shows a retaining wall no more than three feet high Clearly, this does not support NS's average ten-foot height.

[153] *See WFA/Basin*, p. 89, where the parties agreed on the existing retaining wall quantities. and *AEP/Texas*, p 84, where the only dispute on quantities was BNSF's failed attempt to double the quantities for the wider roadbed.

[154] *See* NS Reply, pp III-F-111-112. NS compares "solid unit weights" to "broken-stone unit weight."

[155] *See* DuPont Rebuttal e-workpaper "Types of masonry retaining wall materials on ICC Engineering Reports xlsx "

mortar (or, stated differently, broken stone such as the type used in gabions). Yet another third are unspecified as to whether they are in mortar or dry

As explained above, DuPont's retaining wall quantities are most likely overstated to begin with because DuPont assigned all retaining walls in each valuation section to the route miles of the valuation section and applied the amount per route mile to the main line miles of the DRR. Stated differently, as the ICC Engineering Reports do not show the location of retaining walls, DuPont assumed all retaining walls were put in place for the main line track Many of the valuation sections where the masonry retaining walls are most prevalent include many miles of second and third main and yard track that the DRR is not constructing. Yet, DuPont conservatively included the total amount of retaining walls for the valuation section in determining the average amount per route mile For the top twenty valuation sections with the highest average masonry retaining wall quantities per mile, the main line miles represent only 2 to 46 percent of the total miles, for seventeen of the twenty valuation sections, the route miles are 25 percent or less of the total miles.[156] By assigning all the masonry retaining walls on the ICC Engineering Reports to the main line, DuPont has clearly overstated the DRR's retaining wall quantities.

To demonstrate the absurdity of NS's modifications, for three of the top twenty valuation sections with the most masonry per mile, NS's miles of retaining walls exceed the total miles of the segment by a significant amount.[157] Simply put, NS's modification of the masonry quantities from the ICC Engineering Reports – an argument that has never been accepted before – finds no support in the evidence.

[156] *See* DuPont Rebuttal e-workpaper "Overstated Retaining Walls xlsx "
[157] *Id.*

(3) Timber and Tie Walls

NS accepted the quantities that DuPont's engineers pulled from the ICC Engineering Reports but disputes the gabion quantities required for replacement.[158] DuPont's accepted methodology[159] develops quantities by calculating the SY facing area of the timber and tie walls and replacing that same SY facing area with CY of gabions. The difference in gabion quantities between the parties is caused primarily by NS's development of linear feet of timber and tie retaining walls based on its unsupported ten-foot height assumption. However, as explained above, NS assumed that all of the retaining walls from the ICC Engineering Reports are ten feet high and that all of the DRR's retaining walls should be fourteen feet high due to the wider roadbed. DuPont has already explained why NS's increased wall heights are unsupported. Moreover, NS provided no evidence that any, let alone all, of the timber and tie walls from the ICC Engineering Reports are ten feet tall. Moreover, for the reasons described above, DuPont has likely overstated the retaining wall quantities. Therefore, DuPont continues to use its Opening quantities for timber and tie walls, modified only for the slight increase in route miles on Rebuttal.

(4) Piles

NS claims that DuPont erred by not including treated timber piles for timber piling retaining walls. NS uses the International Code Council specifications as its support.[160] NS's reliance on the International Code Council is misplaced as it is not applicable to railroad retaining wall construction. According to its website, "The International Code Council, a membership association dedicated to building safety, fire prevention and energy efficiency, develops the codes used to construct residential and commercial buildings, including homes and

[158] *See* NS Reply, pp. III-F-112-113.
[159] *See WFA/Basin*, p. 89, indicating that there was no dispute over the quantities of existing retaining walls.
[160] *See* NS Reply, p. III-F-110.

schools."[161] Nowhere does it say on the website that the International Code Council's codes are applicable to railroad construction. DuPont has not made any changes to its pile unit cost on Rebuttal.

(5) Foundation Excavation

NS claims that DuPont failed to include costs for the preparation of the foundation areas of the DRR's retaining walls.[162] Using its 10-foot average retaining wall height, NS calculates a retaining wall foundation excavation volume of over one (1) million cubic yards that it adds to the DRR's common excavation totals.[163]

NS's calculation is erroneous as it relies on the totally unsupported assumption that all retaining walls on the DRR average ten feet in height. Furthermore, NS's inclusion of over a million cubic yards of common excavation is a double-count of excavation quantities. Foundation excavation quantities for retaining walls are identified on the ICC Engineering Reports and both parties included them in the excavation quantities used to calculate the earthwork quantities per mile for the DRR line segments.[164] NS's additional foundation excavation quantities are clearly a double-count and should be rejected.

(6) Unit Costs

NS accepted DuPont's unit cost for gabions. As discussed above, DuPont has rejected NS's treated pile timber unit cost.

[161] http://www.iccsafe.org:8888/AboutICC/Pages/default.aspx

[162] *See* NS Reply, p. III-F-108.

[163] *Id.*, p. III-F-114.

[164] *See* DuPont Rebuttal e-workpaper "Rebuttal foundation excavation and subsidence.xlsx" for an identification of the valuation sections for which the ICC Engineering Reports include quantities of foundation excavation. A review of the grading spreadsheets used by both parties reveals that the foundation excavation quantities for these certain valuation sections are included in the earthwork quantities taken off the ICC Engineering Reports. *See also* DuPont Opening e-workpaper "DRR Open Grading errata.xlsx," tab "Eng Rep Input" and NS Reply e-workpaper "DRR Open Grading errata NS Reply.xlsx," tab "Eng Rep Input."

iv. Rip Rap

NS accepted DuPont's unit cost for rip rap. NS also accepted DuPont's methodology for developing rip rap quantities but adjusted the DRR quantities by correcting an input error from the ICC Engineering Reports.[165] Although not discussed, NS also added quantities for the "partially owned lines." DuPont has made the correction to the ICC Engineering Report quantities but, as explained earlier, is not constructing the "partially owned lines."

v. Relocating and Protecting Utilities

NS accepted DuPont's Opening costs of $147,000 for this activity.[166]

vi. Seeding/Topsoil Placement

NS accepted DuPont's Opening quantities for this item but rejects DuPont's Opening unit cost, which was based on the Trestle Hollow Project, in favor a lower unit cost based on the Means Handbook.[167] As DuPont has demonstrated that the Trestle Hollow Project unit costs are reasonable and feasible for the DRR, DuPont continues to use its Opening unit cost for seeding/topsoil placement.

vii. Water for Compaction

Water for compaction was addressed previously in the section on Subgrade Preparation.

viii. Surfacing for Detour Roads

NS accepted DuPont's inclusion of $0.5 million for road detours on the recently-constructed line branch lines that the DRR is replicating.[168]

ix. Environmental Compliance

NS accepted DuPont Opening environmental compliance costs of $0.2 million.[169]

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[165] *See* NS Reply, p. III-F-114.
[166] *Id.*
[167] *Id.*, p. III-F-115.
[168] *Id.*
[169] *Id.*

x. Lighting for Night Work

On Reply, NS included over $265 million for lighting costs for nighttime work on the DRR in order to meet the DRR's aggressive construction schedule. NS calculates the costs based on a seven-month time period, 25 days per month with lighting crews every 10 miles over the entire DRR network.[170] NS's cost is ridiculous. NS has provided no support for its time assumptions or its crew spacing. NS's cost is unnecessary, a barrier to entry and has been rejected by the STB

NS's cost is unnecessary because there is sufficient daylight available to construct the DRR The U.S. Naval Observatory data base containing sunrise and sunset times shows that on the shortest days during the construction period of the DRR, occurring in the last two weeks of December 2007 and 2008, the time between sunrise and sunset was 9 hours and 33 minutes at Danville, KY (a location in the middle of the DRR's territory). In addition, on these same days, the time between the beginning and end of civil twilight (where the sun illuminates brightly enough for outdoor activities without the aid of light) is 10 hours and 32 minutes.[171] Obviously, this time is longer the rest of the year. So even on the shortest day, there is sufficient daylight for construction crews to do their work

NS's lighting costs can also be classified as a barrier to entry. Under the theory of unconstrained resources, the DRR would be able to deploy more personnel, equipment and materials during the shorter days in order to maintain its "aggressive construction schedule," as characterized by NS

[170] *Id.* pp III-F-115-116.
[171] *See* DuPont Rebuttal e-workpaper "Daylight.xlsx "

Finally, DuPont notes that this type of cost has only been presented in two other SAC proceedings and was not accepted by the STB in either proceeding.[172]

xi. Dust Control Work

On Reply, NS included over $7 million for dust control work. In support of including this cost, NS refers to Environmental Protection Agency regulations.[173] This is another example of NS's new cost items that have never before been presented in a SAC proceeding It is also an unnecessary cost.

As noted previously, DuPont included costs in Opening for Environmental Compliance and NS accepted those costs in Reply. Therefore, these costs are already included and should not be included again

3. Track Construction

On Opening, DuPont developed the unit costs and quantities for DRR track construction based on quotes from vendors and design standards that met or exceeded those used by other Class I and regional railroads.[174] NS accepts many of DuPont's unit costs but adds other costs and increases track-mile quantities causing an increase of over $2 billion in track construction costs As discussed below by component, DuPont has accepted some of NS's changes while others have been rejected. Before turning to the individual items of difference, DuPont notes that a significant amount of the difference in track construction costs is attributable to NS's overstated track miles associated with NS's new and enlarged yards as well as the construction of the Partially Owned Lines. As explained in Parts III-B, III-C and later in III-F, DuPont is not building many of these additional facilities

[172] *See Otter Tail*, p D-18. In *AEP Texas*, construction lighting was presented by BNSF but was not specifically discussed in the STB's decision.
[173] *See* NS Reply, pp. III-F-116-117
[174] *See* DuPont Opening, pp. III-F-24-32

While preparing for Rebuttal, DuPont realized that it had significantly overstated track construction costs for many components due to incorrect references in three locations. Specifically, DuPont double-counted three categories of track miles and failed to include three other categories of track miles [175] This resulted in an 11 percent overstatement on Opening in track feet causing corresponding overstatements in the costs for ballast, sub-ballast, ties, field welds, other track material and track labor and equipment. DuPont also realized that it had inadvertently allocated track miles into the wrong rail weight categories on Opening.[176] Both of these issues have been corrected on Rebuttal. This results in total track construction costs that are slightly lower than Opening despite the additional track miles included by DuPont on Rebuttal.

Table III-F-5 below compares the track construction costs developed by DuPont and NS in Opening, Reply and Rebuttal.

[175] *See* DuPont Opening e-workpaper "Track Construction Costs errata.xls," tab "Summary." Tab "Summary" Cell E40 incorrectly referenced tab "User Input" cell D51 instead of D44; tab "Summary" Cell E41 incorrectly referenced tab "User Input" cell D52 instead of D45; and tab "Summary" Cell E42 incorrectly referenced tab "User Input" cell D53 instead of D46 As a result, tab "User Input" cells D51, D52 and D53 were included twice and cells D44, D45 and D46 were omitted

[176] Track miles with 115 lb. rail were classified as 136 lb rail and vice versa.

Table III-F-5
DRR Track Construction Costs
($ in thousands)

	Item	DuPont Opening 1/	NS Reply 2/	DuPont Rebuttal 3/
	(1)	(2)	(3)	(4)
1	Geotextile Fabric	$2,328	$4,809	$3,636
2	Ballast and Subballast	1,152,318	2,354,887	1,125,237
3.	Ties	1,635,780	1,820,758	1,621,007
4	Track (rail)			
	a Rail (all track)	2,501,080	3,253,914	2,550,744
	b. Field Welds	33,356	33,964	31,624
	c. Switches (turnouts)	503,563	575,227	577,206
5	Rail Lubricators	2,167	12,068	12,068
6.	Plates, Spikes and Anchors	852,751	882,650	797,129
7.	Derail and Wheel Stops	1,289	85,446	13,425
8.	Track Labor and Equip	1,557,178	1,585,570	1,476,104
9.	Total	$8,241,810	$10,609,293	$8,208,180

1/ DuPont Opening Errata (May 17, 2012), Table III-F-7
2/ NS Reply, Table III-F-13.
3/ Rebuttal e-workpaper "Track Construction Costs Rebuttal xls"

a. Geotextiles

NS argues that DuPont understated the amount of geotextile fabric that is required under the DRR's turnouts, and that DuPont did not provide detailed calculations for its fabric quantities.[177] NS then claims it recalculated the quantities for all of the turnouts. NS misunderstood DuPont's unit costs and its calculation methodology.

In reviewing NS's criticisms, DuPont discovered one error and one mislabeling in its geotextile quantity and cost calculations. DuPont's unit cost for geotextile fabric, $1.20 per square yard (which NS accepted), was intended to be a cost per track foot ($1.60). The unit cost was then applied to the track feet quantities which were inadvertently mislabeled as square yards. Thus, when DuPont showed 236 as the quantity for a No. 10 turnout (117 feet long), DuPont

[177] *See* NS Reply, pp. III-F-118-119.

intended to include the costs for 306.8 square yards of fabric. This is enough fabric to cover both the mainline portion of the track as well as the diverging track. DuPont's quantity allowed for overlap between the two legs of the turnout as well as extra length to extend slightly beyond the end of the turnout.

NS has included too much geotextile fabric per turnout This overstatement is due the application of geotextile fabric over the entire roadbed, and not simply extending 6 feet from the centerline of track on each side of the mainline side and the diverging track side, as is current railroad industry practice.[178] NS applied geotextile fabric to the entire roadbed which is not necessary as the loads will be transferred at a 1 to 1 slope from the edge of the tie. DuPont has provided enough geotextile fabric to cover the entire turnout and where loads are being transferred at a 1 to 1 slope from the edge of the tie NS has also overstated the required number of turnouts, primarily due to its overstated yard track requirements.

On Rebuttal, DuPont has corrected the quantity calculations to reflect square yards applied to the agreed-upon unit cost of $1.20 per square yard

b. Ballast and Sub-ballast

Ballast and sub-ballast represents over half of the difference in track construction costs between the parties. NS identifies several design and unit cost criticisms, most of which (as explained below) are without merit.

i. Ballast and Sub-ballast Quantities

For mainline track, DuPont specified a 12-inch layer of ballast and 6-inch layer of sub-ballast For yard and set-out tracks, DuPont specified a 6-inch layer of ballast and a 4-inch layer

[178] *See* NS Reply e-workpaper "NS Turnout Geotech Sketch pdf"

of sub-ballast [179] NS accepted DuPont's specifications[180] but alleged four errors in DuPont's quantity calculations As discussed below, all but one of NS's allegations have no merit.

NS first claims that DuPont understated the tons per cubic yard for both ballast and sub-ballast NS cites to DuPont's Opening text where DuPont shows a weight-to-volume conversion factor of 1.5 tons per cubic yard and to DuPont's workpapers where DuPont's calculations use a lower conversion factor of 1.35 tons per cubic yard.[181] NS assumed that DuPont's text was correct and its calculations in error so NS relied on the 1 5 conversion factor in its Reply.

In fact, DuPont's text was wrong and its workpapers were correct Furthermore, NS should have known this as NS uses a conversion factor of 1.32 tons per cubic yard in its normal course of business. In the ballast price information provided to DuPont by NS in discovery, NS calculated an average price per net ton for ballast for each year Right below that calculation, NS converted the price per net ton to the price per cubic yard. NS's calculation multiplied the price per net ton by a factor of 1 32 to derive the price per cubic yard.[182] In other words, NS converted tons to cubic yards using a factor of 1.32 As NS's own document supports the 1.35 conversion factor which DuPont used in its calculations. NS's 1 5 conversion factor must be rejected DuPont continues to use its opening 1.35 conversion factor in Rebuttal.

NS next argues that DuPont's ballast cross section area calculations are incorrect and unsupported and, therefore, NS calculated its own ballast cross section areas. Because NS could not replicate DuPont's calculations, NS relied on its own cross section area calculations in its Reply.[183] However, NS was able to replicate DuPont's cross section area calculations for sub-

[179] *See* DuPont Opening, p. III-F-26.
[180] *See* NS Reply, p. III-F-120
[181] *Id.* pp III-F-120-121 and III-F-132.
[182] *See* DuPont Opening e-workpaper "Ballast Purchases.xls," tabs "2009" and "2010," cell F18. "Ballast Purchases xls" was provided by NS in discovery.
[183] *See* NS Reply, pp III-F-121-122.

ballast and accepted them.[184] DuPont has no idea why NS could replicate DuPont's cross sectional area calculations for sub-ballast but not for ballast as DuPont could not find any support for NS's ballast cross sectional area calculations in its workpapers. NS provided cross-sectional drawings in the same manner that DuPont did but no calculations could be found in NS's workpapers. Because NS could replicate DuPont's sub-ballast figures, DuPont assumes that there must be some error in NS's calculations for ballast. For that reason, DuPont continues to rely on its cross sectional area calculations included in Opening.

NS next claims that DuPont erred in its ballast and sub-ballast calculations by not relying on the cross sectional area calculations for multiple tracks.[185] In fact, DuPont built all sidings and other side-by-side tracks such as yard tracks as individual tracks using the single track ballast and sub-ballast sections. In other words, DuPont overstated the amount of ballast and sub-ballast that DRR would need because side-by-sections would have elements that overlap.

Finally, NS claims that DuPont overstated its sub-ballast calculations by computing the cross sectional area using a depth of 6 inches for yard and set-out tracks instead of the 4 inches referenced in DuPont's Opening.[186] NS is correct and DuPont has corrected this calculation on Rebuttal

Accordingly, DuPont continues to use its Opening ballast and sub-ballast quantities per track foot (with the one correction to yard and set-out tracks) applied to the Rebuttal track quantities.

[184] *Id*, p III-F-132.
[185] *Id*, pp. III-F-122-123
[186] *Id*, p III-F-132

ii. Ballast and Sub-ballast Unit Costs

On Opening, DuPont's ballast costs were derived from an average of ballast costs from twelve sources provided by NS in discovery [187] NS generally agrees with DuPont's approach, but argues that it needs to add two ballast sources (one on PA and one in KY) to cover DRR track in the Ohio River Valley. NS obtains quotes from these two additional sources, adds them to the twelve sources provided in discovery and calculates a higher ballast cost than that used by DuPont. NS's addition of two sources is unnecessary and, more importantly, an improper modification of information provided to DuPont in discovery. DuPont is permitted to rely upon data furnished in discovery in developing its Opening evidence. NS is precluded from impeaching the information it provided in discovery. The two suppliers added by NS do not appear in the discovery material provided by NS in response to DuPont's request for ballast costs in the SARR states and should be rejected. As DuPont relied on information provided by NS in discovery, NS is precluded from modifying that information.

In responding to NS's Reply and reviewing ballast costs and calculations, DuPont discovered two errors in its Opening cost calculations. First, DuPont realized that it inadvertently used NS's average ballast cost for 2010 of $9.06 per ton when it should have used NS's average ballast cost for 2009 of {{[redacted]}} per ton[188] since the DRR construction costs are as of 2Q09 A review of NS's Reply workpapers determined that NS used the 2009 price as its starting point before adding the prices for the two additional sources.[189] Therefore, on Rebuttal, DuPont has used the 2009 price without modification. Second, DuPont realized that on Opening it inadvertently used the mainline price per track-foot for ballast instead of the yard and

[187] *See* DuPont Opening e-workpaper "Ballast Purchases.xls" (provided by NS in discovery), tabs "2009" and "2010."
[188] *Id*
[189] *See* NS Reply e-workpaper "Ballast Purchases NS Reply."

set-out track price. As the mainline price is based on higher quantities, DuPont overstated the ballast costs for yard and set-out tracks. DuPont has corrected this on Rebuttal.

NS also disagrees with DuPont's Opening ballast transportation cost. NS first disagrees with the average haul of 100 miles that DuPont used for movement of the ballast from the quarry to the DRR railhead (referred to as "off-line" transportation) and calculates its own average haul of 132.4 miles. NS's average haul includes the improper addition of the two sources discussed above and that alone renders NS's average haul figure unusable NS's average haul is not significantly higher than DuPont's average haul. Under the theory of unconstrained resources, DuPont assumed that there would be sufficient ballast sources on the DRR lines located within an average of 100 miles of the DRR railheads. This is no different than NS's assumptions that "suitable sub-ballast suppliers would be available along the DRR route"[190] with "an assumed 40 mile average delivery distance."[191] For the above reasons, DuPont has continued to rely on its Opening average haul of 100 miles for off-line transportation.

Next, NS claims that DuPont failed to include the costs to transport the ballast from the DRR railhead to the placement location (referred to as "on-line" transportation) because on-line transportation was not included in DuPont's quote for ballast distribution. DuPont agrees with NS and has added NS's 35.7 miles for on-line transportation to the 100 miles for off-line transportation.

NS then rejects DuPont's ballast transportation cost of $0 035 per ton-mile taken from the recent *AEPCO* decision.[192] NS proffers several criticisms of DuPont's material transportation cost and develops its own ballast transportation cost of $0.064 per ton-mile comprised of a quote

[190] *See* NS Reply, p III-F-135
[191] *Id.* p III-F-133
[192] *See* DuPont Opening, p III-F-27.

from a single supplier of $0.072 for off-line transportation and DuPont's $0 035 per ton-mile for on-line transportation.[193] NS's criticisms related to *AEPCO* are misplaced and erroneous.

NS contends that DuPont's evidence is faulty because "it is clear that the Board did not accept use of the $0.035 cost for off-line transportation."[194] In support of its contention, NS relies on two key assumptions, but a careful reading of *AEPCO* shows that NS is wrong on both points

First, NS cites to the Board's statement that AEPCO used a "hardcoded unit price for the off-line transportation costs" and, consequently, NS makes the assumption that the unit price used by AEPCO for off-line transportation was "highly confidential."[195] Evaluation of the Opening Evidence in that case shows that AEPCO used $0 035 per ton mile for off-line ballast transportation.[196] The defendants used this same charge for off-line transportation in their reply.[197] In light of the fact that BNSF/UP accepted the rate of $0 035 for off-line transportation, AEPCO did not mention the off-line transportation cost in its Rebuttal Evidence. While it is true that the Board only states that AEPCO used "a hardcoded unit price for the off-line transportation costs", the Board never explains what, exactly, that hardcoded unit price was. Given that the record clearly shows that both AEPCO and BNSF/UP used $0.035 for off-line transportation, the only plausible interpretation of *AEPCO* is that the ballast transportation costs used by the Board were also based on $0 035 per ton mile.

Second, NS misinterprets the Board's discussion of ballast transportation. NS contends that the Board found $0.035 to be a conservative cost because it would be the cost a railroad

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[193] *See* NS Reply, pp. III-F-129-131

[194] *Id.* p III-F-130

[195] *Id*

[196] *See AEPCO* Opening (Public Version), p III-F-53 (filed Jan 25, 2010) (using $0.035 per ton mile for transportation "from the [ballast] sources to the railheads")

[197] *See* BNSF/UP Reply (Public Version), p III F-54 (filed May 7, 2010) *See also AEPCO* at 100 (Board notes that defendants used the $0.035 figure in their calculations of transportation from the quarry to the railheads).

would charge itself.[198] However, close inspection of *AEPCO* reveals that the Board was not expressing its own view, but, instead, merely summarizing BNSF/UP's argument.[199] NS's Reply is based on a misinterpretation of *AEPCO* and should be rejected.

Furthermore, DuPont notes that NS accepted $0.035 per ton-mile for the transportation of culverts without any objection and used $0.035 per ton-mile for a portion of the ballast transportation cost.

Finally, one of NS's criticisms of the $0.035 per ton-mile cost is that it dates back to 1994. However, DuPont notes that if this cost were indexed using a cost index such as the Rail Cost Adjustment Factor, Adjusted for Productivity ("RCAFA"), the $0.035 is reduced to $0.025.[200]

Based on the above, a cost of $0.035 per ton mile is appropriate for the material transportation costs of the DRR.

For sub-ballast, DuPont used a unit cost of $13.00 per ton from the Trestle Hollow Project. NS complains that the Trestle Hollow Project cost is not representative of the cost the DRR would incur. However, laying sub-ballast is laying sub-ballast whatever the size and location of the project. NS has not shown, nor can it show, that laying sub-ballast for the Trestle Hollow Project was somehow different from what would occur on the DRR. DuPont's delivered cost was for an actual project – not just a random series of quotes. This plainly demonstrates that such unit costs are feasible. In addition, DuPont thoroughly addressed NS's criticisms of the Trestle Hollow Project previously in Section III-F-2.

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[198] *See* NS Reply, p. III-F-130.

[199] *See AEPCO* at 100 (Board states that "[d]efendants argue that although $0.035 per ton mile is a conservative cost (the cost a railroad would charge itself), they use this cost in their calculations").

[200] *See* DuPont Rebuttal e-workpaper "Index of material transportation cost.xlsx."

Furthermore, the sub-ballast unit costs utilized by NS are overstated. NS could have used costs from an actual NS project, as NS has done for other construction costs for the DRR, but instead obtained material price quotes from suppliers that it selected plus the Means Handbook costs for placement As demonstrated throughout this Part III-F, actual project costs are superior to Means Handbook costs. Surely NS has had the occasion to recently purchase and place sub-ballast at some location within the DRR's vast territory.

Finally, DuPont notes that NS did not provide any sub-ballast cost data in its discovery documents In past SAC cases, the unit cost for sub-ballast has generally been lower than ballast since sub-ballast material requirements are less stringent than those used for ballast. Thus, DuPont submits that its $13.00 per ton is conservative in light of NS's actual ballast costs, which are lower than the sub-ballast cost that DuPont is using.

c. Ties

NS accepted DuPont's type and spacing of ties. NS did not accept DuPont's unit cost or transportation cost for ties [201] NS's criticisms are discussed below.

NS rejected DuPont's tie cost and used a cost from a different supplier also included in DuPont's Opening workpapers. DuPont accepts NS's tie cost on Rebuttal.

NS claims that DuPont's tie weight is incorrect and unsupported [202] DuPont disagrees. DuPont used 60 lbs. per cubic foot based on publicly available AREMA specifications shown in Chapter 15, Table 15-1-5 NS should be familiar with AREMA specifications. DuPont continues to use its Opening tie weights on Rebuttal.

NS claims that DuPont's Opening calculation of 450.6 miles for tie transportation is incorrect because it assumes multiple sources while the tie price comes from only one source.

[201] *See* NS Reply, pp III-F-135-138
[202] *Id*, p. III-F-136

NS calculates transportation mileages from one source to all of the DRR railheads [203] NS's restriction of tie sourcing to one location is contrary to the theory of unconstrained resources. There is no reason to believe that other tie manufactures would not match the price the DRR obtained for ties NS did not use one source for ballast or sub-ballast and there is no reason to do so for ties. On Rebuttal, DuPont continues to rely on its Opening miles for the transportation.

Finally, NS rejects DuPont's use of $0.035 per ton-mile for transportation costs and used a quote of $0.0874 per ton-mile. As discussed previously, DuPont's cost is appropriate and DuPont continues to use it on Rebuttal.

d. Track (Rail)

i. Specifications

NS accepted DuPont's rail specifications for the DRR.[204]

ii. Rail Pricing

NS accepted DuPont's rail price per ton from Schedule 724 of NS's 2009 R-1 but added transportation costs from the manufacturer to the DRR railheads. NS also adds rail unloading costs that it claims were not included in DuPont's costs. Each of these claims is discussed below.

NS claims that DuPont failed to consider that the price from the R-1 did not include transportation over NS rail lines. NS is incorrect. DuPont was fully aware on Opening that "[t]he cost of unloading, hauling over carrier's own lines, and placing the rails in tracks and of the train service in connection with the distribution of the rail" is not included in the cost per ton shown in Schedule 724.[205] DuPont was also fully aware that the cost includes "the cost of

[203] *Id.* pp III-F-137-138
[204] *Id.* p III-F-139
[205] *See* DuPont Opening e-workpaper "Norfolk Southern Combined Railroad Subsidiaries 2009 R-1.pdf" at page 89.

loading at the point of purchase ready for shipment, the freight charges paid foreign lines, and the cost of handling rails in general supply and storage yards."[206]

By adding transportation costs from the manufacturer to the DRR railheads, NS is creating a double-count of costs by adding freight charges paid foreign lines which are already included in the price. NS attempts to justify its additional transportation cost by claiming "NS obtains substantial amounts of rail from suppliers located on or near its lines "[207] However, NS provided no support for this statement as it did not identify any of its rail sources nor their locations in relation to NS's rail lines Furthermore, the R-1 does not identify any rail sources nor show any distances over foreign rail lines. Absent any evidence supporting NS's claim, DuPont continues to utilize the R-1 rail price (which NS accepted) and rejects NS's double-count of foreign line transportation costs [208]

NS also adds rail unloading costs that it claims were not included in DuPont's costs. Specifically, NS added costs for the rental of a rail train for transport from the DRR railhead to placement location and unloading plus the cost of a work train crew to assume the operation of the train for the duration of the unloading On Rebuttal, DuPont has accepted NS's cost for these items of $1 92 per track-foot.

iii. Field Welds

NS accepted DuPont's unit price for field welds. However, NS claims that DuPont understated the number of required field welds by failing to include welds for "cutting in road

[206] *Id*

[207] *See* NS Reply, p III-F-139

[208] On Opening, DuPont did include a small amount of foreign line transportation costs which, in retrospect, should not have been included. However, DuPont has continued to include these costs on Rebuttal

crossings, insulated joints, diamond crossings, and turnouts, and the final assembly of individual panels that make up the completed panelized turnouts "[209]

DuPont determined that, on Opening, field welds for insulated joints and diamond crossings were not included. However, NS is incorrect in stating that DuPont failed to include field welds for cutting in road crossings and turnouts. DuPont's Opening cost for road crossings includes the required field welds needed DuPont's Opening cost for turnouts reflects the complete installed price per turnout.

On Rebuttal, DuPont has added the costs for field welds for both insulated joints and diamond crossings

iv. Insulated Joints

Insulated joints are addressed in Part III-F-6 below.

v. Switches

NS accepts DuPont's specifications and unit costs for turnouts and switch heaters but disagrees with DuPont's transportation costs [210] On Rebuttal, DuPont has accepted NS's turnout weights. However, for reasons discussed previously, DuPont disagrees with NS's transportation unit cost and continues to use $0.035 per ton-mile for transportation costs Differences in total costs are also caused by NS's inflated turnout count caused by overstatements in route miles, yard tracks, work sidings, set-out tracks and interchange tracks as discussed in Part III-B

[209] *See* NS Reply, p III-F-144.
[210] *Id*, pp III-F-144-148

c. Other

i. Rail Lubricators

NS accepts DuPont's rail lubricator unit price but disagrees with DuPont's spacing and count of lubricators and claims that DuPont's unit price does not include the costs for shipping, a protective mat and installation.[211]

On Rebuttal, DuPont has accepted NS's rail lubricator locations based on the track charts for the rail lines of the DRR. DuPont has also accepted NS's unit costs for shipping, a protective mat and installation.

ii. Plates, Spikes and Anchors

NS accepts DuPont's specifications and unit costs for plates, spikes and anchors. However, NS disagrees with both DuPont's transportation distances and transportation unit cost.[212]

NS claims that DuPont failed to include the miles from the DRR railhead to the placement location On Rebuttal, DuPont has accepted the additional transportation miles included by NS.

NS claims DuPont's transportation unit cost is incorrect and uses a quote of $0.0906 per ton-mile instead. For reasons discussed previously, DuPont disagrees with NS's transportation unit cost and continues to use $0.035 per ton-mile for transportation costs.

iii. Derails and Wheel Stops

NS accepts DuPont's proposed retractable derail for yard locations and the unit cost but claims that this derail is not adequate to protect main line track. NS claims that double switch point derails are needed to protect mainline track from cars rolling onto the mainline. NS

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[211] *Id.* pp. III-F-148-150
[212] *Id.* p. III-F-150

developed the unit cost for the double switch point derail using a price quote in DuPont's Opening workpapers supplemented with switch stand costs produced by NS in discovery. NS developed installation costs using a percentage of DuPont's turnout installation costs and developed shipping costs based on its overstated transportation cost for turnouts.[213]

On Rebuttal, DuPont has accepted NS's use of double switch point derails to protect the mainline at set-out track locations and NS's unit cost.

For wheel stops, NS accepted DuPont's unit cost but increased the quantity. On Rebuttal, DuPont has accepted NS's number of wheel stops.

iv. Crossing Diamonds

NS claims that DuPont failed to include costs for crossing diamonds. To remedy this, NS developed an inventory of crossing diamonds by various types and applicable costs.[214]

On Rebuttal, DuPont has accepted NS's count and costs for crossing diamonds.

v. Materials Transportation

Transportation costs are assigned to each item As such, no additional transportation costs have been added by the parties.

vi. Track Labor and Equipment

NS accepted the labor costs proposed by DuPont on Opening However, NS suggests that the labor costs are based on track materials being delivered to the location where they are to be placed in the track. Therefore, NS added costs to transport materials from the DRR railheads to the installation locations to the prices of the materials plus costs for transporting and unloading rail.[215] DuPont has addressed NS's additional costs where NS included them.

[213] *Id*, pp III-F-150-152.
[214] *Id*, pp III-F-153-155
[215] *Id*, p III-F-156.

4. Tunnels

On Opening, DuPont derived its tunnel inventory and tunnel lengths from materials provided by NS in discovery.[216] On Reply, NS agreed with DuPont's tunnel inventory with one exception. NS added a 268-foot tunnel at Shawsville, Virginia which was open cut in 1990.[217] DuPont rejects the addition of this tunnel. NS did not identify this tunnel on the tunnel list it provided in discovery, it does not appear on NS's track charts and NS did not inform DuPont in discovery that this tunnel had been open cut. DuPont is dependent on NS to provide information in discovery regarding its system and had no way of knowing anything about this tunnel unless NS provided the information. NS cannot provide this information for the first time on Reply. Therefore, DuPont does not add this tunnel to its tunnel inventory.

NS's identification of double-track tunnels is correct and DuPont accepts NS's unit costs for tunnel construction. On Rebuttal, DuPont accepts NS's total costs for tunnel construction minus the cost for the Shawsville Tunnel for a total of $1,081 million.[218] NS also included a $10 million additive to tunnel construction costs for work during the winter months. As discussed later in Section III-F-12, this additive is unnecessary and DuPont has not included it.

5. Bridges

On Opening, DuPont's bridge engineer, Mr. Crouch, provided for a variety of bridge types and designs to accommodate the bridges being built by the DRR. Consistent with the approach used in other SAC cases, bridges were categorized into types and built to a general specification for that bridge type (some bridges incorporated multiple span types into a single bridge).[219]

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[216] *See* DuPont Opening e-workpaper "DRR Tunnels.xlsx."
[217] *See* NS Reply, pp. III-F-156-157.
[218] *See* DuPont Rebuttal e-workpaper "DRR Tunnels Rebuttal.xlsx."
[219] *See* DuPont Opening, pp. III-F-33-38.

NS takes issue with DuPont's inventory, bridge designs, costs and approaches. The differences in DRR bridge costs are discussed below.

a. Bridge Inventory

DuPont's Opening bridge inventory for the DRR included 5,172 railroad bridges at 3,589 locations[220] and 151 highway overpasses.[221] On Reply, NS included 5,970 bridges at 3,933 locations on lines owned 100% by NS and 447 bridges at 182 locations on the "Partially Owned Lines."[222] NS accepted DuPont's 151 highway overpasses on lines owned 100% by NS but added 41 highway overpasses on the "Partially Owned Lines."[223] NS's bridge inventory included bridges less than 20-feet in length over roads at those locations where DuPont replaced these bridges with culverts. NS's bridge inventory also reflected the correction of the classification of three (3) bridges from standard bridges to movable bridges and the removal of two (2) bridges that NS does not own.

DuPont has accepted the bridges less than 20-feet in length over roads and included these bridges as Type 1 bridges. DuPont has also added a few other bridges that were inadvertently omitted on Opening, including one special bridge. As discussed in Part III-F-13, DuPont has not included the Partially Owned Lines in the constructed miles of the DRR and therefore has not included the bridges and highway overpasses on the Partially Owned Lines in its Rebuttal bridge counts. DuPont has accepted NS's classification of three (3) additional moveable bridges and the removal of two (2) bridges not owned by NS.

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[220] At locations with multiple main tracks, DuPont constructed separate bridges for each main track.
[221] *See* DuPont Opening e-workpapers "Bridge Construction Costs errata xls" and "Over Head Bridge Construction Costs xls."
[222] *See* NS Reply e-workpaper "Bridge Construction Costs errata Reply xls."
[223] *Id*

On Rebuttal, DuPont has included a total of 5,806 bridges. As DuPont and NS have bridges at the same locations, the difference is caused by differences in the number of tracks at some locations due to the differences in the parties' respective facility plans

In addition to bridge inventory issues, NS addresses other criticisms of DuPont's Opening evidence in this section. Specifically, NS criticizes DuPont's bridge heights, bridge lengths and the number of tracks at various bridge locations.[224] NS's criticisms are addressed below.

NS's primary criticism pertains to DuPont's bridge heights. On Opening, DuPont used estimated bridge heights and pier heights because NS provided only *maximum* bridge height for the majority of bridges[225] instead of the *actual* bridge height requested by DuPont in discovery. On Reply, NS used the maximum height information to estimate bridge abutment and pier heights.[226] NS developed bridge pier heights by assuming the maximum bridge height equaled the maximum pier height. NS admits that, in the case of exceptionally tall bridges, the piers actually vary in height within a single bridge, thus NS uses varying pier heights.

DuPont's engineers maintain their opening approach of using an average pier height for the bridges replicated on the DRR as NS significantly overstates the height of each pier by using the maximum bridge height.[227] In fact, maximum height is an overstatement for every single pier that NS includes because maximum height is measured from the top of the rail to the lowest point on the ground surface below the bridge.[228] At a minimum, the maximum height would

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[224] *See* NS Reply, pp. III-F-171-182.

[225] NS admits that it did not provide *any* height information (maximum or otherwise) for over 12 percent of the bridges shown on the bridge list provided to DuPont in discovery. For these bridges, NS accepted DuPont's bridge height estimates. *See* NS Reply, p. III-F-172, note 271.

[226] *See* NS Reply, pp. III-F-176-177.

[227] *See* DuPont Rebuttal e-workpaper "Maximum Height v Pier Height.pdf" which shows how maximum bridge height does not equate to pier height

[228] Maximum height is different than bridge clearance height. Bridge clearance height is measured from the bottom of the superstructure. Bridge clearance distance is closer to pier height than maximum bridge height

need to be reduced by the distance from the top of the rail to the bottom of the bridge superstructure (a distance ranging from five to ten feet depending on the bridge superstructure) to even estimate the maximum height of the pier [229] Under NS's scenario, this further assumes that the pier is placed at the location of the maximum height. NS has provided no evidence that all piers are always placed at the location of the bridge maximum height. A least-cost most-efficient railroad such as the DRR would certainly not design its bridges in that manner.

To further address this bridge height issue, DuPont analyzed NS's Reply bridge list (excluding exceptionally tall bridges over 65 feet in height and special bridges) to determine NS's average maximum height for bridge Types I, II and III Based on NS's bridge list, the average maximum bridge height is 16.25 feet for Type I bridges, 17.10 feet for Type II bridges and 21.12 feet for Type III bridges [230] Subtracting the distance from the top of the rail to the bottom of the bridge superstructure of 5.69 feet for Type I bridges, 5.98 feet for Type II bridges and 9.23 feet for Type III bridges[231] results in average NS pier heights of 10 56 feet for Type I bridges, 11 12 feet for Type II bridges and 11 89 feet for Type III bridges. These pier heights are well within the 11-foot to 16.5-foot pier height range used by DuPont on Opening.[232]

DuPont's engineers, however, accept, with modifications, NS's pier heights for exceptionally tall bridges (bridges over 65 feet in height) For exceptionally tall bridges, NS assumed that, for bridges with three or more piers, 25 percent of the piers would equal the maximum height, 25 percent would equal 75 percent of the maximum height, 25 percent would equal 50 percent of the maximum height and 25 percent would equal 25 percent of the maximum

[229] *See* DuPont Rebuttal workpapers, sub-directory "Bridge Photos" for pictures showing the difference between maximum bridge height and pier height.
[230] *See* DuPont Rebuttal e-workpaper "NS Average Bridge Height for Bridge Types I_II_III.xlsx."
[231] *See* DuPont Rebuttal e-workpaper "Bridge Superstructure Height pdf."
[232] *See* DuPont Opening, p III-F-34

height.[233] NS has provided contradictory pier height evidence in its tall bridge workpapers, showing that typical exceptionally tall bridges have a few tall piers and the approach spans are all much shorter, i.e., the piers for the approach spans are much closer to the end of the bridge than the center of the bridge.[234] For exceptionally tall bridges with three or more piers, DuPont's engineers have taken a conservative approach and assumed the maximum bridge height for 25 percent of the piers and 25 percent of the maximum bridge height for the remaining 75 percent of the piers, even though, as demonstrated above, maximum height always overstates pier height.

NS also criticizes DuPont's bridge lengths, claiming that DuPont overstated bridge lengths by misinterpreting the NS bridge data provided in discovery.[235] DuPont has reviewed NS's workpapers and concurs that bridge length was overstated for some of the DRR bridges. DuPont has corrected this on Rebuttal.

NS claims that DuPont assigned incorrect and inconsistent numbers of tracks to various bridge locations.[236] DuPont has corrected this on Rebuttal

b. Bridge Design and Cost Overview

As DuPont noted on Opening, Mr. Crouch was a Project Engineer for NS where he was responsible for engineering design and plan review, the bid phase, and the construction engineering phase for track and bridge construction projects. As head of Crouch Engineering, Mr. Crouch has been responsible for the design and construction of numerous concrete and steel bridges, as well as the inspection and rehabilitation design for hundreds of steel, concrete, masonry, and timber bridges for Class I and short-line railroads. Given his experience, Mr.

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[233] *See* NS Reply, p. III-F-214

[234] *See*, for example, NS Reply e-workpaper "NS DuPont Special Bridges Exhibit (9_29_12).pdf," p. 4 showing the bridge over the Ohio River at Cincinnati, OH

[235] *See* NS Reply, pp. III-F-177-178.

[236] *Id.* pp. III-F-178-179

Crouch is well aware of the DRR's bridge requirements and how to design bridges to meet those requirements.

NS claims that that there are several problems with DuPont's bridge designs. NS's specific criticisms are addressed below in the appropriate section

i. Cost Overview

Despite all of NS's railings against DuPont's improper bridge component costs, NS accepts DuPont's base unit costs used for bridge components.[237] However, NS erroneously adjusts DuPont's bridge and highway overpass unit costs (from projects in Tennessee and Florida) by the Means Handbook location factor.[238] The Means Handbook location factor is used in roadbed preparation to adjust costs from the Means Handbook to approximate costs in various regions of the country. The Means Handbook location factor is applicable to costs from the Means Handbook because the costs shown are national averages. The Means Handbook location factor is not applicable to DuPont's unit costs for at least three reasons

First, and foremost, DuPont's unit costs are not national averages taken from the Means Handbook. Second, DuPont's unit costs are from actual projects. Third, NS has provided no evidence that the unit costs used by DuPont (and accepted by NS) would be different for similar projects in other locations of the country. NS's application of the Means Handbook location factor to non-Means Handbook unit costs is improper and must be rejected.

NS generally rejects DuPont's quantities for bridge costs primarily due to issues with bridge heights. NS also criticizes DuPont's substructure designs and costs for special bridges, including movable bridges, bridges over major rivers and navigable waterways, and exceptionally tall bridges. NS's criticisms are addressed in the relevant sections below.

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[237] *Id.* p III-F-183.
[238] *Id.*

ii. Bridge Design

(1) Superstructure Design (Spans)

Not confining its comments in this section to just superstructure, NS criticizes DuPont for how it designed and developed costs for standard superstructure span types, uniform standard substructure piers and a single uniform standard abutment which results in the same piers and abutments used for bridges of the same assumed height regardless of span length. NS claims that DuPont's approach results in mismatches between bridge superstructure and substructures that would render DRR bridges infeasible and unsafe [239]

DuPont's engineers have provided bridge designs based on real-world engineering projects with differing span lengths that have been constructed and are still in use today. The difference in superstructure depth caused by different span types is accounted for with step caps [240]

NS states that in order to correct DuPont's approach, NS separated the DRR bridge inventory into categories (Type I, Type II, Type III, Type IV, Bridges with Multiple Span Types and Special Bridges) allowing for the substructure parameters to be matched to the type of superstructure to be supported.[241] NS did not do anything different than what DuPont did other than separate the bridges into different tabs of its spreadsheet.

Despite its criticisms, NS accepts the superstructure designs proposed by DuPont for all of the Type I, Type II, Type III and Type IV spans [242]

NS next claims that DuPont fails to show that the standard substructure units (piers and abutments) have the load capacity necessary to support the various superstructure span types.

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[239] *See* NS Reply, p III-F-186

[240] *See* DuPont Opening e-workpaper "Bridge Construction Costs errata.xls." *See* also DuPont Rebuttal e-workpaper "Bridge Construction Costs Rebuttal xls."

[241] *Id.* pp. III-F-186-187.

[242] *Id.* p III-F-187.

NS provides an example of how a Type III girder, with a width of 16 feet, would not fit on the 12-foot wide pier cap for the standard 11-foot tall pier proposed by DuPont. NS claims that AREMA guidelines would require the pier cap to be a minimum of 17 feet wide.[243] DuPont acknowledges that the drawing NS refers to shows a pier cap size of 12 feet wide[244] but the calculations used by DuPont to design and develop the cost of the pier utilize the correct pier cap dimensions that have the ability to handle the size requirements necessary to construct the DRR's bridges.[245]

Finally, NS claims that DuPont's bridge designs omit spans over major waterways that would meet U S. Coast Guard ("USCG") horizontal and vertical clearance requirements. NS points to an example where DuPont used 90-foot spans where a 480-foot through truss is necessary.[246] On Rebuttal, DuPont has accepted the longer spans and the costs for these spans as developed by NS.

(2) Substructure Design (Piers and Abutments)

NS claims that there are two problems with DuPont's substructure designs – the standard pier details do not properly account for bridge height nor do they account for differing span lengths In addition, DuPont failed to perform any engineering calculations.[247]

Bridge height has already been addressed DuPont's Opening substructures were designed for 286,000 lbs. gross car weights, which is the industry standard, in accordance with AREMA specifications, and are currently in use in real-world applications. Furthermore, DuPont's Opening bridge workpapers included engineering calculations[248] Therefore, DuPont's

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[243] *Id,* pp III-F-187-188
[244] *See* DuPont Opening e-workpaper "Type III_Photos and Plans pdf"
[245] *See* DuPont Opening e-workpaper "Bridge Construction Costs errata xls," tab "Pier Concrete Quantities."
[246] *See* NS Reply, pp 188-189.
[247] *Id,* pp. III-F-189-192
[248] *See* DuPont Opening e-workpapers "Type I_Photos and Plans.pdf," "Type II_Photos and Plans pdf," "Type III_Photos and Plans pdf," "Type IV_Plans and Photos pdf"

bridge designs are realistic and feasible. NS fails to provide any evidence that the substructures used by DuPont are not adequate. As discussed later in this section, NS has proposed unnecessarily large and over-designed piers .

iii. Type I Bridges

NS accepts DuPont's designation of Type I bridges being made up of Type I spans ranging from 20 to 32 feet in length. NS corrected the number of piles for the Type I bridge abutment from six to four[249] DuPont disagrees with this correction. DuPont included six piles in its bridge cost calculations.[250] DuPont's designs are currently in use in existing bridges.[251] Furthermore, NS has provided no evidence that DuPont's abutments are inferior.

For Type I piers, NS accepted DuPont's standard pier details for the 11-foot, 14.5-foot and 16.5-foot piers. For Type I bridges with pier heights exceeding 16.5 feet, NS designed new piers for heights of 20 feet, 25 feet, 35 feet, 45 feet, 55 feet and 65 feet NS relied on DuPont's standard pier details adjusting only for height unless physical requirements or other analysis dictated a change NS also modified the concrete quantities for all piers to reflect that the top of the pier footings must be at least two feet below the ground line.[252]

As discussed above, DuPont does not agree with NS's pier height calculations. NS's claim that the top of the pier footings must be at least two feet below the ground line is misleading. When building a bridge, the contractor will excavate out to rock or construct the footing on piles in order to build the pier footings and pier column.[253] Once the contractor has built the footings and piers, he will mound two feet of dirt on the footing so that water will drain

[249] *See* NS Reply, pp III-F-192-193 DuPont referenced six piles in its Opening evidence but the CSXT design used in DuPont's workpapers includes only four piles. NS asserts that four piles provide adequate support

[250] *See* DuPont Opening e-workpaper "Bridge Construction Costs errata xls," tab "Abutment Piles," cell C6

[251] *See* DuPont Opening e-workpapers "Type I_Photos and Plans.pdf" for a bridge in Huntsville, AL; "Type II_Photos and Plans pdf" for a bridge in McKenzie, TN; "Type III_Photos and Plans.pdf" for a bridge in Brace, TN, and "Type IV_Plans and Photos pdf" for a bridge in Wilson County, TN.

[252] *See* NS Reply, pp III-F-192-195.

[253] In DuPont's bridge designs, all piers are constructed on piles.

away from the footing. This is typical in railroad bridge construction. There cannot be frost heave with a concrete footing poured on rock because there is no soil to freeze and expand. Regardless, the topsoil placed over the top of the footing protects the footing from frost effects

iv. Type II Bridges

NS largely accepts DuPont's Type II bridge design and designations. NS made the same modifications to its Type II bridge abutment design as the Type I bridge abutment design. As all Type II bridges are single span, no bridge piers are needed.[254]

On Rebuttal, DuPont has rejected NS's modifications to the Type II bridge abutment design. As discussed above, DuPont's abutments are sufficient as they include six piles and are currently in use in existing bridges.

v. Type III Bridges

NS accepts DuPont's designation of Type III spans ranging from 60 to 92 5 feet in length.[255] However, NS takes issue with DuPont's abutments and piers.

NS claims that the standard CSXT abutment used by DuPont is inadequate for Type III bridges regardless of whether it has four or six piles. NS redesigned the Type III bridge abutment, adjusted the quantities of concrete, steel piling and pile tips and used the unit costs proposed by DuPont.[256]

NS also claims that DuPont's Type III piers are insufficient for previously discussed reasons – DuPont did not account properly for bridge heights and the pier parameters were not tailored to Type III spans. NS developed the same standard piers for the same range of heights

[254] *See* NS Reply, p. III-F-195.
[255] *Id.* p. III-F-195
[256] *Id.* pp III-F-196-198

as Type I spans but they reflect different details and quantities specifically tied to the design loads of a longer Type III span [257]

As discussed previously, DuPont does not agree with NS's bridge height calculations for piers DuPont's bridge abutments and piers were designed in accordance with AREMA specifications and are in use in real-world applications [258] NS did not submit any calculations demonstrating that the designs proposed by DuPont for abutments and piers are inadequate, only that a different design could also be used.

In addition to the errors and overstatements introduced by NS in its calculation of pier heights and costs based on its erroneous use of maximum bridge height, NS's piers include overstated and unnecessary amounts of concrete and reinforcing steel DuPont has found five (5) examples of how NS over-designed its piers with regard to the required factor of safety. In one of the examples, NS's design of a 41-foot tall pier, NS's quantities result in a pier that exceeds the required factor of safety by thirty-eight (38) times.[259] DuPont has also identified another example of how NS's calculations result in overstated pier costs When evaluating the piles needed for its bridge piers, NS, without explanation, reduced the allowable stress limit below that contained in AREMA recommendations resulting in the need for more or larger piles which results in a larger pier footing requiring more concrete.[260] All of these increases result in unnecessary cost increases. Clearly, the pier designs proposed by NS are not the lowest cost feasible designs since NS's piers are significantly overdesigned.

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[257] *Id*, pp. III-F-198-199

[258] *See* DuPont Opening e-workpapers "Type I_Photos and Plans.pdf," "Type II_Photos and Plans pdf," "Type III_Photos and Plans.pdf," "Type IV_Plans and Photos pdf."

[259] *See* DuPont Rebuttal e-workpaper "Examples of NS Over-designed Piers.pdf."

[260] *See* DuPont Rebuttal workpaper "NS Pier Stress pdf." NS sources AREMA Chapter 8, 4 4 3 for the "pile allowable stress." AREMA specifications are 12,600 psi but NS uses, without explanation, only 9,000 psi The lower stress limit results in the need for more or larger piles.

NS's abutment design also unnecessarily results in increased costs. For example, NS uses A36 steel (36,000 psi) for its piles in its abutment design.[261] The American Institute of Steel Construction's ASTM Specifications call for A572 Gr. 50 (50,000 psi) as the preferred material specification,[262] which is what DuPont used.[263] Using A36 steel causes costs to increase for two reasons First, A36 steel is a special order from the steel mills and is more expensive than A572 Gr. 50 steel, which is what the steel mills normally produce Second, using a lesser steel in the abutment requires more steel which increases steel costs as well as the concrete costs

vi. Type IV Bridges

After removing the bridges classified as Types I, II and III, and excluding the multiple span and special bridges, NS claims that there is only one bridge on the DRR that DuPont proposed to replicate solely with Type IV spans DuPont's Type IV abutment suffers from the same deficiencies as its Type III abutment so NS made the same modifications as it made to the Type III abutment. DuPont's standard pier details were found to be insufficient for Type IV design loads so NS made the necessary modifications.[264]

As discussed above under Type III bridges, DuPont's bridge abutments and piers are sufficient for the DRR's bridges, and supported, while NS's designs are grossly overstated.

vii. Bridges with Multiple Span Types

DuPont proposed to replicate a limited number of bridges with more than one superstructure type NS evaluated each of these bridges individually, modifying the costs as

[261] *See* DuPont Rebuttal e-workpaper "NS Over-design of Abutments pdf"
[262] *Id*
[263] *See* DuPont Opening e-workpapers "Type II_Photos and Plans pdf," "Type III_ Photos and Plans pdf" and "Type IV_Plans and Photos pdf"
[264] *See* NS Reply, pp. III-F-199-201

necessary by matching the required abutments and piers to the span type and the height of each bridge.[265]

NS did not do anything different than DuPont other than use its modified abutments and piers which DuPont has already addressed.

viii. Special Bridges

(1) Movable Bridges

DuPont accepts NS's changes to the list of movable bridges that DuPont presented in Opening in order to minimize the differences between the parties.

Movable bridges consist of two components The first is the movable span. The second component is the fixed approach spans leading to the movable span. Each of these components is discussed below.

In Opening, DuPont used a cost from a recent SAC proceeding to develop the cost per foot for the movable span component of the DRR movable bridges.[266] NS accepts DuPont's cost per foot but only for bascule spans.[267] For vertical lift spans, NS relies on the cost of a CSXT Railroad lift bridge developed in a 2006 Value Engineering report [268]

DuPont has reviewed NS's bridge cost calculations and supporting documentation and demonstrates in the thirteen (13) bullets below why NS's selection of a CSXT project as the basis for costs of vertical lift spans is improper.

> CSXT Railway was replacing an existing swing span bridge with an existing horizontal clearance of 146'-7", with a proposed, new, vertical lift span with a

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[265] *Id.* pp III-F-201-202.

[266] *See* DuPont Opening e-workpaper "Moveable Span Cost pdf," page III-F-107, where the cost of a 775-foot bridge with a 170-foot bascule span is shown at $8,336,800 in 1994 Assuming conservatively that 75% of the cost is for the bascule span, and indexing from 1994 to 2009, the cost per foot used by DuPont is $62,991 per foot. In that same workpaper, at page III-F-108, costs for a vertical lift span are shown to be less than the costs for a bascule span. To be conservative, DuPont used the higher bascule span costs for all movable spans *See also*, DuPont Opening e-workpaper "Bridge Construction Costs errata xls," tab "Special Bridges."

[267] *See* NS Reply, p III-F-206

[268] *Id.* p. III-F-205

proposed horizontal clearance of more than twice the existing clearance. Depending on the length of the bridge span over the navigable waterway, DuPont uses a bascule type drawbridge span or a vertical lift bridge span. DuPont explained that the movable span bridge costs are higher, thus the reason for using only one cost per foot There are current lift span locations that must be replicated DuPont replaced these with lift spans using the higher (conservative) cost of Bascule Spans on a per track foot basis.

This was a project on the CSXT railroad, and HNTB was the firm doing the workpaper for value engineering. This bridge is not on the DRR, but might have been representative of reasonable costs if the construction were new, but the costs presented were for retrofitting of an existing bridge.

HNTB explained that, because of the limited time allowed to foul the track, a portion of the work was to be performed off-site. The additional costs were not quantified This is an example of the introduction of unreasonable tasks and costs associated with constructing a replacement bridge on an active railroad line has compared to new construction The costs for this off-site work are not explained, but would be unreasonable and unrealistic for new bridge construction. The off-site work and limited track time would add costs to the construction of the lift span.

There is no discussion, or separation, of items in the "Bid" that would allow NS or DuPont to separate the additional costs of construction in a "new" movable bridge construction project, versus an "under traffic" "replacement" project, which has its own unique set of additional challenges and costs mentioned above. The costs presented by HNTB are unrealistic and are unsupported for only new construction, as is required on the DRR.

This bridge cost is based on replacing an existing structure, in place, under traffic, which is many more times expensive than new construction Because this bridge was constructed under traffic as a replacement, and not as new bridge construction, it cannot logically be the least feasible cost for new bridge construction

The bridge clear span is being increased using funds from the U.S Coast Guard based on requirements of the Truman Hobbs Act. This confirms that this is an existing bridge, and that the existing clearance has been in use. Increasing the horizontal clearance should not be a requirement for the DRR since the existing structure, unimproved, was satisfactory for decades

There was no attempt made by the NS experts, or HNTB, to illustrate the additional costs, or differences in cost, of constructing a completely new lift span compared to the cost of constructing a lift span replacement bridge, under traffic, where an existing bridge has to be demolished, and a new bridge constructed, partially off-site, and in phases, with very limited access and track time windows

> The proposed lift span was longer than the existing movable span of the existing bridge, therefore, there were additional piers required to be removed and new piers constructed, under traffic
>
> The proposed construction was to be performed around existing bridge piers and the track and bridge superstructure, which would not be necessary for the DRR's lift spans.
>
> Construction costs were much higher because of limited work windows since there were 20 trains per day on that active CSXT line. The contractor would have to increase its labor, equipment, and supervision, and related costs based on having limited work windows and not being able to work without interruption.
>
> The existing swing span bridge had to be able to operate during and after the construction of the vertical lift towers, necessitating incremental work, phasing of work, phasing of demolition, and other tasks and their related costs that would not be included in the cost to construct a new bridge (not under traffic on an existing heavily used railroad main line). The HNTB costs presented are unrealistic for new bridge construction
>
> There was no separation of additional costs for flagging, smaller track time windows, working on a portion of the project off-site, higher mobilization costs, and multiple mobilizations, demolition costs, the cost of phasing work on the active railroad bridge, the cost of keeping the swing span in operation during the project, etc
>
> Using this project as a basis for costs on the DRR is unrealistic, not feasible, and illogical since it is a "replacement project" under traffic and not a "new bridge construction project " All costs will be higher since there are limits with respect to fouling the track, permission for track time and work windows, demolition costs, flagging costs, and other costs related to working around an existing structure. The DRR *is being constructed new, without the addition complexities and costs of* replacing a bridge under traffic.

In Rebuttal, DuPont has continued to rely on its Opening movable span cost per foot as NS accepted it for bascule spans and, as noted above, DuPont's opening workpapers demonstrate that the bascule span cost is higher than the vertical lift span cost.

NS objects to DuPont's assumption that the DRR would pay a 10 percent cost share for movable bridges on the constructed system.[269] NS feigned ignorance regarding DuPont's rationale and support for its assumed 10 percent cost share, portraying it as undocumented and

[269] *See* NS Reply, p III-F-206.

unknown.[270] However, NS includes a four page discussion on the precise rationale and support on which DuPont's assumptions lie.[271] In its four-page discussion, NS offers several flawed, incomplete, and invalid arguments for why DuPont's assumed construction cost sharing arrangement should be rejected. Each is discussed separately below.

NS claims that the Truman-Hobbs Act "is the only government funding mechanism currently in place for the sole purpose of aiding bridge owners with replacement of movable structures."[272] DuPont agrees with this statement, as it pertains to Federal funding.[273] NS attempts to downplay the viability of the mechanism as a bridge funding source, stating that, "from the inception of the Truman-Hobbs Act in 1940 until July 2012, Truman-Hobbs Act funding has been used for only 27 bridges."[274] However, in 2009, the same year the DRR commences operations, Congress passed and the President signed the American Recovery and Reinvestment Act of 2009. This act authorized billions of Federal funding for transportation infrastructure projects, including $142 million earmarked specifically to fund movable bridge replacement under Section 6 of the Truman-Hobbs Act.[275] The DRR would have been ideally suited to take advantage of this Federal funding stream, as did other Class I railroads. According to a 2009 BNSF press release, "Work has begun to replace BNSF Railway's 118-year-old swing span over the Mississippi River at Burlington, IA... Construction of the lift span is being financed in part through the American Recovery and Reinvestment Act of 2009 and previous year appropriations under the Truman-Hobbs Act."[276] NS argues that the DRR cannot benefit

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[270] *See* NS Reply, p. III-F-207.
[271] *Id.* pp. III-F-208-211.
[272] *Id.* p. III-F-208.
[273] NS spends a great deal of time discussing the Truman-Hobbs act, but ignores funding that comes from state and local agencies.
[274] *See* NS Reply, p. III-F-208.
[275] *See* ARRA2009 at page 49; available online at http://www.gpo.gov/fdsys/pkg/BILLS-111hr1enr/pdf/BILLS-111hr1enr.pdf.
[276] http://www.bnsf.com/media/news-releases/2009/september/2009-09-23a.html (accessed April 8, 2013)

from the application of the Truman-Hobbs Act because, "the incumbent railroad presumptively bore the full cost of constructing its movable bridges." NS further argues that the Complainant must "produce evidence showing the [incumbent] railroad did not pay 100% of the cost of its movable bridges," for it to pay "anything less than 100% of the cost of those bridges,"[277] regardless of any governing laws that may have changed over the years This argument is self-serving and the logic behind it is deeply flawed. In fact, NS's own arguments in support of this point contradicts its own thesis.

NS states that, "because Truman-Hobbs was enacted in June 1940, any movable bridge built or modified before that time could not possibly have received funding under that Act."[278] NS argues that this should disqualify the DRR from taking advantage of the Truman-Hobbs Act in 2009, because the incumbent could not have benefitted from the Act at the time of the original construction. This is a clear barrier to entry NS is entitled to Truman-Hobbs Act funding in 2009 for all existing movable bridges, so the DRR must also be entitled to the same access in 2009 The laws of the 1930's have no bearing on present-day SAC analysis.

NS's argument fails on several counts. NS acknowledges that a SARR must replicate the portions of the incumbent's system, including bridges, that are required to serve the issue traffic, but NS contradicts itself in stating that the DRR bridges do not replace NS bridges.[279] NS inappropriately attempts to restrict the DRR's access to an existing federally funded program because some bridges were originally constructed before the program's inception However, the

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[277] *Id.* pp III-F-209-210

[278] *Id.* p. III-F-210

[279] NS opines that the SARR bridges would not be eligible for funding under the Truman-Hobbs Act because the Truman-Hobbs Act covers alteration and replacement of existing structures whereas the SARR bridges would be considered new construction, not replacements NS fails to recognize that the entire SARR is a replacement for the incumbent system, including all bridge structures Although the DRR does not own the existing structures in the real world, it is replacing them in the hypothetical SAC analysis NS's own language supports this position Specifically, NS states, "the [original] movable bridge is what the SARR must replicate." *See* NS Reply, p III-F-209. The DRR cannot replicate the original bridge without replacing it.

program was designed explicitly to replace bridges from another era, and there are no such restrictions placed on NS or any other railroads eligible for funding through the program. NS seeks to impose an entry barrier on the DRR by limiting its access to a federal program to which NS has access and from which NS has drawn federal funds

The fact that the DRR is a replacement carrier for the NS is supported by both STB precedent and the underlying theory of Contestable Markets. In discussing the concept of barriers to entry in *WTU*, the Board stated that the definition of barrier to entry must comport with the Board's regulatory purpose of constraining a railroad from monopoly pricing [280] To this end, the STB decided that the SARR is a replacement carrier that steps into the shoes of the incumbent carrier for the segment of rail system the SARR would serve [281] The fact that a SARR "steps into the shoes" of the incumbent as a replacement for, and not a competitor to, the existing railroad provides the SARR with the ability to provide a constraint to the existing railroad from monopoly pricing.

The STB's reasoning for this definition of barriers to entry comes directly from Contestable Market Theory. and the work of Baumol, Panzar and Willing ("Baumol, et al") as noted in *WTU*.[282] In their book "Contestable Markets and the Theory of Industry Structure," Baumol, et al, define an entry barrier as "anything that requires an expenditure by a new entrant into an industry, but imposes no equivalent cost upon an incumbent."[283] The definition does not imply that an entrant into the industry only has to pay what the incumbent paid for an asset when the incumbent first acquired that asset. What it does imply is that the entrant does not have to pay more than what the incumbent would pay for the asset in the current market. In other words,

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[280] *See WTU*, p. 670.
[281] *Id*
[282] *Id*, p. 669, note 68.
[283] *See* Baumol, et al, p 282 and *WTU*, p 669

the SARR does not have to pay more than the incumbent does to replace its current assets. The fact that the incumbent can pay less for essentially the same asset as a new entrant due to the incumbent's replacing an existing asset versus an entrant's building the asset for the first time leads to a cost that creates a barrier to entry.

NS's ability to acquire moveable bridges at a lower cost than a SARR simply because the NS has a bridge in place, and the SARR does not, clearly creates a cost for the SARR that imposes a barrier to entry. A simple example illustrates this issue. Assume an industry where companies have only one asset The cost for an entrant to acquire the asset is $1 million, but, because of government subsidies, an incumbent that is replacing the same asset incurs only $100,000 in costs It is simple to see that the incumbent has a distinct cost advantage over the new entrant and charge enough to cover its costs, while undercutting the prices of the entrant. The entrant cannot operate in such a market in the long-run since it cannot compete with the incumbent. In other words, the market is not contestable The only way for contestable market theory to work is to ensure that the entrant into the market does not incur a cost disadvantage relative to the incumbent. The subsidy provided by the Federal Government on moveable bridges provides just such a cost advantage to the incumbent, and cannot be allowed.

In addition, NS points to two examples where it believes the DRR should not only be denied access to Federal funding, it should also be required to pay costs based on the no-longer-existent predecessor to the bridge it is actually replacing. In the first example, NS concedes that, "the alteration/relocation of an existing bridge near Epes, Alabama that NS's predecessor railroad (the Alabama Great Southern Railroad Company), performed" was 100% federally funded.[284] However, NS goes on to state that, "because NS constructed the bridge in the first instance and the federal government appears simply to have paid for alteration and relocation of

[284] *Id.*

the bridge, the DRR would be required to pay the full cost of constructing the original bridge."[285] There are two problems with NS's argument. First, NS's classification of the alteration and relocation of the bridge as "simple" is totally unsupported Second, NS offers no proof that the bridge as originally configured (the full cost of which NS opines the DRR should pay) bears any resemblance whatsoever to the bridge as it is presently configured.

In the second example, NS concedes that, "the federal government paid approximately 78% of the cost of replacement of the [Hannibal, Missouri] bridge under the Truman-Hobbs Act."[286] However, NS goes on to state that, "this project involved the alteration of an existing bridge, not its original construction," and that, "NS's predecessor railroad paid to construct the bridge." NS again concludes that the DRR should be required to "pay the full cost of constructing the bridge."[287] As above, there are problems with NS's argument. First, the real-world bridge reconstruction was actually funded under the Truman-Hobbs Act, yet NS believes the DRR should be denied access to this real world funding stream. As discussed above, this is an impermissible barrier to entry. Second, NS offers no proof that the original bridge (the full cost of which NS opines the DRR should pay) bears any resemblance whatsoever to the replacement bridge that presently exists.

In the SAC analysis, DuPont must build the existing bridge, not the original bridge. NS received federal funding for the existing bridge. Therefore, the DRR should receive the same federal funding. It does not matter that DRR cannot tap the same source of funds, because that would be a barrier to entry. A barrier to entry is "any cost that a new entrant must incur that was not incurred by the incumbent." "This would preclude the incumbent from earning monopoly rents in the form of a return on investments it never actually made, but would permit the

[285] *Id*, p. III-F-211
[286] *Id*
[287] *Id*

incumbent a competitive return on the current replacement cost of all investment that it did incur."[288] Whether or not NS has received federal funding for its bridges, the SAC analysis requires DRR to incur the costs to replace the existing bridges, not the predecessor structures For bridges for which NS received federal funding to replace, it would be an entry barrier to deny DRR the same funding.

In Rebuttal, DuPont continues to assume it is eligible for federal funding under the Truman-Hobbs act for 90 percent of the replacement cost of movable bridges, particularly in light of the fact that the program received a $142 million infusion through the American Recovery and Reinvestment Act in the first year of the SARR operations.

The remaining component of a movable bridge is the fixed approach spans leading to the moveable span NS accepts DuPont's specific proposal for the superstructure types on the approach spans but rejects DuPont's pier designs and costs.[289] As discussed previously, DuPont does not agree with NS's modifications to pier designs as NS has not demonstrated that DuPont's designs are inadequate

(2) Exceptionally Tall Bridges

NS assigned all bridges with heights exceeding 65 feet to this category. NS maintained the superstructure span types proposed by DuPont for these structures but developed the substructure costs based on seven new pier design groups based on span length and pier height NS also reduced the cost of the piers for bridges with three or more piers to reflect the reduced height of the piers closer to the ends of the bridge.[290]

As noted previously, DuPont's engineers have accepted, with modifications, NS's pier heights for exceptionally tall bridges For bridges with more than three piers, DuPont's

[288] *See* WTU, p. 670
[289] *See* NS Reply, p. III-F-212
[290] *Id*, pp III-F-213-214.

engineers have taken a conservative approach and assumed the maximum bridge height for 25 percent of the piers and 25 percent of the maximum bridge height for the remaining 75 percent of the piers.

(3) Non-Movable Bridges over Navigable Waters

NS claims that this is another group of bridges that could not be replicated using DuPont's prescribed standard piers and spans because they require horizontal clearance much greater than that afforded by DuPont's standard spans. For these bridges, NS constructed them with one long truss span for each bridge to provide the same clearance that currently exists combined with standard superstructure spans back to the ends of the bridge. NS calculated the weight of the truss spans and used the lowest truss steel price from the Value Engineering report used for vertical lift bridge costs. The approach spans were assembled and costed in the same manner as described for movable bridges [291]

On Rebuttal, DuPont has accepted the NS's truss span length, pier heights and costs for these items for the portion of the bridge spanning the waterway DuPont has continued to use its Opening methodology and costs for the abutments, approach span pier heights, span lengths and costs.

c. Highway Overpasses

NS accepted DuPont's unit cost per square foot of bridge deck area for highway overpasses as well as DuPont's 10% cost share factor NS, however, rejected DuPont's estimated bridge deck areas. NS obtained the actual bridge deck areas for each highway overpass on the DRR from publicly available sources.[292] NS also adjusted the costs for each highway overpass by the Means Handbook location factors.

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[291] *Id*, pp. III-F-214-218
[292] *Id*, pp III-F-218-219

As discussed earlier, NS's application of the Means Handbook location factors to non-Means Handbook costs is improper and DuPont rejects it

On Rebuttal, DuPont has accepted NS's bridge deck areas and applied them to the unadjusted unit cost and 10 percent cost share factor agreed to by the parties

d. Summary

On Rebuttal, DuPont has increased its bridge costs to $2,273 million for bridges and $12 0 million for highway overpasses.

6. Signals and Communications

On Opening, DuPont's signals and communications expert, Victor Grappone, included a Positive Train Control ("PTC") signal system, a microwave tower communications systems and detectors designed to accommodate the DRR's needs.[293] NS presents several criticisms of these items.[294] NS's criticisms are addressed below.

a. Centralized Traffic Control

i. PTC Installation in 2009

NS claims that DuPont could not install PTC at the beginning of DRR operations in 2009 and would have to install PTC as an overlay to a centralized traffic control ("CTC") system. NS is incorrect.

As DuPont explained in Opening, rather than install a PTC system as an overlay to a centralized traffic control ("CTC") system, the DRR, as a least-cost most-efficient railroad, will install a PTC system that will be operational when the SARR begins operations on June 1, 2009.

[293] *See* DuPont Opening, pp III-F-38-43.
[294] *See* NS Reply, pp. III-F-219-253

Installing PTC from the outset eliminates redundant expenditures and the total cost is less than installing a CTC system and then converting it to a different system within six years.[295]

In Reply, NS disagreed with DuPont's approach, claiming that DuPont would have to install PTC as an overlay to CTC as NS is currently doing. NS's position is that the DRR has to follow the overlay approach because, in the real-world, NS has to install PTC as an overlay. This argument is nonsensical The DRR is not the NS and the DRR is not bound by the capital and operating approaches that NS follows. As a stand-alone entity, the DRR is allowed to make decisions regarding the optimum physical plant for all aspects of the SARR, including technological items, regardless of the real-world incumbent systems. From a theoretical standpoint, installing PTC at the outset is no different than DuPont choosing to upgrade the rail ties over a certain DRR section. Assume in the real world, an NS line being replicated by the DRR includes timber ties, and the DRR chooses to upgrade to concrete ties. By NS's logic, the DRR would need to first lay the timber ties, then later tear them out and replace them with concrete ties. Or assume that NS's offices are wired for cable internet access, but SRR chooses to install FIOS. NS would have DRR first install cable, then later replace it with DRR's preferred communications systems. The folly of NS's logic is obvious.

NS claims that the DRR could not install PTC at the outset of operations because PTC technology and equipment did not exist in 2009.[296] NS is mistaken. Positive train control is not a new concept and has been around for many years. Some form of Automatic Train Protection ("ATP") has been operational in Europe for over one hundred years. The current ATP standard in Europe is the European Rail Traffic Management System ("ERTMS") which has evolved over

[295] *See* DuPont Opening, pp. III-F-38-39
[296] *See* NS Reply, pp III-F-221-222

many years of ATP experience in Europe. Many non-European countries are also converting to ERTMS.[297]

PTC systems also were in use in the U.S. prior to the 2009 start date of DRR operations. Alstom's and PHW's Advanced Civil Speed Enforcement System ("ACSES") has been in daily service on Amtrak's Northeast Corridor since 2002.[298] Westinghouse Air Brake Technologies ("WABTEC") Chief Executive Officer, Al Neupaver, stated "[t]he technology is there" for PTC and cited to the fact that BNSF has been operating the systems for five years on portions of its system.[299]

Even NS was working on a PTC system prior to 2009. NS began working on its Optimized Train Control ("OTC") system, NS's version of PTC, in 2005. Validation and field testing were scheduled to take place in 2009.[300]

NS's position is incongruous. NS claims that the DRR could not implement PTC today because the technology does not exist, but then asserts that the DRR must implement PTC by 2015. NS cites to an FRA report that questions whether PTC can be fully implemented by the 2015 deadline.[301] According to NS's Vice President of Operations Planning and Support, Gerhard Thelen, NS's position now is that NS will not be able to implement PTC until the 2018-2020 timeframe.[302] NS's attempt to deflect the existence and feasibility of new PTC construction through a series of claims that its entire railroad may not be converted to a PTC/CTC overlay system by the end of 2015 does not in any way discredit the fact that PTC was available to the DRR in 2009 as noted above.

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[297] *See* DuPont Rebuttal e-workpaper "Wikipedia-Positive Train Control pdf"
[298] *Id.*
[299] *See* DuPont Rebuttal e-workpaper "WABTEC Management Discusses Q3 2012 Results pdf," p. 9
[300] *See* BizNS, Volume 1, Issue 4, July-August, 2009 included as DuPont Rebuttal e-workpaper "BizNS.pdf"
[301] *See* NS Reply, p. III-F-221
[302] *See* DuPont Rebuttal e-workpaper "Argus Rail Business 3-4-13 pdf."

Furthermore, it must be remembered that NS and the other Class I railroads have openly resisted the requirement for them to install PTC, and have lobbied Congress to consider changing the law that requires the nationwide implementation of PTC NS's inability to implement PTC by 2015 is a function of its resistance to the requirement and the added complexity of overlaying PTC on top of NS's existing CTC system, which are problems that the DRR avoids by constructing PTC from the outset.

NS also argues that the DRR could not implement PTC because the market could not supply the required systems to the DRR because of simultaneous demand from all railroads. The DRR would have a high incentive to implement PTC in 2009 in order to avoid investment in CTC equipment that would be replaced by PTC equipment in a few years Following the theory of stand-alone costs and the availability of unlimited resources, the DRR would not face the equipment shortages that NS is claiming is an implementation problem caused by the demand from all railroads simultaneously.[303] In addition, as noted above, the Class I railroads are currently hedging on PTC implementation, which forces suppliers to operate under great uncertainty. If a railroad the size of the DRR were to commit to system-wide implementation of PTC, the uncertainty would go away and suppliers would be free to invest the required capital to ramp up production.

NS next focuses on the issue of the radio frequency needed for PTC as an obstacle to the DRR's ability to implement PTC in 2009.[304] This would not be a problem for the DRR. Because the DRR would be implementing PTC prior to other railroads, it would not be competing with them for the 220MHz spectrum Nor would the DRR have to compete with the

[303] In fact, the DRR would not suffer from a shortage of equipment no matter when PTC is implemented as that would be a barrier to entry.

[304] *See* NS Reply, pp. III-F-222-223

other railroads for compatible radio equipment.[305] Furthermore, as an early entrant into the PTC arena, the DRR would be able to set the standard for other railroads seeking to implement PTC at a later date.[306]

NS also claims that the interoperability between all railroads with PTC and resource constraints associated with the scale of deployment are problems for the DRR.[307] As an early adopter of PTC, the DRR would have a significant influence over what the standard would be, similar to Amtrak's influence on the Northeast Corridor.[308] DuPont includes the cost associated with aligning the DRR's PTC to the standard adopted by other railroads. One method of estimating this cost would be what Amtrak is spending to make its Northeast Corridor ("NEC") system compliant with the current interoperability standards. According to Amtrak's Annual Report, Amtrak received a $10 million grant for a project that will create seamless interoperability on the NEC with NS, CSX and Conrail.[309] On Rebuttal, DuPont has included {{[redacted]}} for PTC development costs which includes costs for interoperability integration.

NS incorrectly argues that, because the required PTC technology was not in existence in 2009, precluding its use on the DRR is not a barrier to entry.[310] This is a red herring. As demonstrated above, PTC technology was available in 2009 so DuPont is not claiming a barrier to entry with regard to PTC technology.

Forcing the DRR to construct CTC and then overlay PTC would be a barrier to entry. PTC costs should be and are included in the DRR stand-alone costs, as they were in *AEPCO*. A

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[305] The DRR would not suffer from shortages of equipment or the inability to secure radio frequency or bandwidth as either of these would be a barrier to entry.

[306] The Wikipedia article suggests that Amtrak's ability to implement its ACSES system in the Northeast Corridor allowed it to set the standard for other railroads seeking to implement PTC at a later date. *See* DuPont Rebuttal e-workpaper "Wikipedia-Positive Train Control.pdf."

[307] *See* NS Reply, pp. III-F-222-224.

[308] The Wikipedia article indicates that commuter railroads are adopting the Amtrak methodology. *See* DuPont Rebuttal e-workpaper "Wikipedia-Positive Train Control.pdf."

[309] *See* DuPont Rebuttal e-workpaper "Amtrak 2011 Annual Report.pdf," p. 14.

[310] *See* NS Reply, pp. III-F-224-225.

contestable market is defined as one into which entry and exit are seamless and costless. Potential entrants are assumed to face the same set of productive techniques available to the incumbent firms The key here is "availability." The incumbent need not use the productive technique in order for a SARR to use it, it only has to be available for the incumbent to use. There is no argument that PTC systems are available today, were available in 2009, and are being used by real-world railroads (including North American Class I railroads). If any real-world railroad were being constructed today, it would not begin with a CTC system and then overlay PTC. Rather, the rational new railroad entrant would rely on a PTC system from the start, and rational equipment producers would step in to meet the immediate demand, which is what DuPont's evidence reflects

ii. Inventory of Signal Components

NS claims that DuPont's inventory of signal components is incorrect and unreliable.[311] DuPont has reviewed NS's inventory of signal components and accepted NS's inventory with the following modifications.

DuPont adjusted NS's signal component inventory to reflect DuPont's DRR configuration. DuPont has eliminated signal components associated with NS's work sidings as DuPont has not included them on the DRR (as discussed in Part III-B) DuPont has reduced the signal component inventory for interchanges as DuPont has included only 76 of the 143 additional interchanges included by NS as separate interchanges.[312] Signal components associated with NS's customer access sidings have been eliminated as the DRR is not constructing them. The number of electric locks has been adjusted to reflect DuPont's number of set out tracks and 702 customer turnouts. DuPont has removed NS's electric locks for

[311] *Id.* pp III-F-226-232

[312] As discussed in Part III-B, the remaining interchanges take place in yards already included by DuPont

connections of yard track to the main line because all of the yard turnouts connected to the DRR's main line are powered turnouts.

DuPont has also identified a number of overstatements in the quantities used by NS for several typical signals. For example, NS included an estimated 10,200 feet of cable for a double crossover location with four switches, or 2,550 feet per switch (nearly a half-mile of cable per switch). Based on the experience of DuPont's signals and communications expert, Mr. Grappone, this amount is extremely excessive On Rebuttal, this quantity has been reduced to a more reasonable 1,200 feet, or 300 feet per switch Several other cable amounts have been similarly adjusted [313]

DuPont has also identified NS overstatements regarding AREMA maintenance units For track circuits (AREMA C&S Manual items E-1, E-2b & E-3). NS has overstated the units required for typical locations. As an example, an "AS1" single track automatic location would entail the equivalent of one track circuit. This is true because such locations include one-half of each of the two track circuits extending in both directions. Because each track circuit is assigned two units per the AREMA C&S Manual, an AS1 typical location should carry two points as opposed to four as asserted by NS. Accordingly, AREMA unit typicals have been adjusted by DuPont on Rebuttal In a similar manner, NS has overstated the units associated with batteries and chargers (AREMA C&S Manual items K-4). DuPont has made the proper adjustments to these counts on Rebuttal [314]

[313] *See* DuPont Rebuttal e-workpaper "DuPont C&S Estimate Rebuttal xlsx," tab "Reply Signal Typicals " DuPont's adjustments are identified with purple shading.

[314] *See* DuPont Rebuttal e-workpaper "DuPont C&S Estimate Rebuttal xlsx," tab "AREMA Typicals " DuPont's adjustments are identified with purple shading.

iii. Unit Costs for Signal Components

NS claims that DuPont omitted several items required for the DRR's signal components and used incorrect unit costs for other items [315] Each of NS's claims is addressed below.

NS claims that DuPont omitted the costs of signal foundations DuPont has included these costs on Rebuttal.

NS claims that DuPont's materials package for its electronic lock locations did not include insulated joints. NS is incorrect as DuPont did include costs for insulated joints on Opening.[316] DuPont has included the correct number of insulated joints on Rebuttal.

NS claims that DuPont omitted track connections (near and far) for all track circuits. DuPont has included these items on Rebuttal.

NS claims that DuPont omitted a number of 12 volt and 24-volt battery/charger sets. DuPont has included the correct number on Rebuttal

NS claims that DuPont did not include the correct cabling for connecting AC power between the service drop and the equipment shelter DuPont has accepted NS's cabling on Rebuttal

NS claims DuPont did not include grounding kits for signal equipment shelters. DuPont has included this item on Rebuttal

NS claims that DuPont did not include the material and labor costs for the pipeline connections between the main line switch and electric locks or derails NS also claims that pipeline connects are obsolete and NS instead uses a separate switch stand and signal circuitry. DuPont has accepted NS's modification in Rebuttal.

[315] *See* NS Reply, pp III-F-232-236
[316] *See* DuPont Opening e-workpaper "DuPont C&S Estimate errata.xlsx," tab "Typicals," cells AC12 and AC13.

Finally, NS claims that DuPont misstated the material costs for the Power Mainline Switch Machine 24VDC and the Manual Mainline Switch Machine. DuPont has corrected these costs in Rebuttal.

b. Positive Train Control

On Opening, DuPont relied on information provided by NS in discovery to develop the costs of the DRR's PTC system. The costs were adjusted, where appropriate, to reflect the cost of a PTC system as an initial installation rather than a conversion from an existing CTC system.[317] NS disagrees with DuPont's premise and costs [318] DuPont addresses NS's criticisms below

i. PTC Wayside System

Unlike DuPont, NS developed its costs for the DRR's PTC wayside system as an overlay to a CTC system NS developed costs for a PTC integrated system to be installed at all wayside control points (including movable span bridges), wayside signals and tunnels.[319]

NS states that it included unit costs for new components and corrected outdated unit costs by DuPont NS included PTC costs associated with three- and four-track automatic signal locations by including two PTC installations at each location DuPont contends that only one PTC installation is required at these locations and has adjusted the DRR's costs accordingly

NS claims that DuPont used only the lower cost for standard control points. On Opening, DuPont used the concept of interlocking hut equivalents ("IHE"). This accounted for interlocking installations of varying size and complexity and the PTC costs were scaled accordingly. On Reply, NS accounted for interlocking of varying size by applying separate costs

[317] *See* DuPont Opening, p. III-F-39.
[318] *See* NS Reply, pp. III-F-236-246
[319] *Id*, pp III-F-236-237

for small interlocking/automatic signals, double track and large interlockings. On Rebuttal, DuPont has accepted this alternate method and the associated costs.

NS claims that DuPont excluded necessary antenna tower costs. DuPont accepts NS's addition of 60-foot towers at each interlocking and automatic signal location. The inclusion of these towers, however, renders unnecessary the 1,343 30-foot towers included by DuPont on Opening for VHF communications Accordingly, the 30-foot towers have been eliminated from the DRR's communication costs on Rebuttal

Finally, NS claims that DuPont arbitrarily reduced installation labor by 75 percent This reduction is justified because the DRR will be installing PTC as an integral part of the overall signal system from the beginning This eliminates the labor-intensive requirement to retrofit an existing signal system as NS is currently performing.

ii. PTC IT Costs

NS provided PTC IT deployment costs in discovery which DuPont relied on in Opening. NS rejects two adjustments to PTC IT deployment costs made by DuPont.[320] First, NS rejects DuPont's {{[redacted]}} reduction in total deployment costs for "UTCS adjustment per Phil."[321] This adjustment was inadvertently made in Opening and DuPont has removed this adjustment on Rebuttal

Second, NS rejects DuPont's adjustment to IT back-office costs to reflect the difference in NS system PTC miles and the DRR route miles with the one exception of 802.11 buildout costs DuPont accepts NS's position on Rebuttal and only adjusts the 802.11 buildout costs on a mileage basis.

[320] *Id.* pp III-F-237-239.
[321] *Id.* p. III-F-238.

iii. PTC Locomotive Costs

NS accepts DuPont's unit cost of {{[redacted]}} to outfit each DRR road locomotive with PTC capability[322] but applies it to NS's overstated locomotive count. DuPont has applied this cost to its Rebuttal count of road locomotives

iv. PTC Development Costs

On Opening, DuPont did not include any PTC development costs. On Reply, NS included {{[redacted]}} for PTC development costs[323] DuPont acknowledges that some development costs will be incurred by the DRR and has accepted NS's figure on Rebuttal

As part of this {{[redacted]}}, NS has included {{[redacted]}} which equals a portion of NS's costs for the PTC-related subsidiaries responsible for obtaining the required communications radio spectrum for PTC operations. As the DRR would be one of the leading determinants of the PTC frequency spectrum, being the first one on the block to have a PTC system, these monies will be used for interoperability integration.

v. PTC Expenditure Schedule

On Opening, DuPont included PTC costs in 2009 at the beginning of DRR operations NS spreads PTC costs over the 2010 through 2015 time period. As PTC will be in place on the DRR from the beginning of operations in 2009, costs must be included at that time.

c. Detectors

NS claims DuPont failed to include costs for slide fences and understated the required number of failed equipment detectors ("FEDs").[324]

On Rebuttal, DuPont has included the costs for slide fences However, DuPont has modified NS's Reply spreadsheet[325] by adjusting the slide fence requirements of the DRR by

[322] *Id.* p III-F-239
[323] *Id.* pp III-F-239-245 and NS Reply e-workpaper "DuPont C&S Estimate errata Reply errata xlsx," tab "Reply Components & Tabulation."
[324] *Id.* pp III-F-246-248.

removing the slide fences NS added that were not included in the slide fence inventory provided by NS in discovery.[326] The correction to the DRR's slide fence inventory caused changes in NS's cost calculations plus DuPont rejected NS's unexplained 20% mark-up to the average height of the DRR's slide fences.[327]

As explained in Part III-B, DuPont disagrees with NS's FED spacing and continues to use its Opening FED spacing. The number of FEDs included on Opening was slightly overstated (273 should have been 265). On Rebuttal, the number of FEDs has increased by three due to increases in double-track for a total of 268

NS also greatly overstated the number of dragging equipment detectors ("DED"). In Opening, DuPont included one DED with every FED. On Reply, without explanation, NS included nearly three times as many DEDs as FEDs by linking the number of DED's to the count of electric locks which makes no sense. On Rebuttal, DuPont continues to include one DED with every FED.

d. Crossing Signal Equipment

NS claims that DuPont's crossing signals inventory is inaccurate and essential equipment was omitted.[328] NS's criticisms are addressed below.

NS claims that DuPont omitted many crossings from lines the DRR is building and incorrectly included crossings on lines the DRR is not building. NS states that it has corrected the DRR crossing inventory. DuPont accepts NS's crossing inventory on Rebuttal.

NS claims that DuPont failed to include essential equipment for the DRR's crossing signals including unidirectional equipment at locations where train signal joints are present

[325] *See* NS Reply e-workpaper "Slide Fence Inventory xlsx "
[326] *See* DuPont Rebuttal e-workpapers "Slide Fence Inventory REBUTTAL.xlsx" and "Slide Fences (NS-DP-C-18327 to 18336) pdf"
[327] *See* DuPont Rebuttal e-workpaper "Slide Fence Inventory REBUTTAL.xlsx." Changes made by DuPont in Rebuttal are highlighted in yellow
[328] *See* NS Reply, pp. III-F-248-253

within the approach to the crossing, additional front and back flashing lights at signal crossing locations which are required to provide warning for different approach directions, cantilever signals at required locations, conduit for running underground cables and the termination shunts for crossing predictor equipment, the track connection kits for termination shunts and termination shunt cover assemblies. On Rebuttal, DuPont has included these additional items.

e. Communications

NS states that it accepted DuPont's material and installation unit costs for the DRR's communications system[329] yet NS included $255 million for communications costs compared to DuPont's $251 million. A review of NS's workpapers reveals that NS indexed the costs for a few components from 2005 to 2Q09. DuPont agrees with NS's revised costs for these items.

However, DuPont determined that NS failed to make one adjustment to its communications costs As discussed above, as part of its PTC wayside costs, NS placed 60-foot towers at the same locations DuPont had placed 30-foot towers for communications. DuPont has accepted NS's 60-foot towers making the 30-foot towers unnecessary as the VHF equipment would be mounted on the 60-foot towers. NS failed to remove the costs for the 30-foot towers from its communications costs DuPont has removed them on Rebuttal resulting in communications investment costs of $244 million for the DRR.

f. Hump Yard Equipment

NS included $213 million for integrated switching equipment in eight (8) hump yards on the DRR [330] As discussed in Part III-C, hump yards are not necessary for the DRR and DuPont has not included these costs.

[329] *Id*, p. III-F-253.
[330] *Id*

g. Summary

Based on the above, DuPont's signals and communications costs have increased to $1,490 million on Rebuttal

7. Buildings and Facilities

DuPont's buildings and facilities were detailed in its Opening Part III-F-7 Briefly summarized, DuPont included facilities at six major yards, a headquarters building, fixed fueling facilities, facilities for direct-to-locomotive ("DTL") fueling, facilities for locomotive servicing and four locomotive shops. In addition, DuPont included crew, yard and MOW buildings and various other facilities as required [331]

NS's Reply buildings and facilities costs are much higher than those developed by DuPont on Opening NS changed the design and costs of virtually every building on the DRR. NS also added many buildings never before included in a SAC proceeding. In addition, NS greatly increased the costs for lighting and paving. DuPont addresses NS's Reply below.

a. Headquarters Building

On Opening, DuPont specified a two-story 31,803[332] square foot building to house 142 headquarters personnel (in 103 offices) and with space for additional facilities [333] NS argues that DuPont's building size is insufficient because, according to NS, the DRR headquarters building will house 1,233 personnel. NS estimates the size of the DRR headquarters building by dividing 31,803 square feet by 142 personnel and then multiplying the result by 1,233 personnel. Using this methodology, NS estimates that the DRR headquarters building would need to be 276,192 square feet in size and five stories high.[334]

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[331] *See* DuPont Opening, pp III-F-43-48 and supporting workpapers.
[332] On Opening, DuPont inadvertently included costs for a 20,000 square foot headquarters building DuPont has used the correct square footage figure on Rebuttal.
[333] *See* DuPont Opening, p III-F-44 and e-workpaper "DRR Facilities Cost errata xlsx," tab "HQ Building."
[334] *See* NS Reply, pp III-F-255-256

As discussed in Part III-D, NS's headquarters personnel count is overstated. On Rebuttal, the DRR headquarters personnel have increased to 429.[335] DuPont has continued to use its Opening methodology to develop the size of the DRR headquarters building. Based on 429 personnel and 308 offices, the DRR headquarters building requires 93,500 square feet which would be contained in a two-story building.[336]

On Reply, NS made several modifications to DuPont's headquarters building costs. For example, NS increased the number of fire hydrants from one to three NS also claims that DuPont excluded costs for site items such as gates, electrical transformer and pad, and parking lot striping for the 110 spaces.[337]

On Rebuttal, DuPont has accepted NS's average cost of $120 per square foot[338] and applied it to the appropriately sized headquarters building of 93,500 square feet resulting in $11.2 million for the DRR headquarters building.[339]

b. Fueling and Locomotive Servicing Facilities

i. Fixed Fueling Facilities

On Opening, DuPont included fixed fueling platforms, with eight fueling stations, at its six major yards.[340] The location and sizing was provided by DuPont's operating witness based on the needs of the DRR. On Reply, NS included fixed fueling facilities with twelve fueling stations at each of its eight hump yards and four large flat yards and fixed fueling facilities with six fueling stations at ten other yards.[341]

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[335] In preparing for Rebuttal, DuPont discovered that the 142 personnel used in Opening was incorrect. The correct personnel figure is used in Rebuttal

[336] *See* DuPont Rebuttal e-workpaper "DRR Facilities Cost Rebuttal xlsx," tab "HQ Building."

[337] *See* NS Reply, p III-F-257

[338] *See* NS Reply e-workpaper "DRR Cost Per Building Facility Reply.xlsx," tab "Headquarters."

[339] *See* DuPont Rebuttal e-workpaper "DRR Facilities Costs Rebuttal.xlsx."

[340] *See* DuPont Opening, p III-F-44

[341] *See* NS Reply, p III-F-258.

NS does not criticize the location and number of DuPont's Opening fueling facilities and does not demonstrate that they are insufficient to handle the DRR's requirements NS attempts to justify its additional fixed fueling facilities in two ways First, NS claims to have provided sufficient facilities to accommodate fueling activities required for DRR to comply with reciprocal obligations imposed by NS interchange agreements.[342] However, NS does not explain why fixed fueling facilities are needed in lieu of direct-to-locomotive ("DTL") fueling by tanker truck. Second, NS claims to have included fixed fueling facilities at the same DRR yard locations where NS currently has them [343] Just because NS has fixed fueling facilities at a particular location does not mean that they are required. Furthermore, the DRR is not NS. Finally, as explained in Parts III-B and III-C, NS overstated the yard sizes and the locomotive requirements of the DRR For all of the above reasons, DuPont has continued to rely on its Opening fixed fueling facilities.

NS accepts DuPont's base cost for each locomotive fueling station as a starting point and then adds costs for what NS claims are missing components. NS adds costs for hose reels, overhead service platforms and platform mounted fuel cranes and fuel management systems. NS used DuPont's Opening cost for hose reels so clearly DuPont did include them. On Rebuttal, DuPont has added the costs for the overhead service platforms, platform mounted fuel cranes and fuel management systems.

[342] *Id*, p. III-C-87.
[343] *Id*, p III-C-205.

ii. Fueling by Truck and Locomotive Servicing Facilities

On Opening, DTL fueling (fueling by tanker truck) was used in the DRR's yard facilities at locations other than the DRR's six main yards. DuPont also included locomotive servicing facilities at these same locations.[344]

NS accepts DuPont's approach but only for certain yards identified by NS's operating plan.[345] As discussed in Part III-C, DuPont is not accepting NS's yards and continues to include the fueling by truck and locomotive servicing facilities included on Opening

On Opening, DuPont inadvertently omitted the costs for the facilities needed at DTL locations. On Rebuttal, DuPont has included the items specified by NS at locations where DuPont has included locomotive servicing tracks but has substituted DuPont's Opening unit costs for NS's overstated costs for paving, lighting and track pans.[346]

c. Locomotive Repair Facilities

On Opening, DuPont included four locomotive repair shops at DRR major yards in Elkhart, IN, Conway, PA, Roanoke, VA and Chattanooga, TN DuPont based its locomotive shops on actual maintenance facilities designed by Crouch Engineering, which are in use today. DuPont also included costs for tools and equipment for each facility.[347] The DRR's locomotive shops were sized to handle the DRR's Opening locomotive count of 584 road locomotives and 80 switching locomotives for a total of 664 locomotives

On Reply, NS accepts the four locations specified by DuPont but adds six additional locomotive shops at Bellevue, OH, Decatur, IL, Enola, PA, Birmingham, AL, Linwood, NC and

[344] *See* DuPont Opening, pp. III-F-44-45 and e-workpaper "DRR Yard Matrix errata xlsx," tab "ADDL TRACK "
[345] *See* NS Reply, p. III-F-259.
[346] *See* DuPont Rebuttal e-workpaper "DRR Facilities Cost Rebuttal.xlsx," tab "DTL Fueling "
[347] *See* DuPont Opening, p. III-F-45 and e-workpapers "DRR Facilities Cost errata.xlsx" and "Locomotive Shop pdf."

Macon, GA. NS rejects DuPont's locomotive shop costs, claiming the facilities and equipment are inadequate to service the DRR's locomotives.[348] NS's criticisms are addressed below.

First, DuPont does not agree with NS that ten major locomotive repair facilities are required on the DRR. NS does not explain why four locomotive repair facilities strategically located along the DRR are not sufficient and why ten are required In fact, NS simply states that ten repair facilities were determined "[b]ased on its Operating Plan "[349] NS clearly has so many facilities because its count of 1,441 locomotives is grossly overstated. As discussed in Part III-C, the DRR's locomotive count has increased from 664 on Opening to 909 on Rebuttal. Therefore, on Rebuttal, DuPont has added two additional locomotive repair facilities (at Bellevue, OH and Atlanta, GA) to the four proposed in Opening for a total of six locomotive repair facilities.

On Reply, NS identified many criticisms of DuPont's locomotive repair facility size and costs.[350] DuPont has reviewed its Opening costs along with NS's criticisms and Reply costs and determined that the Opening locomotive repair facility size and costs were understated.

On Rebuttal, DuPont has accepted NS's size of 93,085 square feet for each facility and the cost per facility included by NS

As noted above, DuPont has increased the number of locomotive repair facilities on the DRR from four to six. On Rebuttal, DuPont has included $186 million for the six locomotive repair facilities on the DRR [351]

d. Car Repair Facilities

On Opening, the DRR did not include the cost of car repair facilities because its cars are obtained under a full service lease and car repairs are the responsibility of the lessor, presumably

[348] *See* NS Reply, pp III-F-259-263
[349] *Id.* p III-F-259.
[350] *Id*, pp III-F-260-263.
[351] *See* DuPont Rebuttal e-workpaper "DRR Facilities Cost Rebuttal xlsx," tab "Major "

by a contractor However, the DRR provided space and tracks for contractor car shops at the DRR's Conway and Atlanta yards and rip at 45 locations on the DRR. DuPont's approach is consistent with prior STB decisions [352]

On Reply, NS ignores what the DRR provided for on Opening NS contends that the DRR would have to construct two car repair facilities at Chattanooga, TN and Elkhart, IN to handle repairs for foreign cars moving on the DRR. NS also included rip tracks at 27 locations [353] NS also states that the DRR's car lessor would have no obligation to repair foreign cars [354]

NS is wrong. The car repair contractor will have two facilities on the DRR and numerous rip track locations. What NS fails to grasp is that the DRR would be reimbursed for all repairs on foreign cars. As such, the car repair contractor would repair the foreign cars, using its own facilities, and the DRR would simply pass through the monies received for car repairs from foreign railroads to the contractor. In addition, NS provides no explanation as to why the car repair facilities need to be in Chattanooga and Elkhart.

While the DRR will provide space and tracks, the facilities and equipment at these locations will be provided by the contractor (not the DRR) as all car repair costs on DRR-owned cars are covered by the full service lease. NS claims that the DRR would need to provide several items at the rip track locations.[355] The DRR has provided for lighting, compressed air, power service and paved roadways [356] The costs for tools and parts storage and any necessary canopies would be the responsibility of the car repair contractor.

On Rebuttal, DuPont maintains its Opening position on car repair facilities.

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[352] *See* DuPont Opening, p. III-F-46 and e-workpaper "DRR Yard Matrix errata.xlsx "
[353] *See* NS Reply, pp III-C-225-226 and III-F-263.
[354] *Id*, p III-C-89
[355] *Id*, p III-F-265.
[356] *See* DuPont Opening e-workpaper "DRR Facilities Cost errata.xlsx," tabs "Minor" and "Construct Minor."

e. Crew Change Facilities

DuPont's Opening crew change facilities were simple buildings designed to meet the basic functions they perform. DuPont provided large crew facilities, 2,240 square feet, at the six major yard locations and smaller facilities, 1,400 square feet, at 61 other locations for a total of 67 buildings.[357]

Before addressing NS's specific criticisms pertaining to the crew change facilities, the number of facilities must be addressed. Although NS agreed with DuPont's crew districts,[358] NS placed many of its crew change facilities in different locations, increased the number of crew change facilities from 67 to 79 and increased the number of locations with large crew facilities. DuPont included one facility at each crew change location. NS included two large crew change facilities at each of its eight hump yards, one large facility at five large flat yards and small facilities at 58 other locations. NS never explains why two large facilities are needed at each hump yard or why large crew change facilities are needed at more locations. NS does not explain why it changed the location of the crew change facilities to cover the agreed-upon crew districts. As discussed in Part III-C, NS's yard sizes are overstated, resulting in more large yards than the DRR requires.

On Opening, DuPont placed its crew change facilities at the end points of the DRR crew districts and provided for large facilities at its major yards. On Rebuttal, DuPont has continued to include its Opening crew change facilities.

On Reply, NS accepted DuPont's proposed sizes of the crew change facilities but identified many criticisms of DuPont's facility costs.[359] DuPont has reviewed its Opening costs

[357] *See* DuPont Opening, p. III-F-46.
[358] *See* NS Reply, p. III-C-220.
[359] *See* NS Reply, pp. III-F-265-266.

along with NS's criticisms and Reply costs and determined that the Opening crew facility costs were understated.

On Rebuttal, DuPont has accepted NS's costs for the small and large crew change facilities applied to DuPont's count of each facility

f. Yard Offices

On Opening, DuPont included 42 yard office buildings at locations where there are car inspectors, yard crews or transportation department field personnel.[360] These buildings were the same size (1,400 square feet) and cost as the small crew change facilities.[361]

NS rejected DuPont's size and cost as well as the number of yard offices NS states that the same criticisms identified for the crew change facilities apply to DuPont's yard offices. NS based its yard office sizes on existing NS facilities, building large offices at 13 hump and large flat yards and smaller offices at 25 other yards for a total of 38 buildings.

As discussed in Parts III-C and III-D, DuPont has added car inspectors and yard crews at various DRR yard locations Because of this, the number of yard buildings has increased to 54 on Rebuttal. DuPont, however, does not accept NS's increased building size. NS provided no explanation as to why DuPont's yard buildings are too small and no justification for the larger buildings NS included NS's approach is to simply assert that DuPont's building size is too small because it is apparently smaller than two buildings located at different places along NS's vast system that were arbitrarily selected by NS. NS provides no evidence that these selected buildings are "typical." Furthermore, the DRR is not the NS and the DRR is not required to replicate NS's facilities.

[360] *See* DuPont Opening e-workpaper "DRR Yard Matrix errata xls," tab "DRR YARDS."
[361] *See* DuPont Opening, p. III-F-47

On Rebuttal, DuPont has continued to include yard buildings that are the same size as the small crew change facility and used the Rebuttal cost of the small crew change facility.

g. Maintenance of Way Buildings (Roadway Buildings)

On Opening, DuPont included 36 MOW buildings. These buildings are the same size (and cost) as the small crew change buildings but configured differently with basic facilities for the work crew and signal maintainers plus a small garage to store materials and occasionally vehicles as needed [362]

On Reply, NS states that its criticisms of the crew change facility unit costs and calculations also apply to DuPont's MOW facilities. NS claims that DuPont's MOW facility is undersized and fails to provide adequate parking for oversized MOW vehicles or storage for materials, tools and other equipment.[363]

To attempt to justify its claim that DuPont's MOW facility is undersized, NS cites to an existing facility in Mount Vernon, IL stating that it is 1,530 square feet in size and used to house MOW crews only.[364] However, NS provides no support for this statement. NS goes on to state that the DRR MOW facility would need to be 3,000 to 3,500 square feet in size, again with no support. NS then settles on a size of 2,240 square feet, the same size as a large crew change facility (instead of the small crew change facility) NS uses its large crew change facility cost for the MOW building. NS also claims that outdoor storage space or warehouses, in some instances, are necessary at the MOW facility locations

NS's increased size is arbitrary and unsupported and DuPont does not accept it NS has not shown that its MOW facilities have extra garage and outdoor storage space. In Mr. Crouch's experience, working at and designing such facilities, many do not have any garage space at all

[362] *See* DuPont Opening, p. III-F-47 and e-workpaper "DRR Facilities Cost errata xlsx," tab "MOW."
[363] *See* NS Reply, III-F-267-268
[364] *Id.* p. III-F-268

nor do they have a covered space for equipment let alone a fenced storage yard or warehouse. DuPont has not included these additional items on Rebuttal.[365] DuPont has, however, adjusted the MOW facility cost to reflect the Rebuttal cost of the small crew change facility

DuPont notes that NS grossly overstated the number of MOW facilities. NS included MOW facilities at 26 yards[366] and 65 facilities located outside yards for a total of 91 facilities, nearly three times the number included by DuPont. As discussed in Rebuttal Exhibit III-D-2, DuPont provided for thirty-six Roadmasters on the DRR in Opening and, therefore, DuPont included one MOW facility at each Roadmaster location In Reply, NS arbitrarily increased the number of Roadmasters and exaggerated the number of MOW facilities required by the DRR On Rebuttal, DuPont maintains the same thirty-six MOW facilities Furthermore, DuPont notes that NS significantly overstated the costs for MOW facilities by including costs for 91 facilities at DRR yards instead of 26.[367]

NS also includes costs for thirteen (13) MOW mechanic facilities to service high rail MOW vehicles, located at each of NS's eight hump yards and five large flat yards [368] DuPont notes that MOW mechanic facilities have never before been included in a SAC proceeding Furthermore, DuPont included an allowance for equipment repairs in its Opening MOW costs and continues to do so on Rebuttal.[369] Therefore, these repair facilities are not needed and DuPont has not included them on Rebuttal.

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[365] DuPont notes that NS did not include costs for any warehouses at MOW field offices. NS did include warehouses at each of its 71 yards as discussed *infra*

[366] Thirteen buildings at large yards and thirteen buildings at small yards *See* NS Reply e-workpaper "DRR Facilities List Reply.xlsx," tab "Facilities Costs," Line 28

[367] *See* NS Reply e-workpaper "DRR Facilities List Reply.xlsx," tab "Facilities Costs." Cells L47 and M47 both include the 65 MOW field offices shown on tab "Field HQ Offices "

[368] *See* NS Reply, p. III-F-270

[369] *See* DuPont Opening e-workpaper "Exhibit III-D-3 DRR MOW errata xls," tab "Equipment," cell E26

h. Wastewater Treatment

NS claims that the oil/water separators included by DuPont are insufficient as they can only handle ten gallons per hour of effluent. NS has included costs for upgraded oil/water separators.[370]

NS is wrong in its criticism of DuPont's oil/water separator The oil/water separator included by DuPont on Opening is capable of handling 40-50 gallons per minute,[371] not ten gallons per hour However, in Rebuttal, DuPont has accepted NS's wastewater treatment system because of the increased locomotive repair facility size.

i. Other Facilities / Site Costs

NS claims that DuPont understated the amount of paving required for the DRR facilities by failing to provide paving for parking lots for yard, shop and transportation employees. NS used aerial photos of the template yards and facilities to estimate the DRR's requirements [372] NS has provided no evidence that paving even exists in all its yards, much less the quantities specified by NS NS's additional pavement quantities are overstated and unrealistic DuPont included sufficient paving for yards on Opening. In the experience of DuPont's engineering witness, Mr. Crouch, parking is usually on either hard packed dirt or gravel that has been spread around over time from the sub-ballast of the yard tracks and paving is not required. For automotive, intermodal and bulk transfer terminals, DuPont has accepted the paving requirements identified by NS as DuPont has accepted NS's sizes for these facilities.

DuPont does not, however, accept NS's paving unit costs. Although NS did not claim that DuPont's paving unit costs were inadequate, NS included significantly higher paving unit costs. As NS has not justified its higher paving unit costs, DuPont has continued to rely on its

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[370] *Id.* p. III-F-271
[371] *See* DuPont Opening e-workpaper "Oil-Water Seperator.pdf"
[372] *Id.* pp III-F-272-273

Opening paving unit costs at yards and facilities with one exception DuPont has accepted NS paving costs for the portion of the intermodal facilities where containers are stored.

NS claims that DuPont's lighting costs are insufficient and the DRR's lighting requirements are understated.[373] NS included proposed lighting layouts for various facilities in its Reply workpapers. NS's proposed lighting locations are shown as yellow circles with significant amounts of overlap.[374] The lighting locations specified by NS are not the existing lighting locations for NS's existing facilities As demonstrated below, without supporting evidence or calculations, NS more than doubled the lighting necessary for each facility Moreover, the lighting coverage shown by NS overlaps with residential areas and property outside the proposed railroad facilities. The proposed "stadium lighting" on 100-foot tall poles is not typical for all NS facilities. NS included high mast lighting poles with twelve (12) fixtures per pole. Based on Mr. Crouch's experience, most existing NS facilities have wooden pole-mounted modest, lighting fixtures, which DuPont included on Opening, and not the gold-plated "stadium lights" specified by NS for each yard and facility NS's proposed lighting layouts are unrealistic, overstated and would most likely not be approved by local agencies due to light pollution of adjoining properties.

As NS did not rely on the existing lighting at the yards and facilities that NS used as its templates for lighting requirements, DuPont researched these locations using the internet and identified the existing lighting at each template facility.[375] NS used a yard at Moraine, OH as the template for its small classification yard and proposed eleven (11) high mast lights. In reality, there are no high mast lights at this yard. NS used a yard at Fort Wayne, IN as the template for

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[373] *Id.* pp III-F-273-274.

[374] *See* NS Reply e-workpaper "09 Yard Lighting and Roadway Quantities.pdf "

[375] DuPont was able to see the existing lighting at these facilities using Google Earth and Bing *See* DuPont Rebuttal e-workpaper "DRR Facility Lighting Rebuttal pdf "

its medium classification yard and proposed twelve (12) high mast lights. There are no high mast lights at this yard either. NS used a yard at Sheffield, AL as the template for its large classification yard and proposed forty-four (44) high mast lights There are only six (6) high mast lights at this yard (with eight (8) fixtures on the poles instead of twelve (12) specified by NS) and the rest of the yard is lit by single lights on timber poles. Based on the above, DuPont has not accepted NS's grossly overstated lighting requirements for yards and continued to rely on the lighting included on Opening.

NS used a yard at Greensboro, NC as the template for its small intermodal facility and proposed eight (8) high mast lights. There are no high mast lights at this yard NS used a yard in Charlotte, NC as the template for its medium intermodal facility and proposed ten (10) high mast lights There are currently two high mast lights at this yard (one at each end) and single lights on poles for the rest of this yard NS used an unidentified yard as the template for its large intermodal yard and proposed fifty (50) high mast lights. DuPont identified this yard using the coordinates contained in NS's workpapers and determined that the existing facility only has twenty-five (25) high mast lights. On Rebuttal, DuPont has used its Opening lighting configuration applied to the small intermodal yard with no high mast lights. For the medium intermodal yard, DuPont has included two high mast lights (one at each end) with the Opening lighting configuration used in the remaining portion of the yard [376] For the large intermodal yard, DuPont has included twenty-five (25) high mast lights

NS failed to provide the location information for the small automotive yard used by NS as a template for which NS proposed ten (10) high mast lights. DuPont reviewed NS's diagram and determined that three (3) high mast lights provide sufficient coverage For the medium

[376] DuPont notes that NS's high mast light cost includes twelve (12) fixtures As noted above, the actual high mast fixtures identified by DuPont include only seven (7) or eight (8) fixtures. On Rebuttal, DuPont has used NS's overstated high mast cost with twelve (12) fixtures even though this is an overstatement of the requirements.

automotive yard template, NS used a yard in Petersburg, VA and proposed twelve (12) high mast lights. Actual count at this yard is eight (8) high mast lights. For the large automotive yard, NS used a yard at Shelbyville, KY for the template and proposed sixty-three (63) high mast lights This yard only has sixteen (16) high mast lights combined with smaller lights On Rebuttal, DuPont has included three (3) high mast lights for the small automotive yards, eight (8) high mast lights for the medium automotive yards and sixteen (16) high mast lights for the large automotive yard combined with the lighting fixtures used by DuPont on Opening.

For the bulk terminal template, NS used a yard in Harrisburg, PA. This facility has no high mast lights, only single lights on timber poles. On Rebuttal, DuPont has used its Opening lighting specifications for the bulk transfer facilities.

NS also claims that DuPont failed to include the cost for the main electrical switchgear for each large yard and locomotive shop and failed to include cabling for distribution of power.[377] DuPont inadvertently excluded these items and has included them in Rebuttal.

NS claims that DuPont included only 25 bollards in major yards and 6 bollards in minor yards NS estimates that 200 bollards are needed per yard [378] NS's addition of 175 bollards is unrealistic, unsupported and not required. Bollards are typically used only to protect the overhead doors of a shop and, occasionally, transformers on the ground On Rebuttal, DuPont continues to use its Opening number of bollards.

j. Guard Booths

NS claims that DuPont did not include guard booths at the entrance of any yards. NS states that it provided guard booths at every intermodal yard and automotive facility with two

[377] *See* NS Reply, pp III-F-274-275
[378] *Id*, p III-F-275

booths at large facilities and one booth at small facilities.[379] A review of NS's workpapers, however, reveals a different story NS included two guard booths at each of its eight automotive facilities for a total of 16 guard booths.[380]

On Opening, contrary to NS's assertion, DuPont included the costs for one 25' by 25' guard booth at each automobile yard based on DuPont's yard building cost.[381]

NS does not explain why two guard booths are needed at each automotive facility and DuPont continues to include one guard booth at each automotive facility. DuPont notes, however, that NS's guard booths are more appropriately sized than DuPont's building and, given the criticisms NS has lodged against DuPont's yard building costs, DuPont has accepted NS's Reply cost for a guard booth.

k. Mechanic Repair Shops

NS included 12 mechanic repair shops to "maintain and repair yard hostlers and forklifts."[382] Shops such as this have never before been included in a SAC proceeding. NS did not explain its rationale for the number and location of these facilities

DuPont disagrees with the NS as to the need for these facilities. For instance, a yard hostler is not a piece of equipment. Rather, it is someone who shuttles locomotives around. All of the maintenance costs for the DRR locomotives have been accounted for elsewhere. As for forklifts, NS has not specified where these forklifts would be located. As noted earlier, the repair costs for all MOW equipment is accounted for in the MOW costs. Any forklifts needed by the car repair contractor would be his responsibility to maintain and repair Any forklifts required by

[379] *Id,* pp III-F-275-276
[380] *See* NS Reply e-workpaper "DRR Facilities List Reply xlsx," tab "Facilities Costs," Column (R).
[381] *See* DuPont Opening e-workpaper "DRR Facilities Cost errata xlsx," tab "Auto Yards," Item No. 23 It is labeled as a "yard" building but is, in fact, the guard booth
[382] *See* NS Reply, pp. III-F-276-277

a locomotive facility would be repaired at that facility. NS has not supported the need for any mechanic repair shops and DuPont has not included them on Rebuttal.

l. Mechanical Offices

Although not discussed in NS's Reply evidence, NS included the costs for 26 mechanical offices.[383] NS provided no explanation of the purpose of these facilities. These facilities are not needed as car repair personnel report to the contractor-provided car repair facilities and locomotive repair personnel report to the locomotive repair facilities. Furthermore, DuPont has placed yard offices at all locations with mechanical (car inspection) personnel.[384]

m. Observation/Yard Master Towers

NS included 29 observation buildings / yard master towers. NS attempts to justify their inclusion by claiming that they are present in two NS automotive yards.[385]

DuPont disagrees with NS The mere presence of these facilities in two NS yards does not justify their need on the DRR Furthermore, in addition to the towers at the eight automotive facilities, NS included two towers at each of its eight hump yards and one tower at each of its five large flat yards with no justification whatsoever DuPont is not building any hump yards Finally, DuPont's operating witness McDonald does not recall any such facilities on any of the railroads he worked for during his extensive career nor does he see the need for them on the DRR.

DuPont notes that these towers have never before been included in a SAC proceeding DuPont has not included them on Rebuttal as they are not necessary.

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[383] *See* NS Reply e-workpaper "DRR Facilities List Reply xlsx," tab "Facilities Costs," Line 27, Columns (J) and (K)

[384] *See* DuPont Opening, p III-F-47.

[385] *See* NS Reply, pp. III-F-277-278.

n. Storage and Warehouse Buildings

NS included storage and warehouse buildings at each of its 71 yards totaling over $61 million. NS included 24,000 square foot buildings costing in excess of $3.5 million each at its eight hump yards and five large flat yards NS included much smaller 1,952 square foot buildings costing $280,000 each at its other 58 yards.[386] NS claims the smaller storage buildings are for maintenance-of-way storage while the larger buildings are for maintenance-of-way and "other railroad departments and functions "

NS has not supported the need for these buildings The mere existence of buildings at the two locations identified by NS does not provide any proof that the DRR requires these facilities. NS claims the smaller buildings, included at 58 "small" yards, are for maintenance-of-way materials but, as noted above in the discussion on maintenance-of-way buildings, NS only places MOW buildings at 13 of these yards Furthermore, in that same discussion, DuPont's engineering witness Mr. Crouch states that warehouses are not normally included at MOW facilities

For the much larger and much more expensive buildings, NS has not provided any description of what would be stored in them. DuPont has already demonstrated that they are not needed for MOW materials. Locomotive items will be stored at the locomotive repair facilities.[387] Likewise, car items will be stored at the car repair contractor's facilities Office supplies will be stored at the various DRR offices. NS has not supported the need for these storage facilities on the DRR

DuPont has not included these storage facilities on Rebuttal.

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[386] *See* NS Reply e-workpapers "DRR Facilities List Reply xlsx," and "DRR Cost per Building Facility Reply xls."

[387] In fact, NS's locomotive shop design, which DuPont has accepted on Rebuttal, includes four separate locations for storing locomotive repair items *See* NS Reply e-workpaper "DRR Locomotive Shop Floor Plan pdf."

o. Miscellaneous Buildings

Although not discussed in NS's Reply evidence, NS included the costs for 42 miscellaneous buildings measuring 400 square feet – three (3) buildings at each of eight (8) hump yards, two (2) buildings at each of five (5) large flat yards and one (1) building at eight (8) large intermodal facilities.[388] NS provided no explanation of the purpose of these buildings. Therefore, DuPont has not included them on Rebuttal.

p. Foundation Designs

NS claims that DuPont did not account for the piles and caissons necessary to support some buildings. NS included costs for these items with the costs for the DRR's headquarters building and major warehouse buildings.[389] As noted previously, DuPont has accepted NS's cost per square foot for the headquarters building but rejected the major warehouse buildings included by NS.

q. Signal Maintainer Buildings

NS claim's that DuPont did not provide housing for signal maintainers [390] NS is wrong. DuPont recognized the need to house signal maintainers and included space for them in its MOW buildings.[391]

NS claims that it is standard railroad practice to provide storage areas for communications and signal maintainers apart from maintenance of way track gangs and for that reason, NS included 150 separate signal maintainer buildings.[392]

DuPont disagrees with NS. NS has not shown that it currently has such facilities or supported its claim of the need for separate storage areas Furthermore, for the cost of the signal

[388] *See* NS Reply e-workpaper "DRR Facilities List Reply.xlsx," tab "Facilities Costs," Column (U).
[389] *See* NS Reply, p. III-F-279.
[390] *Id*
[391] *See* DuPont Opening, p III-F-47
[392] *See* NS Reply, p. III-F-268.

maintainer building, NS did not use the cost of a signal maintainer building but rather used the cost of a facility that it considered appropriate in size.[393] This is a clear indication that such facilities do not exist on NS. Finally, separate buildings for signal maintainers have not been included in any other SAC proceedings.

For the foregoing reasons, DuPont has not included NS's 150 signal maintainer buildings.

r. Intermodal Terminals

On Opening, DuPont did not include intermodal terminal facilities but, as explained in Part III-B, DuPont agrees that intermodal yard facilities are required at 29 of the 31 locations identified by NS and DuPont has accepted NS's sizes for the intermodal terminals included. However, as discussed above under "Other Facilities / Site Costs," NS's paving and lighting costs for these facilities are grossly overstated and have been adjusted by DuPont on Rebuttal.

s. Bulk Transfer Facilities

On Opening, DuPont did not include bulk transfer "(TBT") facilities As explained in Part III-B, DuPont agrees that small bulk transfer facilities are required at eleven of the fourteen locations identified by NS and DuPont has accepted NS's sizes for the bulk transfer terminals included. However, as with its intermodal facilities, NS overstated the site costs for these facilities.

Each of these locations includes less than 2.5 miles of track, yet NS includes an average of $2.4 million in site costs for each location, the majority of which is NS's overpriced lighting As discussed above, DuPont has modified NS's lighting costs.

NS also claims to have added security fencing and gates around the entire facility but DuPont was unable to locate where NS included this cost. In any event, fencing is not needed here. These facilities are used to transfer bulk commodities and other items like plastic pellets

[393] *Id.* p. III-F-279

from railcars to trucks These are not the sort of items that require protection from theft. Furthermore, NS has not supported its assertion that its existing bulk transfer facilities have security fencing. DuPont has not included fencing for bulk transfer terminals in Rebuttal.

t. Automotive Facilities

On Opening, DuPont identified and included eight (8) automotive yards and included costs for these facilities [394] As discussed in Part III-B, on Reply, NS eliminated five automotive yards from DuPont's yard list, modified the three other automotive yards to different type yards and then added eight (8) automotive yards. A comparison of the automotive yards included by DuPont and NS reveals that NS included seven (7) of the same yards that DuPont did. The one difference is that NS converted DuPont's Avon Lake, OH automotive yard to an industrial support yard and added an automotive yard in Chicago.

On Rebuttal, as explained in Part III-B, DuPont has accepted NS's Chicago automotive facility and removed the Avon Lake, OH automotive facility for the same total of eight (8) automotive facility locations on the DRR. DuPont has also accepted NS's sizes for these facilities. As noted above, DuPont included the costs for one guard booth per automotive facility in opening and continues to do so in Rebuttal but has accepted NS's cost for the guard booth. DuPont has modified its Opening costs for these facilities to reflect NS's sizes accepted on Rebuttal and made the lighting modifications discussed previously

8. Public Improvements

While public improvements are discussed in detail below, many of the costs for such items are included in other investment categories, such as track construction, bridges and signals. Differences between DuPont and NS are addressed below.

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[394] *See* DuPont Opening e-workpapers "DRR Yard Matrix errata xlsx," tab "DRR YARDS," and "DRR Facilities Cost errata.xlsx," tab "Auto Yards "

a. Fences

On Opening, DuPont included fencing for its yards and automotive facilities. Fencing was not used on other portions of the DRR.[395] NS accepts DuPont fencing specifications in general, but it added fencing at "key Maintenance-of-Way and signal facilities."[396]

DuPont was unable to find where NS included fencing for MOW or signal facilities in its construction costs and, therefore, is unable to respond to NS. On Rebuttal, DuPont has continued to include fencing at the DRR yards and automotive facilities.

b. Signs and Road Crossing Devices

The parties generally agree on the signs to be included However, NS added one more category of signs, emergency notification signs at railroad crossings, which include an "800" number to call in case of emergency. DuPont accepts these signs and includes them on Rebuttal.

NS rejected DuPont's installation costs for crossbucks stating that DuPont improperly relied on the Tennessee Department of Transportation's ("TDOT") costs for highway signage instead of TDOT's cost for railroad crossbuck signage. NS also claims that DuPont's installation cost does not take into account additional measures required to install signage on the DRR right-of-way. NS substituted a cost for crossbuck installation based on costs from actual NS projects.[397] On Rebuttal, DuPont has accepted NS's cost for crossbuck installation.

c. Grade-Separations

Graded-separated crossings are addressed in Part III-F-5.

[395] *See* DuPont Opening, p. III-F-48
[396] *See* NS Reply, p. III-F-280.
[397] *Id.* p III-F-281.

d. At-Grade Crossings

NS accepts DuPont's number of at-grade crossings but rejects DuPont's unit cost per track-foot of crossing.[398] On Rebuttal, DuPont accepts NS's unit cost per track-foot of crossing

e. At-Grade Crossing Detours

NS claims that DuPont failed to include costs for roadway detours and signage while roads are closed for DRR track and crossing construction.[399] Not only is NS incorrect, the costs included by NS are a double-count.

DuPont included costs in Opening for road detours under Roadbed Preparation and NS accepted those costs.[400] It has been a long-established precedent that a stand-alone railroad only needs to include the costs for road detours on lines built subsequent to the ICC Engineering Reports.[401] NS's inclusion of additional costs for road detours is a double-count and should be rejected.

f. At-Grade Crossing Vegetation Removal

NS includes costs for vegetation removal at highway at-grade rail crossings.[402] These costs are a double-count and should be rejected. Both parties included costs for clearing and grubbing in their respective roadbed preparation costs[403] and both parties included annual costs for vegetation control in their respective maintenance-of-way costs.[404]

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[398] *Id*, pp III-F-282-283
[399] *Id*, pp III-F-283-284.
[400] *See* Part III-F-2-e-vii, *supra*. *See also* NS Reply, p III-F-115
[401] *See* DuPont Opening, p III-F-23 and note 54.
[402] *See* NS Reply, pp. III-F-284-285.
[403] *See* Part III-F-2-a, *supra*. *See also*, NS Reply, pp. III-F-51-54.
[404] *See* DuPont Opening, Exhibit III-D-3, pp 22-23 *See also* NS Reply, pp III-D-252-253

9. Mobilization

On Opening, DuPont applied a 2.7 percent mobilization factor to all DRR road property investment accounts except land NS accepted DuPont's factor.[405] However, NS added nearly $112 million in mobilization costs for land under the guise of "real estate acquisition costs."[406] NS's costs are improper and should be rejected.

The Board has consistently held that mobilization only applies to construction costs.[407] In Simplified SAC cases, the Board has expressly stated that mobilization only covers "road preparation, track, tunnels, bridges and culverts, signals and communications, buildings and facilities, and public improvements."[408]

Despite this unequivocal precedent, NS has requested that the Board include nearly $112 million in extra mobilization costs to cover asserted "real estate-acquisition costs." DuPont has already included sufficient costs to cover the acquisition of the real estate needed for the DRR (see Section III-F-1), but NS would have the Board also add a variety of supplemental costs such as title work, negotiations, expert appraisals, recording fees, and numerous other additional costs.[409] The Board should deny NS's request to inflate the mobilization figure for the DRR with supplemental costs for real estate acquisition[410].

The justification provided by NS for this departure from established precedent is that the DRR is purchasing a "massive amount of real estate" in an "incredibly short period of six

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[405] *See* NS Reply, p. III-F-285

[406] *Id*, pp. III-F-285-290

[407] *See AEPCO*, p. 132 ("Mobilization involves the marshaling and movement of people, equipment, and supplies to the various construction sites and other pre-construction coordination and activities"); *FMC*, p. 818 ("Mobilization costs reflect the cost of assembling equipment, personnel and facilities at designated places so that construction may commence"), *APS*, p. 401 ("Mobilization costs cover expenses associated with moving personnel, materials, supplies, and equipment to job sites and the establishment of offices and other facilities prior to commencement of a construction project.")

[408] *See Simplified Standards*, p. 48.

[409] *See* NS Reply, p. III-F-289

[410] *See APS*, pp. 402-403 (rejecting railroad attempt to add "transaction costs" to real estate valuation).

months."[411] The Board should summarily reject such a justification as an impermissible barrier to entry and contrary to basic SAC principles As stated by the ICC, "any restriction in the supply of resources necessary to construct the SARRs in the minimum time dictated by technological feasibility represents a barrier to entry."[412] Moreover, the implicit claim that the DRR is dramatically beyond the scale of any prior SARR is not tenable. NS has proposed that the DRR should have 7,343.55 route miles,[413] which is only 39% larger than the SARR in *McCarty Farms*.[414]

NS also contends that the supplemental costs are necessary because they represent "real world" land acquisition costs that NS itself incurs when it buys land.[415] This is a classic barrier to entry that should be rejected by the Board.[416] NS has not shown, or even attempted to show, that it actually incurred these types of costs when it (or its predecessors) originally acquired the right-of-way that is being replicated by the DRR.[417] NS's attempt to include mobilization costs for land acquisition is reminiscent of the effort of certain defendants to include an assemblage factor in real estate acquisition – an effort that has been rejected by the Board unless the defendant can show that it paid such a cost.[418]

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[411] *See* NS Reply, p III-F-286

[412] *See Coal Trading*, p 413 *See also WTU*, p 471 (rejecting assertion of inflated costs because "[e]xisting railroads were built on a piecemeal basis, and were not saddled with a need to marshal, in such a short period of time, the resources required to construct a 1,400-mile rail system ")

[413] *See* NS Reply, p III-B-6

[414] *See McCarty Farms*, p 490 (using 4,469 3 route miles)

[415] *See* NS Reply, pp III-F-286-287

[416] *See Coal Trading*, p 413 ("Defendants' argument that they too would face these costs if they entered the market today is irrelevant to the question of whether entry barriers exist for this market The entry process actually faced by the incumbent was quite different from that hypothesized for the new entrant ")

[417] *See McCarty Farms*, p 506 ("Only when the incumbent carrier has incurred a sunk cost should that cost be included in the SAC analysis ")

[418] *See Duke/NS*, p. 169 (n. 97) (assemblage factor is an impermissible barrier to entry unless the defendant railroad can show that it incurred such costs for the rail line at issue); *see also WTU*, pp 672-673 ("the cost of needed permits, licenses and environmental compliance also must be considered as a barrier when that cost was not incurred by the incumbent ")

Not only has NS failed to make any attempt to show that it incurred these supplemental real estate acquisition costs for the lines replicated by the DRR, but the predecessor railroads to NS benefited from federal land grants. Consequently, it cannot be the case that the predecessors to NS incurred "particularly significant" costs "to identify and negotiate with landowners."[419] In fact, some of the NS rail lines replicated by the DRR were built via federally granted land. The NS line between Meridian, Mississippi and Chattanooga, Tennessee originated in federal land grants to the Northeast and Southwest Alabama Railroad ("NE & SW RR") and the Wills Valley Railroad ("WVRR"). These land grants were originally made by the federal government in 1856 (see Public Law 34-41, 11 Stat. 17), and then assigned to the NE & SW RR and the WVRR by the State of Alabama.[420] The rail line from Chattanooga to Meridian eventually came to be owned by the Alabama Great Southern Railroad, which was absorbed by the Southern Railway and, finally, NS itself.

10. Engineering

The parties agree on the application of a 10 percent engineering additive to the total construction cost, excluding land acquisition costs.[421]

11. Contingencies

The parties agree on the application of a 10 percent contingency factor to the total construction cost, excluding land acquisition costs.[422]

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[419] *See* NS Reply, p III-F-286

[420] *See* Acts of the Sixth Biennial Session, at p 430-431, Joint Resolution of the Alabama General Assembly (January 30, 1858)

[421] *See* NS Reply, p. III-F-290

[422] *Id.*

12. Construction Schedule

NS accepts DuPont's 30-month construction period but adds costs "to account for the real world effect of lost production due to winter cold and rainfall."[423] NS's added costs are unnecessary as well as a barrier to entry and should be rejected.

Over 75% of NS's added costs are applied to grading activities.[424] The DRR's 30-month construction schedule has sufficient flexibility to accommodate a shifting of the grading activities should the need arise.[425] Under DuPont's construction schedule for the DRR, grading activities are not scheduled to begin until over 50% of the land has been acquired If necessary, grading activities could begin sooner. Conversely, there is a three-month window at the end of the construction schedule that can be used if necessary [426]

Under the theory of unconstrained resources, the DRR could accelerate all of the construction processes identified by NS as affected by winter (earthwork, bridges, tunnels, sub-ballast, ballast and track construction) in the non-winter months through the deployment of more personnel and equipment

The DRR would handle rain-delayed construction in the same manner, i e., flexibility is available in the construction schedule plus construction could be accelerated and/or additional resources deployed as necessary to allow for days when rain (or other weather events) would prevent construction work

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[423] *Id.*

[424] *See* NS Reply e-workpaper "DRR Winter Costs by Division NS Reply xlsx," tab "Cost Summary" where $311 million out of a total of $405 million ($344 million for winter and $61 million for weather delays) is assigned to earthwork activities

[425] In fact, the DRR schedule is sufficiently long enough to accommodate changes in the schedule during any season, if necessary Under the concept of unconstrained resources, the construction schedule only needs to be as long as the most demanding project. On the DRR, the most demanding project is the Lake Pontchartrain Bridge which could be completed in 26 months This project would be unaffected by NS's winter costs and only slightly affected by NS's alleged days lost to rain events

[426] This three-month window is to allow for operational testing but the entire railroad does not have to be complete in order to begin testing. Testing can be started on those sections that are complete and finish up as the last sections are completed

DuPont also notes that there are several problems with NS's calculations. NS assumes average production during all months allotted to an activity. As noted above, the DRR would increase construction activity, if necessary, in the non-winter months. In addition, as discussed throughout this Part III-F, NS's calculations are based on overstated quantities, overstated unit costs and unnecessary tasks (such as stripping, undercutting and over-excavation of rock)

Finally, NS's addition of winter costs has been previously rejected by the STB[427] and costs associated with weather delays have never before been presented in a SAC proceeding.

NS's additional costs are unwarranted, overstated, have been rejected by the STB in the past and must be rejected here. A least-cost, most efficient railroad such as the DRR would certainly make adjustments in the schedule before incurring these types of costs.

13. Joint Facilities / Shared Assets

NS Reply Section III-F-13 takes the position that the DRR must pay for the construction of jointly held lines over which the DRR operates via operating agreements with the entities that own the lines. NS's position is that, because NS is a part owner of the lines in question, the DRR must pay a fraction of the hypothetical construction costs of the segments equal to the NS ownership percentage of the lines

Specifically, NS states

> NS has a significant ownership interest in several of the foreign railroads traversed by the DRR, including the Conrail Shared Asset Areas, the Terminal Railroad Association of St Louis (TRRA), Indiana Harbor Belt (IHB), and the Belt Railway of Chicago (BRC). Because NS's rights to operate over these lines are an inextricable part of its ownership interests, the DRR could exercise such operating rights only if it acquired NS's ownership rights in those lines. Accordingly, the DRR must pay the cost of construction of NS's share of those lines, including roadbed preparation costs.[428]

[427] *See Otter Tail*, p. D-18.
[428] *See* NS Reply, p. III-F-58

NS's position is wrong because the joint facility railroads are third party entities, not co-defendants Furthermore, in the case of Conrail and IHB, the ownership interest in these third parties is held by another third party, NS Corporation, not by NS Rail, and the DRR is stepping into the shoes of NS Rail, not NS Corp In the case of the BRC and TRRA, NS opportunistically treats these partially-owned, third-party NS Rail subsidiaries different from another partially-owned subsidiary, TTX Company, simply to achieve a result-oriented objective.

However, even if the Board were to agree with NS's assertion that the DRR is required to "acquire NS's partial ownership rights" for the lines in order to participate in the operating agreements, NS has employed an inaccurate and improper methodology to determine the amount that the DRR would pay to acquire those rights. First, the DRR's ownership cost would not be determined based on replacement construction costs, but rather on a price negotiated under the going concern assumption. Second, NS fails to include the revenue share that NS earns on the facilities as a part owner (through fees paid by users of the facilities), so NS's model forces the DRR to pay double for its use of the facilities while receiving no benefit from its ownership stake.

a. DRR Is Not Required To Construct The Facilities Of Non-Defendant Third Parties

NS's assertion that the DRR must also acquire NS's ownership interests in Conrail, IHB, the BRC, and the TRRA is predicated upon an incorrect interpretation of the Board's *AEPCO 2005* decision. That decision addressed a very different scenario than the scenario faced by the DRR.

In the *AEPCO* case, the issue movement was a BNSF-UP joint line movement, and both BNSF and UP were defendant railroads The SARR in that case was comprised of segments from both BNSF's and UP's rail networks. The SARR opted not to build an intermediate

segment of rail that was owned by UP and over which BNSF had trackage rights. The reason the Board rejected the arrangement posited by AEPCO was that, because the rail line was wholly owned by a co-defendant, the SARR would not be bearing the full cost of serving the issue and other selected traffic without constructing the facility

The Board stated

> Complainants have long been permitted to hypothesize a SARR that would utilize trackage rights...where those trackage rights have replicated how the defendant railroad was actually moving the issue traffic, and where the line has belonged to a third-party, i.e., a railroad that was not a defendant in that rate case. In those cases, use of trackage rights was allowed in the SAC analysis because the third-party carrier was not responsible for providing the service and the revenue requirements of the third-party carrier were not at issue in the rate case.[429]

The key phrase here is clearly "where the line has belonged to a third-party." Conrail and IHB are clearly independently operating third-parties. Also, the BRC and TRRA, while technically subsidiary companies in that they are commonly held, in part, by NS Rail, operate independently.

More to the point, however, none of these railroads are co-defendants in this proceeding, they are not responsible for providing the service, and their revenue requirements are not at issue in this case Therefore, the NS attempt to require the DRR to incur ownership costs for these joint facilities and to calculate those costs based upon replacement values is unwarranted and improper.

i. NS Rail Does Not Own Conrail Or IHB

NS argues that the DRR must assume NS's role as part owner of Conrail and IHB if DRR wishes to step into NS's shoes. However, NS Rail does not own any part of Conrail or IHB. NS Rail's parent, NS Corporation, is a part owner of Conrail and IHB Moreover, NS Corporation

[429] *See AEPCO*, p. 10.

does not own Conrail's assets. Therefore, even if stepping into NS's shoes means acquiring an ownership interest in joint facilities owned by NS Rail, Conrail and IHB are not owned by NS Rail, which is the defendant in this proceeding and the provider of the rail service replicated by the DRR in the SAC analysis.[430]

As indicated in NS Rail's 2011 Annual Report Form R-1:

> ***
>
> Exact name of common carrier making this report: Norfolk Southern Combined Railroad Subsidiaries* (NS Rail) is comprised principally of Norfolk Southern Railway Consolidated.[431]
>
> ***
>
> *Norfolk Southern Combined Railroad Subsidiaries (NS Rail) includes the affiliated railroads under the COMMON CONTROL of Norfolk Southern Corporation (NS). The major subsidiary is Norfolk Southern Railway Company and consolidated subsidiaries (NSR) [432]
>
> ***
>
> NS is the parent holding company of NSR...
>
> Through a limited liability company, NS and CSX Corporation (CSX) jointly own Conrail Inc (Conrail), whose primary subsidiary is Consolidated Rail Corporation (CRC). NS has a 58% economic and 50% voting interest in the jointly owned entity, and CSX has the remainder of the economic and voting interests...
>
> CRC owns and operates certain properties (the Shared Assets Areas) for the joint and exclusive benefit of NSR and CSX Transportation, Inc. (CSXT) The costs of operating the Shared Assets Areas are borne by NSR and CSXT based on usage. In addition, NSR and CSXT pay CRC a fee for access to the Shared Assets Areas [433]

Further proof that the CRC and IHB rail lines in question are not owned by NS Rail can be found in the very same NS Rail R-1 schedule NS points to as proof that it holds equity interest

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[430] It also would be an impermissible barrier to entry to deny the DRR access to the same production process as NS Rail merely because NS Rail's access to certain trackage rights is attributable to its parent company's ownership interest in the joint facility railroad

[431] NS 2011 Annual Report Form R-1, p 2.

[432] *Id*, p 4.

[433] *Id*, p. 9.

in the BRC and the TRRA. Specifically, NS points out that Schedule 310 lists the BRC (25.00%) and the TRRA (14.29%) as entities in which NS Rail holds an ownership interest.[434] Conrail and IHB are notably absent from the list of entities included on Schedule 310, because NS Rail simply does not hold an equity interest in either.

Furthermore, when NS Corporation and CSX acquired Conrail, the assets were divided into three pools. assets that would become part of the NS Rail system, assets that would become part of the CSXT system; and, assets that would remain part of the Conrail System.

In a 2003 NS 8-K Report, NS explained in detail the structure of the Conrail acquisition In its presentation, NS made the following statements.

***

> The transaction structure of Conrail is easily understood if you look at a map. When we (NS and CSX jointly) bought Conrail we divided up the system to three parts: routes that went to CSX, routes that went to NS, and the Shared Asset Areas The key here is that NS and CSX bought the stock of Conrail not the assets Conrail still owns these routes, and simply leases them to the owner roads. [emphasis added]

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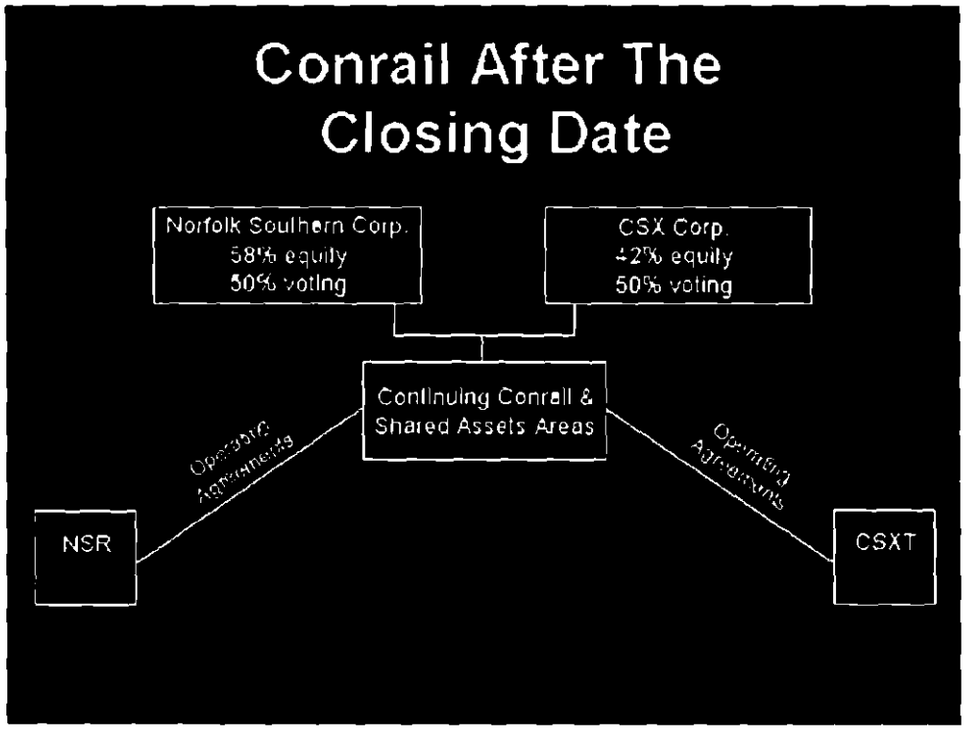
[434] *See* NS Reply, pp III-F-312, 314



> NS and CSX have joint access to the Shared Assets Areas. We both pay fees to Conrail for the use of the Shared Assets Area, and for the switching and handling services Conrail employees provide. Using operating and lease agreements, a substantial portion of Conrail's assets were allocated to NS and CSX for our use, but the ownership of Conrail assets remains at Conrail. [emphasis added][435]

NS Corporation simply did not buy the assets of Conrail. Rather, Conrail maintained its ownership of the assets that it operates on the behalf of its lessee roads. From the acquisition date in 1998 through August 27, 2004, Conrail continued to own and operate all of the track and structures it owned and operated before the 1998 acquisition The Conrail network that was not part of the Shared Asset Areas was divided into two separate operating entities (PRR and NYC) which were run by Conrail for the benefit of NS Rail (PRR) and CSXT (NYC.) PRR made up

[435] Slides and comments of John P. Rathbone, Senior Vice President and Controller, Norfolk Southern Corporation, Special Securities Analyst Meeting, Brosnan Forest, S.C., February 28, 2003 (part of Norfolk Southern Corporation's Form 8-K Report and Presentation to the SEC), available online at: http://yahoo.brand.edgar-online.com/EFX_dll/EDGARpro.dll?FetchFilingHTML1?ID=2182085&SessionID=n1mvHqRGPh-FN77.

approximately 58 percent of the non-Shared Asset Areas Conrail network, and NYC made up approximately 42 percent. NS applied purchase accounting to account for the joint acquisition of Conrail. As noted by NS:

> This requires the buyers to revalue the acquired company's balance sheet to reflect the purchase price. Assets and liabilities are stated at their fair market value If the purchase price exceeds the fair value of the assets and liabilities, goodwill is created. However, in our case the fair value of the assets exceeded the purchase price and no goodwill was generated [436]

When judged against Conrail's assets, NS Corporation clearly paid less than fair value to acquire Conrail Furthermore, because the DRR is stepping into the shoes of NS Rail, not NS Corporation, it does not need to assume ownership of any facility NS Rail itself does not own, including CRC and IHB

ii. The DRR Is Not Required To Acquire The NS Rail Ownership Interest In The BRC And TRRA

With respect to the BRC and TRRA, NS claims that, because they are listed in NS Rail's R-1 Schedule 310 as entities in which NS Rail holds an equity interest, the DRR should be forced to assume the same position in order to step into NS's shoes and utilize the trackage rights terms NS uses over those lines. This NS position is highly opportunistic and result-oriented because it is inconsistent with NS's treatment of another partially-owned NS Rail subsidiary, TTX Company, in the SAC analysis.

Schedule 310 of the NS R-1 indicates that NS holds a 19.65 percent ownership interest in TTX Company, which is wholly owned by the North American Class I rail carriers and which "own[s] and manag[es] a fleet of more than 200,000 flat cars, boxcars and gondolas that move **intermodal** containers, automobiles, lumber, machinery, building materials, steel and other

[436] *Id*

commodities across Canada, Mexico and the United States."[437] In calculating its operating costs in Opening, DuPont classified TTX intermodal cars as railroad-owned equipment, and assumed it would lease and provide a pool of intermodal flat cars to perform this service. In Reply, NS states that DuPont's calculation of car hire costs is understated, and that, "the primary source of DuPont's understatement is an improper conversion of the car owner."[438] NS further stated that, "Review of the traffic records indicates that roughly three-quarters of the DRR's intermodal shipments moved in private equipment, consisting of more than 22,000 different flat cars."[439] NS's work paper supporting this claim shows that all of the 22,000 plus cars NS identified as private cars are owned by TTX Company[440] To "correct" DuPont's statement of car costs related to DRR intermodal shipments, NS "applies the private car charge—not DuPont's substituted lease cost—for 69% of the DRR's intermodal flat-car miles, to reflect NS' real world experience." Here, NS properly treated the TTX Company as an independent third party, despite the fact that NS owns 19 65% of TTX Company, as clearly indicated on its 2011 R-1 Schedule 310

NS clearly and correctly recognized that DRR should not be required to acquire an ownership stake in TTX Company to step into NS's shoes and move intermodal traffic. Rather, NS applied the TTX car hire rate to the DRR intermodal traffic moving on TTX cars. This is no different conceptually from the DRR's payment of trackage rights to operate over the BRC or TRRA. Under the NS's flawed logic and methodology that it seeks to apply in Section III-F-13 with respect to the rail lines in question, DRR would need to acquire an ownership stake in TTX company comparable to that held by NS.

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[437] *See* http://www.ttx.com/AboutTTX/company-overview.aspx.
[438] *See* NS Reply, p. III-D-30
[439] *See* NS Reply, p. III-D-31
[440] *See* NS Reply e-workpaper "FlatCar_Inst_Num.xlsx," tab "Results."

b. NS Has Not Properly Calculated The DRR's Ownership Costs For NS-Owned Joint Facilities

As DuPont discussed in the preceding section, NS is simply wrong to require the DRR to acquire an ownership interest in Conrail, IHB, the BRC and the TRRA. However, even if the Board were to agree with NS, NS clearly has not properly calculated what would be the DRR's ownership cost for the trackage rights used. In addition, while NS attempts to impose the costs of ownership upon the DRR, it denies the DRR certain benefits of the same ownership.

c. NS Improperly Substitutes Replacement Costs For Ownership Costs

The metric NS employs to approximate the "ownership costs that NS incurred to obtain its rights" is the present day replacement costs of the physical plant that makes up the facilities. Even if it were appropriate for the DRR to make a capital expenditure to acquire ownership interest in the line segments in question, including the Shared Assets Areas (which it is not), the present value construction costs of the rail lines' physical plant would not provide a reasonable approximation of the ownership acquisition costs

NS did not acquire its ownership interest in any of the joint facilities by constructing a portion of the facilities In its discussion of the BRC agreement that NS uses to support its claims that DRR should be expected to partially construct a line that is commonly held by multiple ownership interests, NS points out that, "any railroad wishing to become a party to the agreement is required... to purchase a capital stake in the BRC [in the form of] not less than the required number of par value shares of the capital stock of the Belt Company" [441] The par value of a security is the nominal value determined by the issuing company to be its minimum price However, NS does not propose that the DRR be afforded the opportunity to purchase a stake in the BRC via the stock purchase channel that actually exists as explicitly outlined in the

[441] *See* NS Reply, pp III-F-313-314, emphasis in original

agreement to which NS cites in support of its position. Rather, NS would force the DRR to physically construct a portion of the BRC line segments it uses. Therefore, NS's Reply methodology cannot possibly be construed as an attempt to "approximate the ownership costs that NS incurred to obtain its rights "

Similarly, NS Corporation obtained its ownership stake in the Conrail Shared Asset Areas, (along with its IHB position) as part of the Conrail acquisition transaction But the purchase price for the Conrail acquisition was based on a stock buyout, not on the present-value replacement cost of the Conrail physical plant. Likewise, NS acquired its ownership rights in the TRRA "by succession to the interests of NS's predecessor railroads the Wabash Railroad Company and the Southern Railway Company, which acquired ownership interests in TRRA in 1889 and 1902, respectively."[442]

As part of the SAC analysis, the Complainant must develop construction cost estimates for the portions of the defendant railroad's system it chooses to include in its system. The footprint of the DRR system will not change whether the DRR is required to acquire ownership interest in the lines in question or not. That is, the question is not whether the DRR system should be physically expanded through further construction, but rather whether the DRR must make a capital outlay to enjoy ownership status of an entity that will exist and operate with or without the DRR Therefore, NS's construction cost estimates are irrelevant and do not serve as a reasonable proxy for the acquisition costs one could expect to pay for a stake in a going concern. NS has completely failed to provide a reasonable approximation of the actual cost to acquire ownership in the subject rail lines, even if one were required.

As discussed above, DRR should not be required to acquire an ownership position in the Shared Asset Areas, as NS Rail does not itself hold an ownership stake. However, even if it

[442] *See* NS Reply, p. III-F-315

were appropriate, the ownership position should be based on the actual purchase price paid by NS Corporation NS paid $5.8 billion, and CSX paid $4.2 billion ($10 billion total) for Conrail's roughly 10,700 route miles in 1998. This equates to $934,579 per route mile The purchase price and ownership stake for NS and CSX was based on the relative miles over which each would operate following the acquisition. The DRR operates over 69.7 miles of the Conrail Shared Asset Areas At $934,579 per route mile, the cost to NS/CSX to acquire 69.7 miles of Conrail was $65 1 million.[443] If the DRR were to step into NS' shoes and acquire a 58 percent ownership stake in the portion of the Shared Asset Area over which it operates, that ownership stake would cost $37.8 million.[444] Restated at 2010 levels, this equates to $50 million dollars [445] This is a far cry from NS' estimate of $352.9 million in capital costs to construct the portion of the Conrail Shared Asset Area used by the DRR.

Similarly, the BRC operating agreement reads, in part:

> Whereas, each of the Railway Companies now is the owner of at least 2,600 shares, of the par value of $100 each, of the capital stock of the Belt Company and each of the Railway Companies has agreed to execute this Agreement;[446]

NS Rail owns 25 percent of BRC, as does CSX. BSNF and CN each own 16.67 percent, and UP and CP each own 8.33 percent. Based on UP and CP's minimum share status and the above whereas clause, NS owns 7,803.12 shares (25 / 8.33 x 2,600). At the par value of $100, DRR would need to pay $780,312 to step into NS' shoes as a 25% owner of BRC.[447] Alternatively, NS reported in its 2010 R-1 that its equity in the BRC at the start of 2010 was $14 991 million[448] associated with its 25% stake. The BRC encompasses 28 route miles, 16.2 of

[443] $934,579 per mile x 69.7 miles = $65,140,156
[444] 58 percent ownership stake times $65,140,156 = $37,781,291
[445] *See* DuPont Rebuttal e-workpaper "Acq Cost and Rev Est xlsx," tab "Conrail Acq."
[446] *See* NS Reply e-workpaper "BRC Operating Agreement.pdf"
[447] *See* DuPont Rebuttal e-workpaper "Acq Cost and Rev Est.xlsx," tab "BRC."
[448] 2010 NS R-1, Schedule 310A, Line 2, Column (b)

which (57 86%) are used by the DRR.[449] Accepting NS's framework in which the acquisition costs are based on the portion of the system used by DRR, the acquisition costs for DRR's stake in the BRC as of January 1, 2010 would be $8.673 million.[450] Either way, NS' estimate of $57.4 million for the capital costs to construct a portion of the BRC is clearly vastly overstated.

Similarly, CP Rail (aka SOO Line) reported in its 2010 R-1 that its equity in the IHB at the start of 2010 was $39 123 million[451] associated with its 49% stake. NS and CSX jointly own the remaining 51 percent of IHB, with NS controlling 58% of that amount, or 29.58 percent of IHB. The IHB encompasses 54 route miles, 15.6 of which (28.89 percent) are used by the DRR.[452] Accepting NS's framework in which the acquisition costs are based on the portion of the system used by DRR, the acquisition costs for DRR's stake in the IHB as of January 1, 2010 would be $6.824 million.[453] NS' estimate of $62 1 million for the capital costs to construct a portion of the IHB is clearly vastly overstated.

Finally, UP Railroad reported in its 2010 R-1 that its equity in the TRRA at the start of 2010 was $34.428 million[454] associated with its 42 9 percent stake. NS owns 14.29% of TRRA per its Schedule 310 filing. The TRRA encompasses 60 route miles, 9.78 of which (16 3%) are used by the DRR.[455] Accepting NS's framework in which the acquisition costs are based on the portion of the system used by DRR, the acquisition costs for DRR's stake in the TRRA as of January 1, 2010 would be $1.869 million[456] NS' estimate of $19.7 million for the capital costs to construct a portion of the IHB is clearly vastly overstated.

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[449] *See* DuPont Rebuttal e-workpaper "Acq Cost and Rev Est.xlsx," tab "BRC "
[450] *Id.*
[451] 2010 SOO R-1, Schedule 310A, Line 1, Column (b).
[452] *See* DuPont Rebuttal e-workpaper "Acq Cost and Rev Est.xlsx," tab "IHB "
[453] *Id* (0.2958/0.49x.2889x$39 123M).
[454] 2010 UP R-1, Schedule 310A, Line 7, Column (b).
[455] *See* DuPont Rebuttal e-workpaper "Acq Cost and Rev Est xlsx," tab "TRRA "
[456] *Id.* (0 1429/0 429x.163x$34 428M)

In summary, NS posited on Reply that the DRR would be required to construct a portion of the Shared Asset Areas and Short Lines in which NS holds an ownership stake, and over which the DRR operates, totaling 50 route miles at a cost of $492.3 million. For reasons outlined above, the DRR should not be required to acquire an ownership interest in these independently operated railroads to operate over them via trackage rights. However, should the Board believe the DRR must acquire an ownership stake in the companies to operate over them using trackage rights, a more realistic estimate of the cost to acquire ownership in (not partially construct) the lines would be $66.4 million.[457] If the Board found it necessary to do so, it could treat this capital outlay as a non-depreciable asset in the DCF model.[458]

d. NS Includes Ownership Costs But Ignores Offsetting Revenues

NS's argument rests heavily on the premise that the fees NS Rail pays to use the rail lines in question are inextricable from NS Corporation's status as a part owner of the facilities (or, in the case of the Conrail Shared Assets Areas, a part owner of the corporation that owns the facilities). But the facilities generate revenues through the collection of the very fees in question, and those revenues are distributed to the owners. Therefore, as a part owner of the facilities, NS Corporation (Conrail, IHB) or NS Rail (BRC, TRRA) recovers much of the fees it pays to use the facilities. However, while NS complains that DRR could not "exercise all of the rights and privileges that accrue to NS as a co-owner of the Partially Owned Lines without paying anything for NS's ownership interests or shouldering the NS's responsibilities as an owner."[459] NS fails to include any mechanism in its analytical framework to account for the revenues DRR would earn as a part owner of the subject facilities. Shouldering the responsibilities of an owner by way of

[457] *See* DuPont Rebuttal e-workpaper "Acq Cost and Rev Est xlsx," tab "Investment-Anl Rev."

[458] Because the investment in affiliated companies is a non-depreciable asset, a line would need to be added to the Investment SAC level to allow the costs to be added to the capital carrying charges in the same way IDC and replacement costs are added to the capital carrying charges

[459] *See* NS Reply, p. III-F-299

assuming the owner's assets entitles the owner to reap the rewards the owner earns on those assets. Despite the fact that NS imposes construction costs on the DRR as a way to approximate its ownership responsibilities, NS provides no avenue for the DRR to earn revenues generated by the asset.

NS states that, "the DRR cannot step into the operating shoe and ignore the ownership shoe.... the DRR has to wear either both of NS's shoes or neither of them."[460] In essence, the NS Reply model makes the DRR pay for both shoes, but only allows DRR to wear one. If the DRR must, as NS says it does, assume ownership responsibilities, then the DRR must also be rewarded with the revenues earned by the owners.

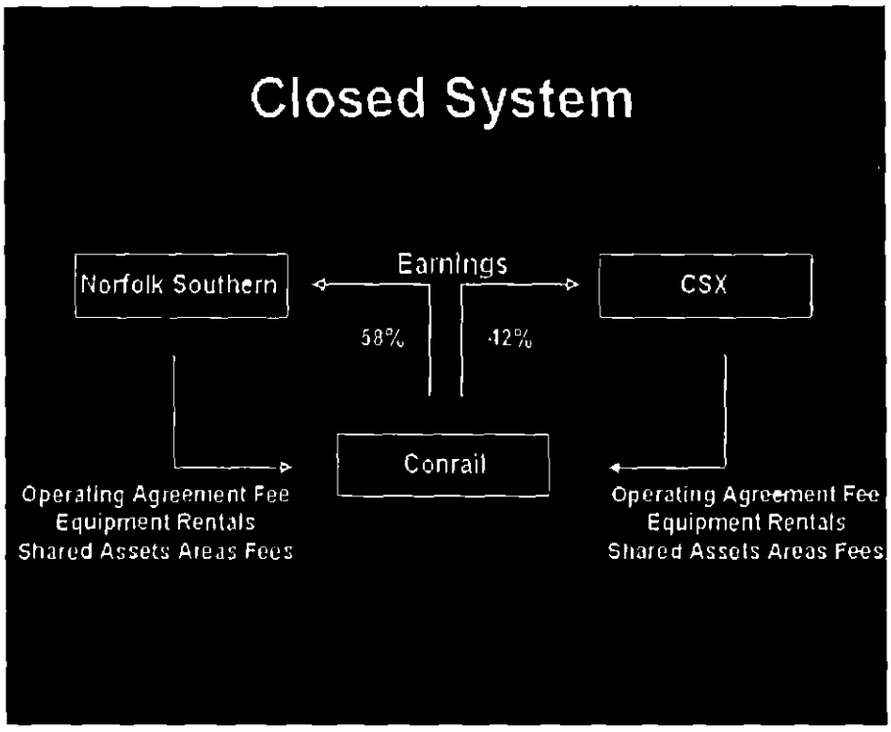
Therefore, the NS framework results in an overcharge to DRR, which is forced to assume all of the costs[461] but receive none of the benefits (i.e., revenue streams) associated with ownership

As part of its 2003 8-K report, NS made the following statements with respect to Conrail:

***

> It is important to note that the structure is, in essence, a closed system. Payments to Conrail, less expenses, come back to NS and CSX through equity accounting Three types of cost are paid to Conrail. 1) Payments for operating over Conrail's track, 2) Equipment rentals, and 3) Shared Asset service fees.

[460] *See* NS Reply, p. III-F-300.
[461] Even assuming the NS cost estimates were reasonable and accurate, which, as discussed above, they are not.



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The Equity method of accounting must be used for investments where the owner can significantly influence, but not control the investee.

***

In our income statement the "one-line" consolidation is in "Conrail Rents and Services," and is comprised of several components This expense line captures the essence of the relationship with Conrail. We pay rent and get service from them, and since we derive profit from our ownership, we net that profit against the costs.

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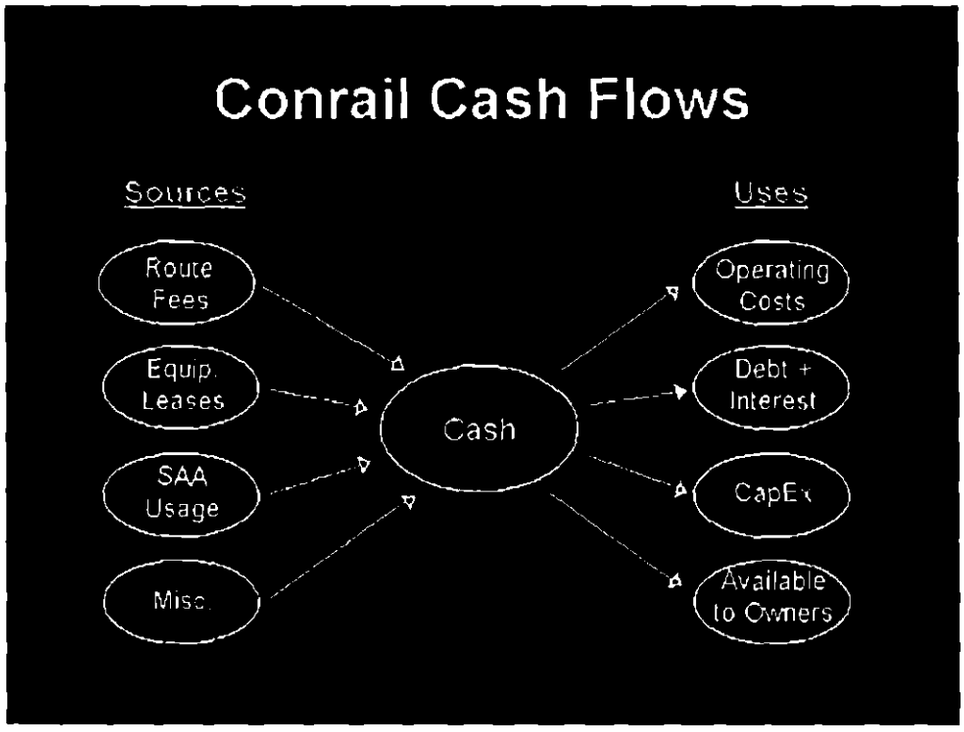
Norfolk Southern and CSX pay for Conrail Rents and Services on a monthly basis. This is Conrail's largest source of operating cash. In addition, Conrail also receives cash from interest income and some rental income



> Conrail uses the cash for its operating expenses, interest on debt and debt repayments, and capital expenditures. Because the routes and equipment fees exceed Conrail's cash needs, this additional cash is available to NS and CSX.. Our borrowing appears as a long-term liability called "Due to Conrail" and was $513 million as of the end of the year.[462]

Along with CSXT, NS Rail is clearly paying Conrail market rates for use of Conrail's assets, as Conrail is able to generate revenues far in excess of its operating costs, with the net amount being returned to NS Corporation and CSX through equity accounting practices

In 2004, NS Corporation and CSX restructured their joint ownership of Conrail.

> On August 27, 2004, NS, CSX and Conrail completed a reorganization of Conrail (Conrail Corporate Reorganization), which established direct ownership and control by NSR and CSXT of two former CRC subsidiaries, Pennsylvania Lines LLC (PRR) and New York Central Lines LLC (NYC), respectively. Prior to the Conrail Corporate Reorganization, NSR operated the

[462] Slides and comments of John P. Rathbone, Senior Vice President and Controller, Norfolk Southern Corporation, Special Securities Analyst Meeting, Brosnan Forest, S.C , February 28, 2003 (part of Norfolk Southern Corporation's Form 8-K Report and Presentation to the SEC), available online at: http://yahoo.brand.edgar-online.com/EFX_dll/EDGARpro.dll?FetchFilingHTML1?ID=2182085&SessionID=n1mvHqRGPh-FN77

> routes and assets of PRR and CSXT operated the routes and assets of NYC, each in accordance with operating and lease agreements. Pursuant to the Conrail Corporate Reorganization, the operating and lease agreements were terminated and PRR and NYC were merged into NSR and CSXT, respectively. The reorganization did not involve the Shared Assets Areas and did not affect the competitive rail service provided in the Shared Assets Areas. Conrail continues to own, manage and operate the Shared Assets Areas as previously approved by the Surface Transportation Board (STB).
>
> ***
>
> NS is continuing to apply the equity method of accounting to its remaining investment in Conrail in accordance with APB Opinion No. 18, "The Equity Method of Accounting for Investments in Common Stock "
>
> ***
>
> After the reorganization, NS' equity in the earnings of Conrail, net of amortization, is included in "Other income – net"[463]

NS would require the DRR to step into the shoes of NS Rail in terms of paying fees to access and operate over the Shared Asset Areas, but does not allow the DRR to step into the shoes of NS Corporation in terms of pulling cash from Conrail through equity accounting based on its owner status. If the DRR must acquire NS Corporation's ownership interest, then it also is entitled to the revenue benefits of that ownership.

As shown in NS's 2012 10-K report, it recorded equity earnings (NS's 58 percent share of Conrail's net annual income) of $26, $31, and $34 million under line item "Other income - net" in 2010, 2011, and 2012, respectively. The Conrail Shared Asset Areas on which this profit is earned consist of 1,202 route miles, of which DRR operates over 69.7 miles. If DRR is forced to acquire NS' 58% ownership stake in the 69.7 miles of the Shared Asset Areas it uses (5 8%) for $50 million, then it is also entitled to 5 8% of NS' annual income earned form Conrail. This amounts to $1.5-$2.0 million per year based on 2010-2012.[464]

In addition, BRC reported income of $9.2 million on $68 3 million in revenues in 1998 Conservatively, we estimate average annual income at half that level, $4.6 million in 1998

[463] NS 2006 10-K Report, Note 4, p K54-56.
[464] *See* DuPont Rebuttal e-workpaper "Acq Cost and Rev Est.xlsx," tab "SAA Revenue."

dollars, and $6.0 million in 2010 dollars. NS owns 25 percent of BRC, or $1.5 million in 2010 income due to its ownership position. To balance the income earned with NS's framework in which the acquisition costs are based on the portion of the system used by DRR, the DRR portion of 2010 income would be $862,895.[465]

Similarly, TRRA reported income of $7 million in 2011. NS owns 14.29 percent of TRRA, so it earned $1.0 million in 2011 income due to its ownership position. To balance the income earned with NS's framework in which the acquisition costs are based on the portion of the system used by DRR, the DRR portion of 2011 income would be $163,049.[466]

Because IHB is similar in size to BRC and TRRA, and because NS's ownership stake in the three short lines, and further because the DRR's use of the three systems is proportionally similar, the average of the income earned on the BRC and TRRA provides a reasonable estimate for the DRR income associated with an ownership stake in the IHB. For the reasons discussed above, DuPont believes it would not be appropriate to require DRR to acquire an ownership interest in the portions of the independently operated Shared Asset Areas and short line railroads to operate over them via trackage rights. However, should the Board believe the DRR must acquire an ownership stake in the companies to operate over them using trackage rights, it must also recognize the incomes DRR would earn due to its ownership position. These incomes would equal $3 million in the base year.[467] If the Board found it necessary to do so, it could treat this income as an offset (reduction) to annual operating costs in the DCF model.[468]

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[465] *See* DuPont Rebuttal e-workpaper "Acq Cost and Rev Est.xlsx," tab "BRC."
[466] *See* DuPont Rebuttal e-workpaper "Acq Cost and Rev Est.xlsx," tab "TRRA."
[467] *See* DuPont Rebuttal e-workpaper "Acq Cost and Rev Est.xlsx," tab "Investment-Anl Rev."
[468] The revenues coming in from the affiliated companies would be included in the operating expense level as a credit. Because these revenues will change over time as volume changes, they would be indexed for volume changes the same way other operating expenses are indexed. This also implicitly assumes the revenues received from the affiliated companies would changes at the same rate as operating costs (the RCAF).

e. Conclusions

In Opening, DuPont calculated the trackage rights fees the DRR would pay to operate its trains over the Conrail Shared Asset Areas, IHB, BRC, and TRRA based on the trackage rights NS pays to those entities under its current operating agreements. In Reply, NS disputed DuPont's calculation of the trackage rights fees that the DRR would be required to pay under those agreements and furthermore sought to impose a new requirement for the DRR to acquire an ownership interest in those lines in order to obtain the right to operate over those lines as NS does today As a proxy for the cost to the DRR of acquiring ownership interest in the four railroads, NS calculated the replacement construction costs for the entities' physical plant and multiplied it by the NS' alleged ownership interest in the entities

For the reasons discussed above, NS's argument in support of a requirement for DRR to acquire ownership interest is deeply flawed. It relies on misleading assertions regarding the ownership and operating agreements among the involved parties; it considers only the costs and ignores the revenues that flow among the railroads and their owners; it uses an absurd metric as a proxy for the cost of acquiring ownership in a going concern, and it directly contradicts NS's argument and evidence related to its treatment of TTX-owned intermodal equipment. For these reasons, DuPont rejects all of NS's acquisition costs and continues to rely on the arrangements and fee structures[469] outlined in its Opening evidence.

Should the Board decide that DRR must acquire an ownership interest in the portions of the independently operated Shared Asset Areas and short line railroads to operate over them via trackage rights, it must also recognize the DRR's right to earn a return on its investment In this case, the acquisition costs (not construction costs) would be treated as a non-depreciable asset,

[469] The issue of the correct level of the trackage rights fees is discussed in DuPont Rebuttal Part III-D

and the revenues earned from annual operations would be treated as an offset (reduction) to annual operating costs in the DCF model.

PART III-F

TAB 1

DRR ROAD PROPERTY INVESTMENT
($ in Millions)

	Item	DuPont Opening 1/	NS Reply 2/	DuPont Rebuttal 3/
	(1)	(2)	(3)	(4)
1	Land	$3,374	$5,324	$3,856
2.	Roadbed Prep 5/	3,969	9,173	4,336
3.	Track construction	8,242	10,628	8,208
4	Tunnels	444	1,096	1,081
5.	Bridges	1,928	4,348	2,273
6	Signals and Communications	1,247	2,070	1,490
7	Buildings and facilities	229	2,636	1,044
8.	Public Improvements	122	256	177
9	Subtotal	$19,555	$35,531	$22,465
10	Mobilization	437	917	503
11	Engineering	1,618	2,981	1,861
12.	Contingencies	1,824	3,371	2,097
13.	Total Road Property Investment	$23,434	$42,800	$26,926

1/ DuPont Opening, Exhibit III-F-1, May 17, 2012 Errata
2/ NS Reply, Table III-F-1, December 12, 2012 Errata
3/ DuPont Rebuttal e-workpaper "III-F Total Rebuttal xlsx"

TAB 2

Rebuttal Exhibit III-F-2

REBUTTAL REPORT
AND APPRAISAL REVIEW OF
RETROSPECTIVE APPRAISAL OF LAND FOR
E.I. DUPONT DE NEMOURS AND COMPANY (DUPONT)
STAND ALONE RAILROAD (SARR)
IN 20 EASTERN STATES

APRIL 10, 2013

FOR

L. E. PEABODY & ASSOCIATES, INC.

REBUTTAL REPORT
AND APPRAISAL REVIEW OF
RETROSPECTIVE APPRAISAL OF LAND FOR
E.I. DUPONT DE NEMOURS AND COMPANY (DUPONT)
STAND ALONE RAILROAD (SARR)
IN 20 EASTERN STATES

APRIL 10, 2013

FOR

L. E. PEABODY & ASSOCIATES, INC.

HARPS & HARPS, INC.
MERIT REAL ESTATE ANALYSIS, INC.
RAIL TRAC ASSOCIATES
1111 14th Street, NW, Suite 600
Washington, DC 20005-5603
Tel 202-682-2191 Fax 202-682-1579

April 10, 2013

Mr. Thomas D. Crowley
President
L. E. Peabody & Associates, Inc.
1501 Duke Street, Suite 200
Alexandria, Virginia 22314

Re: Rebuttal Report and Appraisal Review of:

Retrospective appraisal by FTI Consulting dated November 27, 2012, concerning the DuPont Standalone Railroad, located in 20 eastern states, representing a hypothetical right-of-way for a 7,272± mile "stand alone railroad", for a proceeding before the Surface Transportation Board

Dear Mr. Crowley:

In accordance with your request, we have reviewed the retrospective appraisal report by FTI Consulting dated November 27, 2012, concerning the underlying land value for the hypothetical DuPont standalone railroad, for a proceeding before the Surface Transportation Board.

The attached report serves not only as a review appraisal report for the above-mentioned appraisal by FTI Consulting, but also serves as a rebuttal of the land valuation section of the response filed with the Surface Transportation Board by the Norfolk Southern Railway in December 2012.

This document is a restricted use appraisal review report, as defined by the Uniform Standards of Professional Appraisal Practice. As such, the use of this report is limited to the client, L. E. Peabody and Associates, representing E. I. DuPont de Nemours and Company in the case before the Surface Transportation Board. The appraisers' opinions and conclusions set forth in this report may not be understood properly without additional information in the appraisers' work file.

The analysis and reasoning leading to the conclusions, which may be material, are set forth within the attached report. We trust this information is of assistance to you. If you have any questions or comments, please contact us. Thank you for this opportunity to be of service.

Very truly yours,

Richard R Harps

Harps & Harps, Inc.
Merit Real Estate Analysis, Inc.
Rail Trac Associates

Attachment

TABLE OF CONTENTS

CONTENTS

TABLE OF CONTENTS 4

CERTIFICATION 6

INTRODUCTION 8
How to Read this Report 8
Scope of the Appraisal Review 9

SUMMARY OF CONCLUSIONS 11
Land Valuation: Summary 11
The Appraisal Process 12
Review of Norfolk Southern's Appraisal - Summary 15
Rebuttal of NS Review of Our Appraisal: Summary 23

REVIEW OF NORFOLK SOUTHERN'S APPRAISAL 26
Failure to Account for Market Conditions and Trends 26
Failure to Account for Variations in Land Area 27
NS Appraiser Used an Inappropriate Averaging Technique 29
Stratification of Data 38
Areas NOT Physically Inspected by the NS Appraiser 46
Averaging Technique Produces Inflated Values 46
Using Same Sales Data for Both Urban and Rural Areas 54
Areas Physically Inspected by the NS Appraiser 60
Pittsburgh, PA. 62
Cleveland, OH 69
New Orleans, LA 74
Philadelphia, PA 78
Atlanta, GA 83
Columbus, OH 89
Summary: Areas Physically Inspected 94

REBUTTAL OF NS APPRAISER'S REVIEW OF OUR APPRAISAL 96
Classification of Land Uses 96
Inspection of Subject Property 99
Selection of Comparable Sales and Verification Process and Taking Proper Steps to Analyze Comparable Sales 102
Example of Our Appraisal Process 103
Improved Sales were Not Used in Our Analysis 107
Illustration of a Sound Appraisal Process 109
Assessment Data was Not Used for Land Extraction 110
Using Benchmark Information is Not a "Strong Reliance" 111
The Averaging Technique Used is Appropriate and Recognized 112

Other Responses 114
Rebuttal of NS Appraiser's Review: Summary 115
Additions to DuPont SARR 117
Modifications to Yards - Land Valuation 117

Addenda..... 120

CERTIFICATION

The Undersigned do hereby certify that, to the best of our knowledge and belief:

The statements of facts contained in this report are true and correct;

The reported analyses, opinions and conclusions are limited only by the reported assumptions and limiting conditions, and are his personal, impartial, and unbiased professional analysis, opinions and conclusions;

We have no present or prospective interest in the property that is the subject of this report, and have no personal interest with respect to the parties involved;

We have performed no other services, as an appraiser or in any other capacity, regarding the property that is the subject of this report within the three-year period immediately preceding acceptance of this assignment. We have no bias with respect to the property that is the subject of this report or to the parties involved with this assignment;

Our engagement in this assignment was not contingent upon developing or reporting predetermined results;

Our compensation is not contingent on an action or event resulting from the analyses, opinions, or conclusions in this review or from its use;

Our compensation for completing this assignment is not contingent upon the development or reporting of a predetermined assignment results or assignment results that favors the cause of the client, the attainment of a stipulated result, or the occurrence of a subsequent event directly related to the intended use of this appraisal review;

The reported analyses, opinions and conclusions were developed, and this review report has been prepared, in conformity with the Uniform Standards of Professional Appraisal Practice;

The reported analyses, opinions and conclusions were developed, and this report has been prepared, in conformity with the requirements of the Code of Professional Ethics and Standards of Professional Appraisal Practice of the Appraisal Institute;

One or more of the undersigned inspected various portions of the hypothetical right-of-way and relied on Google Earth aerial imagery for the balance;

No one provided significant appraisal, appraisal review, or appraisal consulting experience to the persons signing this certification;

The use of this report is subject to the requirements of the Appraisal Institute relating to review by its duly authorized representatives.

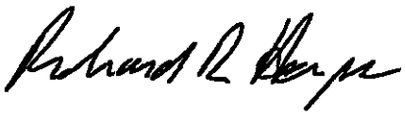
As of the date of this report, Richard R. Harps and Elizabeth W. Vandermause have completed the continuing education program of the Appraisal Institute.

As of the date of this report, Daniel C. Vandermause has completed the continuing education program for a Practicing Affiliate of the Appraisal Institute.

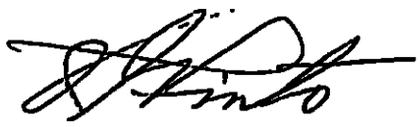
Disclosure of the contents of this appraisal review report is governed by the by-laws and Regulations of the Appraisal Institute.

Neither all nor any part of the contents of this report (especially any conclusions as to value, the identity of the appraisers or the firm with which they are connected or the MAI or SRA designation) shall be disseminated to the public through advertising media, public relations media, news media, sales media or any other public means of communications without the prior written consent and approval of the undersigned.

Signed by:



Richard R. Harps, MAI, CRE, FRICS



John G. Pinto, CRE

Elizabeth W. Vandermause, MAI

Daniel C. Vandermause

INTRODUCTION

This rebuttal report and appraisal review document is intended to serve two purposes:

1. A review of the appraisal of the land underlying the DuPont SARR, dated November 27, 2012, and submitted by FTI Consulting (referred to in this document as the "NS Appraiser"). A review appraisal is governed by the provisions of the Uniform Standards of Professional Appraisal Practice[1] (USPAP). This document is a restricted use appraisal review report, as defined by USPAP. As such, the use of this report is limited to the client, L. E. Peabody and Associates, representing E. I. DuPont de Nemours and Company in the case before the Surface Transportation Board. The appraisers' opinions and conclusions set forth in this report may not be understood properly without additional information in the appraisers' work file.
2. A rebuttal of the Appraisal Review, dated November 26, 2012 and submitted by FTI Consulting (referred to in this document as the "NS Appraiser"). This is a review of our appraisal of the land underlying the DuPont SARR, dated April 24, 2012 and submitted by Harps & Harps, Inc., Merit Real Estate Analysis, Inc., and Rail Trac Associates.

How to Read this Report

The next section of this report, titled SUMMARY OF CONCLUSIONS, contains three sections:

- Overview of Appraisal Process
- *Review of NS Appraisal*
- Rebuttal: Defense of the Harps Team Appraisal

Reading these three sections will provide an overview of the information included in this report. Page references are provided for each main point, referring to the page in this

[1] Uniform Standards of Professional Appraisal Practice (USPAP), 2012-2013 Edition, The Appraisal Foundation.

report that contains the detailed analysis and conclusions to support the main point. This allows the reader to determine the level of detail needed to comprehend each main point, and to understand the differences between the two land valuations and explain from a purely appraisal standpoint the real issues.

Scope of the Appraisal Review

- Review of the overall approach to value and compliance with recognized standards of appraisal practice and requirements of the Uniform Standards of Professional Appraisal Practice (USPAP). USPAP provides guidelines and standards for the development and reporting of appraisals, with the overall purpose of developing and reporting appraisals that are not misleading.
- Review and critique the approach to value to determine if the methods and techniques applied by the NS Appraiser are not misleading and consistent with the data presented.
- Check of mathematical calculations; and
- Provide a conclusion as to whether the value conclusions by the NS Appraiser are supported by the data and are presented in a manner that is not misleading.

The overriding conclusion of our review of the NS Appraiser's land valuation is that the NS Appraiser developed and applied a purely mathematical and highly mechanized approach, without considering basic appraisal principles, resulting in a discontinuity between the real-world data (land sales) and their value conclusions. First, the NS Appraiser failed to consider the quantity and quality of the sales data available. Second, the NS Appraiser failed to consider basic valuation tenets. Third, the NS Appraiser produced land valuations that were contrary to the "no barriers to entry" provision of the SARR process. Fourth, the NS Appraiser then applied analysis techniques that resulted in land valuations that were unsupported by the sales. Thus, the conclusions reached by the NS Appraiser are necessarily unreliable and unsupported.

Even though the NS Appraiser describes the process undertaken in their analysis as a sophisticated mass appraisal methodology, these supposedly sophisticated data techniques did

not absolve them of the responsibility to be sure that the data was being handled in a manner that is consistent with the appraisal problem being addressed. By ignoring basic characteristics of land sales, characteristics that every appraiser should consider, the NS Appraiser failed in their responsibility to produce valuation conclusions that are supported and not misleading.

SUMMARY OF CONCLUSIONS

Land Valuation: Summary

Based on our review, we have concluded that the NS Appraiser's land valuation is based on a flawed approach, and the land value conclusions produced by this flawed analysis are not supported and do not produce a realistic land valuation for the DuPont SARR.

We conclude that our original land valuation, presented in the April 30, 2012 Opening Evidence, is the best representation of the value of the land required for the DuPont SARR. However, based on the Norfolk Southern response, two adjustments are required for the land valuation:

- Addition of 16.84 miles, in seven locations.
- Modifications and additions to the land required for yards and other supporting facilities

Taking the above two modifications into account, the following table summarizes our valuation of the land required for the DuPont SARR:

Land Valuation for DuPont Stand Alone Railroad

	Total Miles	Total Acres	Estimate of Value as of June 1, 2009
Land Valuation for DuPont Stand Alone Railroad (Opening Evidence)	7,272 9	81,624 3	$3,370,300,000
3 Changes as of May 11, 2012	4 0	58.2	$3,600,000
OPENING EVIDENCE	7,276 9	81,682 5	$3,373,900,000
Plus Additions to DuPoint Stand Alone Railroad (7 locations)	16 8	190 8	$25,200,000
Plus· Modifications to Yards/Supporting Facilities		1,770 3	$456,100,000
Total Land Valuation for DuPont Stand Alone Railroad	7,293 8	83,643 6	$3,855,200,000
Rounded			$3,855,000,000

The Appraisal Process

Developing the land valuation for the DuPont SARR consists of producing discrete land valuations for multiple property types (residential, commercial, industrial, agricultural, rural town and restricted uses) across 20 eastern states, for a 7,272-mile SARR, with a total acreage of about 81,600 acres.

The appraisal firms developing the land valuation for L. E. Peabody and Associates, representing DuPont, consist of a team that includes Harps and Harps, Inc., Merit Real Estate Analysis, Inc., and Rail Trac Associates.

The scope of work for this appraisal assignment involved the typical steps of:

- Subject Property Description
- Data Collection
- Data Analysis
- Development of Opinion of Value

To define the subject property, we divided the DuPont SARR into 6,950 line segments, with an average segment length of 1.05 miles. But in more densely-developed urban areas, the average line segment length was typically 0.50 to 0.75 miles long. Defining the across-the-fence property uses on both sides of the DuPont SARR created a total of almost 14,000 land valuations.

Inspection of the subject property included on-the-ground inspection in 18 urban areas, covering 373 miles of the hypothetical railroad right-of-way. Over 1,300 geo-coded photographs documented the on-the-ground inspections. The remainder of the inspection of the hypothetical right-of-way was performed using the aerial imagery of Google Earth Pro, including ground-level photography of many of the areas.

Collection of sales data for such a vast geographic area consisted, by necessity, of using available electronic sales databases. For this assignment, several thousand sales from CoStar/Comps and 23,000 sales from CoreLogic were obtained. However, even with this large database of land sales, there were property type/geographic area combinations that were thinly represented in the sales data.

Data analysis consisted of analyzing the comparable sales to verify that the sales price did reflect the market value of vacant land. Due to the sheer quantity of sales involved, the verification process was, by necessity, confined to the data provided by CoStar/COMPS or CoreLogic. Where necessary and appropriate, comparable sales information was compared to benchmark data obtained from conversations with local assessors and appraisers, and from published sources such as the Department of Agriculture's survey of agricultural land prices by state.

Development of the opinions of value for the land needed by the DuPont SARR involved a key appraisal concept, as stated in Standards Rule 1-6 of the Uniform Standards of Professional Appraisal Practice:

> ***In developing a real property appraisal, an appraiser must reconcile the quality and quantity of data available***[2]
> (emphasis added)

In this appraisal assignment, the consideration of the quantity and quality of the sales data available was often a key determinant in the methodology followed in producing the opinion of land value for the DuPont SARR.

In our land valuation, consideration was always given to the quantity and quality of sales data available. When sufficient sales data was not available, supportable and logical choices were made to use comparable sales data from similar nearby jurisdictions. In addition, benchmark data from published sources, like the U.S. Department of Agriculture, local appraisers and local assessors, was also used as a quality check of the land valuations developed using comparable sales.

The process followed in developing the land valuation was not a mechanical process that was followed lockstep. Instead, the quantity and quality of the sales data available dictated the process used in developing the land valuation, to ensure the most accurate and reasonable values.

Each individual land value was not considered in isolation - relationships among the property types were considered, as

[2] Uniform Standards of Professional Appraisal Practice, 2012-2013 Edition, The Appraisal Foundation, page U-20.

well as value conclusions reached in nearby, similar jurisdictions. We consistently reviewed the valuation estimates to produce a reliable conclusion.

In this document, we will describe these processes and the logic behind them, leading to a reasonable and reliable estimate of land value for the DuPont SARR. By virtue of the appraisal process performed in our analysis, and set forth in our appraisal, previously submitted to the Surface Transportation Board we produced a land valuation for the hypothetical DuPont SARR that is reasonable, supported and realistic.

We will also review the land valuation produced by the appraiser for Norfolk Southern (FTI Consulting, which will henceforth be referred to in this report as the "NS Appraiser"). Early in the appraisal process, the NS Appraiser did not adequately consider the quantity and quality of the data available for their analysis. The NS Appraiser then used the sales data in a manner that over-represented the sales with the higher unit prices, which is contrary to the "no barriers to entry" requirement for standalone railroad (SARR) analysis. The NS Appraiser then applied analysis techniques that resulted in land valuations that were unsupported by the sales. Thus, the conclusions reached by the NS Appraiser are necessarily unreliable and unsupported.

As with many professions, real estate appraisal is as much an art as it is a science, and individual appraisers may differ in the way they approach the process. However, there are certain truths in the appraisal process that cannot be denied or ignored. In this instance, one of the key appraisal truths about land valuation is that there is usually an inverse relationship between land area and unit price - all other things being equal, the smaller parcels of land tend to sell for higher unit prices, and larger parcels of land tend to sell for lower unit prices. Ignoring this significant relationship leads to serious issues in the resulting land valuations.

Review of Norfolk Southern's Appraisal - Summary

In support of the proceeding before the Surface Transportation Board, the following base land values[3] were submitted:

$3,055,700,000	Our base land valuation
$4,154,519,000	NS appraiser's base land valuation
$1,098,819,000	Difference in base land valuation

The NS Appraiser produced a total base land valuation that was 36% greater than our base land valuation.

The NS Appraiser's report has been reviewed, to determine its compliance with generally-accepted appraisal practices, and conformance with the Uniform Standards of Professional Appraisal Practice (USPAP). Finally, we will assess the reasonableness of the value conclusions reached by the NS appraiser.

The primary conclusions of our review of the NS Appraiser's land valuation are that:

- The NS Appraiser developed and applied a purely mathematical and highly mechanized approach that did not apply basic appraisal principles.
- The NS Appraiser failed to consider the quantity and quality of the sales data available.
- The NS Appraiser failed to consider basic valuation tenets.
- The NS Appraiser then applied analysis techniques (simple average) that resulted in land valuations that were unsupported by the sales.
- Thus, the conclusions reached by the NS Appraiser are necessarily unreliable and unsupported.

Even though the NS Appraiser describes the process undertaken in their analysis as a sophisticated mass appraisal methodology, these supposedly sophisticated data techniques did not absolve them of the responsibility to be sure that the data

[3] Base land value equals the fee simple value of the land underlying the DuPont SARR, before consideration of other factors, such as land needed for communications facilities, land needed for yards and other support facilities, and adjustments to land value for partially-owned lines and land easements/agreements.

was being handled in a manner that is consistent with the appraisal problem being addressed.

In the mass appraisal section of the Uniform Standards of Professional Appraisal Practice (USPAP) is the following comment:

> *"This Standards Rule requires appraisers engaged in mass appraisal to take reasonable steps to ensure that the quantity and quality of the factual data that are collected are sufficient to produce credible appraisals…Property characteristics data must be appropriate and relevant to the mass appraisal models being used."*[4]

The above USPAP requirements were not fulfilled by the NS Appraiser.

Ignoring Basic Characteristics of Land Sales - By ignoring the most basic characteristics of land sales, that every appraiser should consider, the NS Appraiser failed in their responsibility to produce value conclusions that are supported and not misleading. The main observations and conclusions of our review of the NS Appraiser's land valuation for the DuPont SARR include the following.

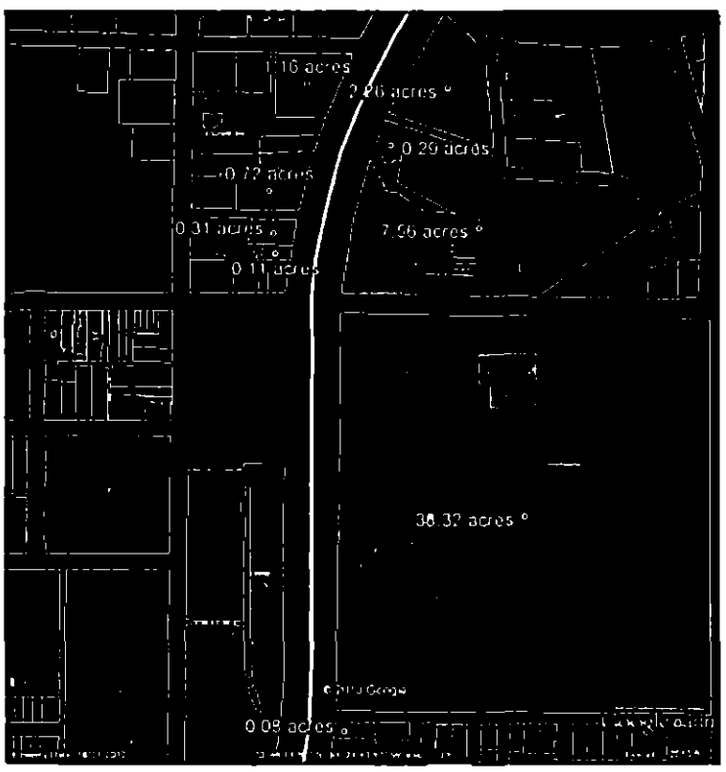
- The NS Appraiser failed to analyze and account for changes in market conditions / market trends **(page 26)**.
- The NS Appraiser failed to account for differences in parcel size (a key determinant of land value) in the comparable sales **(page 27)**.
- The NS Appraiser utilized an inappropriate averaging technique, leading to inflated value conclusions **(page 29)**.
- The inflated value conclusions developed by the NS Appraiser were contrary to the "no barriers to entry" requirement in SARR analysis **(page 34)**.

[4] Uniform Standards of Professional Appraisal Practice 2012-2013 Edition (USPAP), The Appraisal Foundation, page U-51.

The NS Appraiser compiled sales data sets grouped by zoning/use and sorted by price per square foot only. The data sets included sales from several years, parcels of various sizes, urban and rural locations sometimes mixed together and all sales were only sorted by price per square foot.

By creating such non-homogeneous data sets, the NS Appraiser failed to analyze and account for changes in market conditions / market trends, differences in average prices attributed to land sizes, and the differences attributed to locations (urban and rural land) analyzed together.

The NS Appraiser failed to account for differences in parcel size (a key determinant of land value) in the comparable sales. For example, note this portion of the DuPont SARR in the Atlanta, GA area:



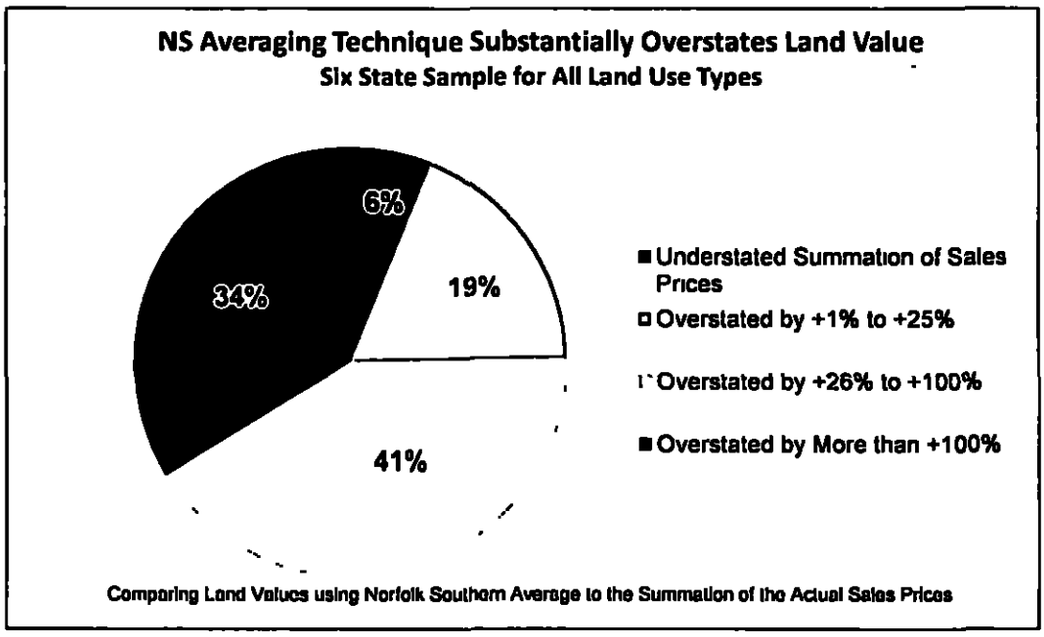
Imagine that the land purchases by the SARR would consist only of the properties on the right side of the SARR (Orange line). Land would be purchased from five properties of the following sizes:

0.08 acres
0.29 acres
2.26 acres
7.56 acres
38.32 acres

It is clear from the above photo that the most land for the SARR will be purchased from the 38.32-acre parcel and that the least amount of land will be purchased from the 0.08-acre parcel. The NS Appraiser gives equal weight to each parcel in developing the average price per acre, causing the smaller parcels to be over-represented in the average. Since generally speaking, the unit price for land rises as the parcel size declines, the NS Appraiser overstated the average land value by giving equal weight to each land sale, regardless of the size of the parcel being purchased.

Inappropriate Averaging Technique - The NS Appraiser utilized an inappropriate averaging technique, leading to inflated value conclusions.

To measure the extent of the error caused by the inappropriate averaging technique used by the NS Appraiser, we looked at six sample states (Alabama, Ohio, Pennsylvania, New York, North Carolina and Georgia). For each land use type (industrial, residential, etc.) and for each jurisdiction (county) in these six states, we compared the average price per acre produced by the NS Appraiser to the summation of the actual sales prices used by the NS Appraiser:



We tested 364 sales data sets, representing all the land sales used by the NS Appraiser in these six states. For each set of sales, we compared the summation of the actual sales prices to the summation of the prices computed using the NS Appraiser's average land price. The results show the impact of grouping a non-homogeneous set of sales into one data set and giving all sales equal weight leading to conclusions that could not produce a meaningful value.

In 94% of the cases, the use of the NS Appraiser's average land value overstated the summation of the actual sales prices. The degree of overstatement is significant - 75% of the time the sales prices were overstated by more than 25%, and 34% of the time, the overstatement more than doubled the actual sales prices.

The inflated value conclusions developed by the NS Appraiser were also contrary to and inconsistent with the "no barriers to entry" requirement in SARR analysis.

Flawed Land Valuation Process - At this point, having failed to properly account for differences in the sales data, the NS Appraiser then utilized the non-homogeneous sales data to produce their land valuations that were based solely on the unit price.

- The only categorization or "stratification" of the sales data by the NS Appraiser was by unit price. Without accounting for the differences in parcel size or any other factors that could impact the unit price, the use of this single measure (unit price) as a surrogate for all other valuation factors, does not and could not produce credible value conclusions **(page 38)**.

- When eliminating sales as "outliers", only the highest unit price sales were excluded. Having committed the error of using an improper averaging technique (that overstated the resulting land value conclusions), the NS Appraiser then committed another error of eliminating sales only from the high end of the spectrum, making it impossible to judge the reasonableness of the resulting value conclusions **(page 40)**.

- By routinely applying route-average or state-average land values to rural jurisdictions, the NS Appraiser applied urban-area land values to rural areas **(page 54)**.

- The NS Appraiser produced values that were not supported by actual sales in proximity to DuPont SARR **(pages 63, 70, 75, 79, 84, 90)**.

For example, the exhibit below illustrates a portion of the DuPont SARR in the Pittsburgh, PA area:

For this portion of the DuPont SARR, the NS Appraiser developed the land value conclusions shown in WHITE, ranging from **$100.00 to $500.00 per square foot** of land. However, note that the comparable sales used by the NS Appraiser (shown in YELLOW on the above exhibit) **do not exceed $20.04 per square foot**, and land sales excluded as "outliers" by the NS Appraisers (shown in RED above) do not exceed $89.28 per square foot.

- The land valuations produced by the NS Appraiser often exceeded the bounds of the comparable sales prices **(pages 66, 71, 76, 80, 91)**.
- The NS Appraiser created average land values by excluding a variable percentage of higher-priced sales from their calculations, with no market rationale.
- Having committed the error of using an improper averaging technique (that overstated the resulting land value conclusions), the NS Appraiser then committed another error of eliminating sales only from the high end of the

spectrum, making it impossible to judge the reasonableness of the resulting value conclusions.

- The NS Appraiser utilized the same sales data to produce multiple value conclusions, simply by excluding a differing number of high unit price sales, with no market rationale for the sales excluded, other than price **(page 54)**.
- The NS Appraiser failed to consider recognized and accepted appraisal techniques to categorize and analyze land sales. The result was a non-homogeneous set of sales that was thereafter manipulated by the NS Appraiser solely on the unit price, taking no relevant variables into account.
- The NS Appraiser failed to produce land valuations for the DuPont SARR that were consistent with the requirement of "no barriers to entry" for SARR cases.

The value conclusions of the NS Appraiser were unsupported by the data, and therefore the value conclusions cannot be relied upon as a reasonable estimate of land value for the land required by the DuPont SARR.

The NS Appraiser failed to consider recognized appraisal techniques and did not produce a valuation that was consistent, supportable, and reasonable based on market data.

Having committed the error of using an improper averaging technique (that overstated the resulting land value conclusions), the NS Appraiser then committed another error of eliminating sales only from the high end of the spectrum, making it impossible to judge the reasonableness of the resulting value conclusions. The NS Appraiser's conclusions should be rejected.

Rebuttal of NS Review of Our Appraisal: Summary

The NS Appraiser (FTI Consulting) submitted an appraisal review, dated November 26, 2012, of our valuation of the land underlying the DuPont SARR. Here are the main observations and conclusions from our rebuttal of the appraisal review by the NS Appraiser. A page reference is provided with each summary point, directing the reader to supporting information in this report.

- **Date of Value/Partially-Owned Rights-of-way/Land Use Agreements and Easements:** These items will be addressed in another section of the rebuttal evidence, and will not be addressed in this document.
- **Classification of Land Uses:** The NS Appraiser contends that the land use definition in our appraisal was not sufficiently detailed. In fact, the land uses designated in our appraisal properly reflect the underlying land value for that portion of the DuPont SARR. Examples are given **(page 96)**.
- **Inspection of Subject Property:** The NS Appraiser, in his review, contends that our physical inspections of the subject property were not extensive enough, and that we relied too much on computer-based tools for our inspections. This section discusses our extensive pre-planning and detailed on-site physical inspections of the DuPont SARR, and also discusses the powerful computer-based tools (Google Earth and BING) used in our appraisal process **(page 99)**.
- **Selection of Comparable Sales and Verification Process and Taking Proper Steps to Analyze Comparable Sales** The NS Appraiser questions several aspects of our land sales research and land valuation process that were easily refuted in the documentation and data we supplied along with our appraisal

  1. We did not use "unknown" land use type nor were improved sales used as the basis of some of our values.
  2. We did not use property assessment data as the basis for land value.

3. We did not have an overreliance on "anecdotal" sources of secondary information, such as assessors, brokers and appraisers. As is customary in most appraisals, we used these secondary sources to support the actual sales data that was the basis of our appraisal.
4. The NS Appraiser's claims and false assertions that our analysis was not documented sufficiently in our work papers must be disregarded.

In this section, we address each of these concerns by the NS Appraiser, and describe in detail that these alleged errors in data handling did not occur in our analysis. Also, this section describes the scope of our analysis process, and illustrates how the process was documented in the evidence provided in this case. The procedure we used adheres to one of the most important elements of appraising that address the quality and quantity of the data used in the appraisal. Each individual land value was not considered in isolation - relationships among the property types were considered, as well as value conclusions reached in nearby, similar jurisdictions. We consistently reviewed the valuation estimates to produce a reliable conclusion. **(pages 102 to 114)**.

- **Technique Used to Average Data:** The NS Appraiser, in his review, contrasts the averaging technique used in our appraisal (a weighted average approach) with the averaging technique used in the NS Appraiser's valuation report. Our Rebuttal Report clearly shows that the weighted average technique is a superior technique to use in valuing land for the SARR, because it produces more reliable conclusions **(pages 112 and 29 to 37)**.

It must be mentioned here that the NS Appraiser, in his review, attempts to characterize the averaging technique used in our appraisal as one that the appraisal industry in general, and the Appraisal Institute in particular, have rejected.

This section of the NS Appraiser's review document and testimony is misleading, because it appears to confer the approval of the Appraisal Institute on the averaging technique used in their appraisal, as well as the specific rejection by the Appraisal Institute of the averaging technique utilized in

our appraisal. **This is a false and willfully misleading claim by the NS Appraiser, and should be disregarded (page 36).**

Our appraisal followed recognized and established appraisal techniques that were appropriate. The process followed in developing the land valuation was not a mechanical process that was followed lockstep, such as that used by the NS Appraisers. Instead, the quantity and quality of the sales data available dictated the process used in developing the land valuation, to ensure the most accurate, reasonable and supportable values that were consistent with the actual sales in the market.

Failure to Account for Market Conditions and Trends

The NS Appraiser utilized land sales with sale dates ranging from January 2004 through December 2007. A single market conditions adjustment of +0.25% per month, or +3% per year, was applied to all sales, based on a date of value of July 1, 2007. All sales prior to July 1, 2007 were adjusted upward, and all sales from July to December 2007 were also adjusted upward. In effect, the NS Appraiser defined July 1, 2007 as the top of the market for all property types.

The market condition adjustment was very simplistic, and was apparently based on the Consumer Price Index (see page 13 of NS Appraiser's report), which is not specifically a measure of real estate market conditions, but rather is a general measure of prices in the economy. A uniform percent for all four years under study (2004 to 2007) was applied to all sales. The adjustment was always upward. The adjustment was not property-type specific.

Even more significant, the NS Appraiser, after applying the generic adjustment described above, then took sales for all four years and grouped them into one large data set, for sorting by price per square foot. No evidence was provided that the NS Appraiser analyzed or considered any market trends in the data over the four-year span.

Given the generic nature of the NS Appraiser's market condition adjustment (the same percentage adjustment regardless of time period or property type), the failure to consider any potential market trends within each property type and geographic area would cause emerging market trends to be ignored in the value conclusion.

In comparison, we employed typical appraisal practice in adjusting for market conditions. We incorporated specific market condition adjustments for each property type (residential, industrial, and commercial) that were specific to calendar quarter. Then, for each property type/geographic area combination, sales data was displayed grouped by year, to enable the identification of market trends.

Failure to Account for Variations in Land Area

The unit price paid for land can be affected by many factors. Some of these factors are specific to particular types of land. For example, for gas station/convenience store sites, the price paid may be impacted by how much automobile traffic passes that site each day, at which corner of the intersection the site is located, and the size and shape of the site. For other land types, the factors affecting unit price will be totally different.

However, one factor that is recognized by the appraisal profession as almost always being a significant factor affecting unit price paid for land is the size of the land parcel:

Size differences can affect value and are considered in site analysis…..Generally as size increases, unit prices decrease. Conversely, as size decreases, unit prices increase."[5]

For those not involved in land valuation or pricing, there is a familiar example in the housing market. Take two sales in your neighborhood - a single family detached house, and a residential condominium unit:

Type Property	Living Area (Square Feet)	Sales Price	Unit Price: $ / Sq Ft
Single Family Detached	2,750	$650,000	$236
Residential Condo Unit	1,100	$450,000	$409

The single family detached home has a much higher sales price, but the unit price, the price per square foot of living area, is much higher for the smaller condo unit. This is the same general relationship found in most land sales: the larger the tract of land, the lower the unit price.

If you only looked at the unit price, you might conclude that the single family detached home is "less expensive" than the condo unit.

Now, let's say you wanted to know what the average price of housing was in your neighborhood. If these were the only two

[5] The Appraisal of Real Estate, thirteenth edition, The Appraisal Institute, page 212

sales in the neighborhood, you could take the two unit prices, and compute the average:

$236 + $409 = $645 divided by 2 sales = $322.50 per sq. ft.

Is this really the average price of housing in the neighborhood? To check, we can multiply the average price per square foot calculated above by the total square footage of homes sold:

$322.50 avg price/sq. ft. x 3,850 sq. ft. sold = $1,241,625

However, notice on the table below that the total price of the two houses sold was only $1,100,000:

Type Property	Living Area (Square Feet)	Sales Price	Unit Price: $ / Sq Ft
Single Family Detached	2,750	$650,000	$236
Residential Condo Unit	1,100	$450,000	$409
TOTAL (2 sales)	3,850	$1,100,000	

Using the average of the prices paid per square foot ($322.50), the total price of homes sold was computed as $1,241,625. But, this is about 13% too high ($1,241,625 vs. $1,100,000 = 12.88% too high).

You can account for the size of each home in developing the average price, by calculating a "weighted average". This is an average that takes into account a relevant factor, such as the size of the home. In our simple example, the weighted average price is calculated like this:

$1,100,000 total sales / 3,850 sq. ft. = $285.71 per sq. ft.

Notice that the weighted average of $285.71 is lower than the simple average of the unit prices of $322.50.

When the size of real estate plays a key part in determining the unit price, it is important to account for this phenomenon in the appraisal of that real estate.

In the next section, it will be shown that the NS Appraiser failed to properly take into account the size of the land parcels in their comparable sales, leading to an overstatement of value.

NS Appraiser Used an Inappropriate Averaging Technique

A major difference between our land appraisal and the NS appraisal is the way in which the average price of the comparable sales was computed. In their testimony, and in their review of our appraisal, the NS Appraiser discusses the "global mean" vs. the "stratified mean" and concludes that the significantly higher values produced by their technique are evidence of the superiority of their technique.

In fact, the significantly higher values developed by the NS Appraiser are clear evidence that the averaging technique utilized by the NS Appraiser produced unrealistically high land valuations.

First, some definitions and simple examples:

The NS Appraiser refers to the averaging technique applied in our analysis as the "global mean" and the averaging technique utilized in their analysis as the "stratified mean". Although there may be some form of stratification involved in the NS Appraiser's valuations in the urban areas (such stratification, if it was employed, was not documented in the work papers provided by the NS Appraiser), generally the NS Appraiser's land valuations were developed using a simple average.

In this document, more commonly-accepted terminology for these mathematical averaging techniques will be used: the "arithmetic mean" and the "weighted mean".

The "arithmetic mean" is what is commonly thought of as the "average". Each value in a set of data is summed, and is divided by the total number of observations in the data, to create the average or the arithmetic mean:

ACTUAL SALES		
Sales Price	Acres	Price/ Acre
$5,000	50	$100
$8,000	40	$200
$3,000	10	$300
$2,000	5	$400
$18,000	105	

In this simple example, calculate the arithmetic mean by adding the prices per acre and dividing by the number of sales:

$100 + $200 + $300 + $400 = $1,000 divided by 4 sales = $250

As simple as calculating an "average" sounds, there are difficulties with a simple average. By giving each sale equal weight, this averaging technique does not take into account the impact of parcel size on the price per acre.

Generally speaking, in many land transactions, the larger the parcel, the lower the unit price. This relationship between parcel size and unit price can be caused by many factors, but larger parcels typically require the provision of internal roads and other facilities that reduce the amount of land area for building improvements. Also, some property types, such as large residential tracts, will require development over time, resulting in discounting of the unit price to account for the time value of money during the development period.

To account for the impact of the size of the parcel on the unit price, a "weighted mean", that takes into account the size of each parcel, can be utilized:

ACTUAL SALES		
Sales Price	Acres	Price/ Acre
$5,000	50	$100
$8,000	40	$200
$3,000	10	$300
$2,000	5	$400
$18,000	105	

To calculate a weighted mean, the sales prices are summed, and divided by the number of acres:

$5000 + $8000 + $3000 + $2000 = $18,000 / 105 acres = $171.43

To judge the impact of each type of averaging technique, we can apply the two averages calculated above to the actual sales data:

ACTUAL SALES			AS CALCULATED BY NS			USING WEIGHTED AVERAGE		
Sales Price	Acres	Price/ Acre	Acres	Times: NS Avg.	Computed Sales Price	Acres	Times: Wgt Avg	Computed Sales Price
$5,000	50	$100	50	$ 250	$ 12,500	50	$171.43	$8,571
$8,000	40	$200	40	$ 250	$ 10,000	40	$171 43	$6,857
$3,000	10	$300	10	$ 250	$ 2,500	10	$171 43	$1,714
$2,000	5	$400	5	$ 250	$ 1,250	5	$171 43	$857
$18,000	105		105		$ 26,250	105		$ 18,000

NS Average Price = $100+$200+$300+$400 = $1000 / 4 sales = $250 per acre

Weighted Average Price = $18,000 / 105 acres = $171.43 per acre

Note on the table above that when the arithmetic mean (as used by the NS Appraiser) is applied to the actual sales, the

arithmetic mean produces a total expected sales price of $26,250 for the 4 sales, compared to the actual sales price of $18,000 for the four sales. Thus, if the arithmetic mean of $250 were used to appraise these 4 properties, the appraised value would overstate the summation of the actual value by 45.8%.

On the other hand, if the weighted mean of $171.43 per acre were used to appraise the above four properties, the appraised value for the four properties would be $18,000 which is equal to the actual summation of the sales prices for the four sales.

This same impact on appraised value can also be seen in the actual sales data utilized by the NS Appraiser.

COMMERCIAL SALES FOR MADISON COUNTY, OH

Sale Date	Sales Price	Acres	Price per Acre	NS Average = $227,660/acre	Weighted Avg.= $53,382/acre
10/18/2007	$1,130,019	34 36	$32,888	$7,822,387	$1,834,208
11/11/2007	$3,338,374	70 05	$47,657	$15,947,561	$3,739,414
12/1/2006	$1,119,395	19.10	$58,607	$4,348,300	$1,019,597
05/24/2007	$270,592	0 78	$346,913	$177,575	$41,638
05/02/2005	$825,301	2 00	$412,651	$455,319	$106,764
08/13/2004	$65,414	0 14	$467,243	$31,872	$7,473
TOTAL	$6,749,095	126 43		$28,783,014	$6,749,095

NS Avg = $32888 + $47657 + $58607 + $346913 + $412651 + $467243 = $1,365,958 / 6 sales = $227,660 per acre

Weighted Average = $6,749,095 total sales price / 126 43 total acres = $53,382 per acre

The above table of actual commercial land sales for Madison County, OH used by the NS Appraiser shows that the six sales total $6,749,095.

Using the arithmetic mean, the NS Appraiser produces an estimated value of $227,660 per acre. When this estimate of value is applied back to the six sales, the NS Appraiser would appraise these six properties at $28,783,014. This is over four times the actual sales price of $6,749,095.

However, the weighted mean produces an estimated value of $53,382 per acre. When this estimate of value is applied back to the six sales these six properties would have a valuation sum

of $6,749,095 - identical to the actual sale prices of these six sales.

The reason that the arithmetic mean produces such erratic value conclusions is that the unit prices of the smaller sales are having a disproportionately large impact on the overall average. The NS Appraiser, probably mindful of this issue, argues that giving small sales such a disproportionate impact is acceptable given the appraisal assignment - the purchase of a right-of-way for the SARR. On page III-F-27 of the testimony, the NS Appraiser says "a stratified mean (*arithmetic mean - ed*) is a significantly superior approach to a global mean (*weighted average - ed*) here, for assembling the DRR's right of way would require thousands of individual purchases of relatively small parcels of land."

The first problem with this reasoning is that, even in dense urban areas, the SARR encounters a wide variety of parcel sizes.

The photo above illustrates two DuPont SARR lines in Atlanta, GA, just south of the CBD. Property outlines are shown, and the size of some selected parcels adjacent to the DuPont SARR are shown. Note that in this urban area, parcels of up to 38.32 acres are encountered, along with a variety of other parcel sizes, with the smallest parcel size of 0.08 acres.

The comparable sales should ideally include a variety of parcel sizes, because that is the reality of what is encountered along the DuPont SARR right-of-way, even in urban areas. To help visualize this point, note the SARR route on the left side of the above photo. Imagine that the land purchases by the SARR would consist only of the properties on the right side of the orange line. Land would be purchased from five properties of the following sizes:

0.08 acres
0.29 acres
2.26 acres
7.56 acres
38.32 acres

It is clear from the above photo that the most land for the SARR will be purchased from the 38.32-acre parcel and that the least amount of land will be purchased from the 0.08-acre parcel. If the appraiser gives equal weight to each parcel in developing the average price per acre, the smaller parcels will be over-represented in the average. And, since generally speaking, the unit price rises as the parcel size declines, producing an average value using an arithmetic mean will tend to overstate the land value that is being applied to a wide variety of parcel sizes.

No barriers to entry issue. - The second problem with the NS Appraiser's reasoning (i.e. that smaller parcel sales should be given disproportionate weight because the SARR will be purchasing small slivers of land from each property owner) is that, by this line of reasoning, the NS Appraiser has introduced "barriers to entry" into the analysis.

It is true that in reality a purchaser attempting to assemble a corridor for a new railroad would face all manner of barriers to entry, not the least of which would be severance damages and corridor effects that could increase the average

price paid per acre. These barriers to entry are NOT to be considered in the SARR analysis.

With no barriers to entry, it is assumed that all parcels are vacant and are available for sale at the market price for that parcel. Larger parcels can typically be purchased for a lower unit price per acre. Why would the DuPont SARR pay a premium for a small sliver of land taken from a larger parcel, when the entire parcel is available for purchase at a lower unit price? Then, when the SARR has carved off the needed right-of-way, the remainder of the parcel could be sold at the same prevailing market price. Without introducing barriers to entry, there is no justification to giving smaller parcels (with correspondingly higher unit prices) disproportionately higher weight in developing the average unit price.

Therefore, the unit prices of each size parcel must be taken into account in developing an overall average to be applied to the SARR acreage. Utilizing a weighted mean produces a land valuation that meets this criterion and is both supportable and reasonable.

By the NS Appraiser's own admission, the use of the arithmetic mean produces significant increases in appraised value. But, as shown above using both simplified data and actual data, these significant increases in appraised value do not make sense when applied to the same comparable sales used to develop the arithmetic mean.

The impact of utilizing the arithmetic mean by the NS Appraiser is not insignificant. As will be discussed in more detail later in this report, the impact on the valuations in the NS appraisal were analyzed for several states. For the six states analyzed (Alabama, Georgia, Ohio, New York, North Carolina and Pennsylvania), the use of the NS Appraiser's average, compared to the weighted average, produces an increase in DuPont SARR valuation of $679 million, an increase of 44.3%.

AREAS NOT PHYSICALLY INSPECTED BY NS (Alabama)
Showing Change in Value when the Weighted Average is Used

State	NS Route	NS Land Value (Arithmetic Mean)	Land Value Using Weighted Average	Difference NS vs. Wgt Avg	% Chg In Value
AL	Route 1: Birmingham AL to Chattanooga TN	$40,273,082	$21,588,368	($18,684,714)	-46 40%
AL	Route 2. Birmingham AL	$2,944 875	$1,479,314	($1,465,561)	-49 77%
AL	Route 3 Birmingham AL to New Orleans LA	$37,490,484	$20,001,796	($17,488,688)	-46 65%
AL	Route 4. Buratall AL to Mobile AL	$36,054,968	$20,682,374	($15,372,594)	-42 64%
AL	Route 5 Macon GA to Mahrt AL	$4,067,160	$2,368,585	($1,698,575)	-41 76%
AL	Route 6 Chattanooga TN to Memphis TN	$52,526,027	$34,776,687	($17,749,340)	-33 79%
AL	Route 7 Austell GA to Birmingham AL	$31,874,443	$17,166,980	($14,707,463)	-46 14%
	TOTAL FOR ALABAMA	$205,231,040	$118,064,104	($87,166,936)	-42 47%

One of the states analyzed in a later section of this report is Alabama. Above is a summary of the seven DuPont SARR routes in the state of Alabama. The NS Appraiser, using the arithmetic mean, developed a total land value of $205.2 million for DuPont SARR routes in Alabama. However, when the weighted mean is applied, the land value for the state of Alabama falls to $118.0 million, a decline of 42.47%.

Finally, it must be mentioned that the NS Appraiser in their testimony (on page III-F-25) cites the Appraisal Institute's book, "The Appraisal of Real Estate" as support for their use of the arithmetic mean vs. the weighted mean. In what can only be characterized as misleading and disingenuous, the NS Appraiser states:

"The Appraisal Institute rejects this kind of mass agglomeration (i.e. the weighted mean - ed), *noting that 'Like units must be compared, so each sales price should be stated in terms of appropriate units of comparison'. Appraisal Institute, The Appraisal of Real Estate at 305 (13th ed. 2008)."*

This is a gross and willful misinterpretation of this section of the book "The Appraisal of Real Estate".

We have included this section of the Appraisal Institute's book in the Addenda of this report, and it is clear from reading that text that the Appraisal Institute was not talking about averaging techniques in this passage. Rather, the Appraisal Institute was making the point that the appraiser must take into account the unit of value that is appropriate for the type of property being appraised. For example, if you are appraising

existing apartment buildings, the appropriate unit of measure is probably the price per apartment unit, and not the price paid per acre of land under the apartment buildings.

This section of the NS Appraiser's testimony is misleading, because it appears to confer the approval of the Appraisal Institute on the averaging technique used in their appraisal, as well as the specific rejection by the Appraisal Institute of the averaging technique utilized in our appraisal. This is a false and willfully misleading claim by the NS Appraiser, and should be disregarded.

The use of the arithmetic mean by the NS Appraiser produces land valuation conclusions that are unrealistic, even when applied to their own comparable sales. The inflated land value conclusions for the DuPont SARR created by using the arithmetic mean are unrealistic and unsupported.

Stratification of Data

The NS Appraiser, in his testimony and in his supporting appraisal review document, makes many comparisons to the "global mean" utilized in our appraisal, versus the "stratified mean" utilized in their appraisal. As discussed in the previous section, the proper terms for the averaging techniques utilized by the two Appraisers are:

"Arithmetic Mean": used by the NS Appraiser, where each sale is given the same relative weight in computing the average price.

"Weighted Mean": used in our analysis, where each sale is weighted in the computation of the average, based on the land area of each sale parcel.

The mathematical consequence of using each of these averaging techniques was discussed in the previous section, and will not be repeated here. However, additional discussion of the terms used by the NS Appraiser in their testimony is needed, to understand how the NS Appraiser used data in their analysis.

First, as to the assertion by the NS Appraiser that our averaging technique produced a "global agglomeration" and that the averaging technique utilized by the NS Appraiser was "stratified" and thus more accurate, is misleading.

An arithmetic mean (as used by the NS Appraiser) and a weighted mean (as used in our appraisal) are both single measures of a group of data. One average is no more "global" than the other. Both averages have their place, but given the important relationship between land size and unit price, in this instance the weighted mean (as used in our appraisal) is a more accurate and reliable form of averaging.

This is a key point, because in the DuPont SARR analysis, we are looking at a large and widely varying group of subject properties - it is only reasonable to presume that the acquisition of the land for the SARR would resemble the same mix of sites that are reflected in the comparable sales data. While for any given parcel of property, the weighted average would probably not be appropriate, when attempting to arrive at a reasonable value sum for a large number of widely varying properties, an assignment where there cannot, by definition, be

any single individual parcel to appraise, the weighted average is the only measure that can reasonable be used.

The NS appraiser attempts to paint the picture that the appraisal world rejects the use of the weighted average. This is false, unsupported and misleading. However, the appraisal world does universally recognize the often important relationship between the size of a land sale and the unit price. To ignore this relationship (as the NS Appraiser did), is a violation of basic appraisal principals.

The NS Appraiser discusses the advantages of "stratification" as used in his appraisal. The concept of stratification is common in mathematics, and is often used in sampling to ensure that certain relevant subclasses are properly represented in a sample. For example, if you are trying to determine if something varies by socioeconomic group, then you might stratify your data to ensure that the entire sample has a proportion of each socioeconomic group equivalent to the proportion of each group in the overall population.

In land appraisal, if enough information is available for each sale, the appraiser might want to stratify the comparable sales data by some relevant measures. For example, for gas station sites, the appraiser might want to stratify the sales by the type of highway access (location at an intersection) or exposure (traffic volume). Then, when comparing each sale to the subject gas station site, the appraiser can classify the subject using the same criteria (highway access and exposure) and give greater weight to the sales that most closely match the subject in terms of the relevant factors.

However, the "stratification" employed by the NS Appraiser, rather than being based on relevant characteristics for a property type, is based only on the price per square foot paid for each sale.

The NS Appraiser sorted the sales data from low to high by price per square foot and that is all. It is not clear what this "stratification" actually accomplishes in their analysis. It basically says:

The low-priced sales are low-priced because they are low-priced, and the high-priced sales are high-priced because they are high-priced.

The way the NS Appraiser used this "stratified" sales data differs between the areas of the DuPont SARR physically inspected by the NS Appraiser, and the areas of the DuPont SARR that were not physically inspected by the NS Appraiser.

The base estimate of land value (not including such items as land for communications facilities, yards, or land easement agreements) produced by the NS Appraiser is $4.154 billion. Of this total value conclusion, about 65% of the value is located over those portions of the SARR that were not physically inspected by the NS Appraiser. For this 65% of their land valuation, the NS Appraiser adopted our line segmenting of the DuPont SARR, and they also adopted our land use definitions for each segment of the DuPont SARR.

Using our line segment definitions and land use definitions, the NS Appraiser then applied an average land value per acre for each land use type and political jurisdiction (e.g. the NS Appraiser developed one price per acre for all commercial land in Madison County, Ohio). So, for 65% of their total land valuation, the NS Appraiser applied no "stratification" of the data - they produced a single average sales price and applied that average price to all segments within that political jurisdiction.

Elimination of sales classified as "outliers". - However, the technique used by the NS Appraiser to calculate the average price per acre raises some significant questions:

RESIDENTIAL SALES FOR YORK COUNTY, PA

Sales Date	City	State	Current Use/ Zoning	Sold Price	Lot Size (Acres)	Inflation Index	$/SF Inflated
09/12/2005	York	PA	Residential (land)	$ 1,026,298	76 00	1 06	$ 0.33
08/13/2007	Wellsville	PA	Residential (land)	$ 92,000	3.33	1 00	$ 0.64
03/30/2005	York	PA	Residential (land)	$ 155,000	4 50	1 07	$ 0 85
06/18/2007	Mount Wa	PA	Residential (land)	$ 1,000,000	26 51	1 00	$ 0.87
09/06/200/	Dillsburg	PA	Residential (land)	$ 102,500	2 09	1 00	$ 1 13
7/10/07	New Cumt	PA	Hold for Development	$ 2,600,000	40 00	1 00	$ 1 49
12/10/2007	Red Lion	PA	Residential (land)	$ 35,000	0 53	1 01	$ 1 54
11/26/2007	Red Lion	PA	Residential (land)	$ 224,258	3.31	1 01	$ 1 57
09/21/2007	Brogue	PA	Residential (land)	$ 80,000	0 92	1 01	$ 2 01
08/17/2007	Wellsville	PA	Residential (land)	$ 35,000	0 37	1 00	$ 2.18
07/02/2007	Glenville	PA	Residential (land)	$ 104,900	1 01	1 00	$ 2 38
10/04/2007	York Have	PA	Residential (land)	$ 30,000	0 28	1 01	$ 2 48
10/09/2007	Glen Rock	PA	Residential (land)	$ 41,000	0 38	1 01	$ 2 50
07/31/2007	Dillsburg	PA	Residential (land)	$ 46,177	0 40	1 00	$ 2 66
06/07/2007	Stewartstc	PA	Residential (land)	$ 110,000	0 90	1 00	$ 2.81
10/24/2007	New Freed	PA	Residential (land)	$ 229,900	1 70	1 01	$ 3 13
08/03/2007	Spring Gro	PA	Residential (land)	$ 79,900	0 55	1 00	$ 3 34
07/10/2007	Etters	PA	Residential (land)	$ 64,900	0 37	1 00	$ 4 03
08/08/2007	Red Lion	PA	Residential (land)	$ 95,800	0 53	1 00	$ 4 16
08/24/2007	Felton	PA	Residential (land)	$ 534,000	2 86	1 00	$ 4.31
06/27/2007	Manchest	PA	Residential (land)	$ 60,000	0 30	1 00	$ 4 59
08/31/2007	Wrightsvil	PA	Residential (land)	$ 270,000	1 35	1 00	$ 4 61
06/22/2007	Dillsburg	PA	Residential (land)	$ 69,900	0 34	1 00	$ 4 72
11/05/2007	Delta	PA	Residential (land)	$ 90,000	0 43	1 01	$ 4.85
05/25/2006	Hanover	PA	Multifamily (land)	$ 240,000	1 00	1 03	$ 5 69
07/02/2007	Airville	PA	Residential (land)	$ 39,900	0 15	1 00	$ 6 11
12/11/2007	Hanover	PA	Residential (land)	$ 239,900	0 75	1 01	$ 7.44
09/13/2007	#VALUE!	#VALUE!	Residential (land)	$ 44,500	0 11	1 01	$ 9.34
09/13/2007	Hanover	PA	Residential (land)	$ 44,500	0 11	1 01	$ 9.34
09/11/2007	*Red Lion*	*PA*	*Residential (land)*	*$ 92,000*	*0.20*	*1 01*	*$ 10.62*
08/14/2007	*York*	*PA*	*Residential (land)*	*$ 250,000*	*0.54*	*1.00*	*$ 10.67*
06/01/2007	*York*	*PA*	*Residential (land)*	*$ 120,350*	*0.24*	*1.00*	*$ 11.54*
07/27/2007	*Stewartstc*	*PA*	*Residential (land)*	*$ 410,000*	*0.77*	*1.00*	*$ 12.25*
11/29/2007	*Glen Rock*	*PA*	*Residential (land)*	*$ 295,000*	*0.52*	*1.01*	*$ 13.19*
11/14/2007	*Hanover*	*PA*	*Residential (land)*	*$ 585,000*	*0.79*	*1.01*	*$ 17 19*
06/04/2007	*Red Lion*	*PA*	*Residential (land)*	*$ 160,000*	*0.19*	*1.00*	*$ 19.38*
08/17/2007	*Jacobus*	*PA*	*Residential (land)*	*$ 359,500*	*0.40*	*1.00*	*$ 20.71*
08/22/2007	*York*	*PA*	*Residential (land)*	*$ 269,900*	*0.28*	*1.00*	*$ 22.22*
09/11/2007	*Dallastow*	*PA*	*Residential (land)*	*$ 80,000*	*0.07*	*1.01*	*$ 26.99*
09/11/2007	*York*	*PA*	*Residential (land)*	*$ 40,400*	*0.03*	*1.01*	*$ 31.10*
08/07/2007	*Red Lion*	*PA*	*Residential (land)*	*$ 189,900*	*0.14*	*1.00*	*$ 31.23*
12/31/2007	*Manchest*	*PA*	*Residential (land)*	*$ 142,500*	*0.09*	*1 02*	*$ 36.89*
09/05/2007	*York*	*PA*	*Residential (land)*	*$ 120,000*	*0.06*	*1.01*	*$ 46.16*
				"INCLUDED" SALES ONLY		NS Average	$ 151,884
				29	sales	Wgt Average	$ 46,065
				ALL SALES		NS Average	$ 415,898
				43	sales	Wgt Average	$ 62,800

The table above is taken from the NS Appraiser's sales worksheet. A few columns of data have been removed for clarity, but otherwise this is a depiction of the sales data as presented

by the NS Appraiser in his evidence. This particular set of sales data is for residential land in York County, PA. Note on the far right column that the NS Appraiser has "stratified" the data by sorting it from low to high in terms of dollars per square foot of land. This sort is the only "stratification" the NS Appraiser performed in this analysis.

There are a total of 43 residential land sales, ranging in sales price (adjusted for inflation by the NS Appraiser) from $0.33 per square foot up to $46.16 per square foot. However, note that the first 29 sales are colored BLACK - this indicates that the NS Appraiser included these land sales in their calculation of the arithmetic mean (or average).

There were an additional 14 sales (that the NS Appraiser has shown in RED above) that were excluded from the average because they were "outliers" ("outlier" is the term applied to these sales by the NS Appraiser). Basically a third of the available sales were excluded by the NS Appraiser, and these represented the sales with the highest unit prices, ranging from $10.62 per square foot up to $46.16 per square foot.

This is the pattern seen in all of the NS Appraiser's sales spreadsheets - the only sales excluded from the calculation of the average are the highest price sales. Sometimes only a few sales are excluded and sometimes (as in the example above) a significant number of sales are excluded. It is always the highest price sales that are excluded as "outliers".

This is a curious technique, and one that is not supported either by logic, or by accepted appraisal practice.

There is no general appraisal theory that says that to produce a reasonable average price estimate, you should only remove high unit-price sales. Even if the goal was to eliminate the extremes of a price distribution, the appraiser would remove both low price and high price extremes.

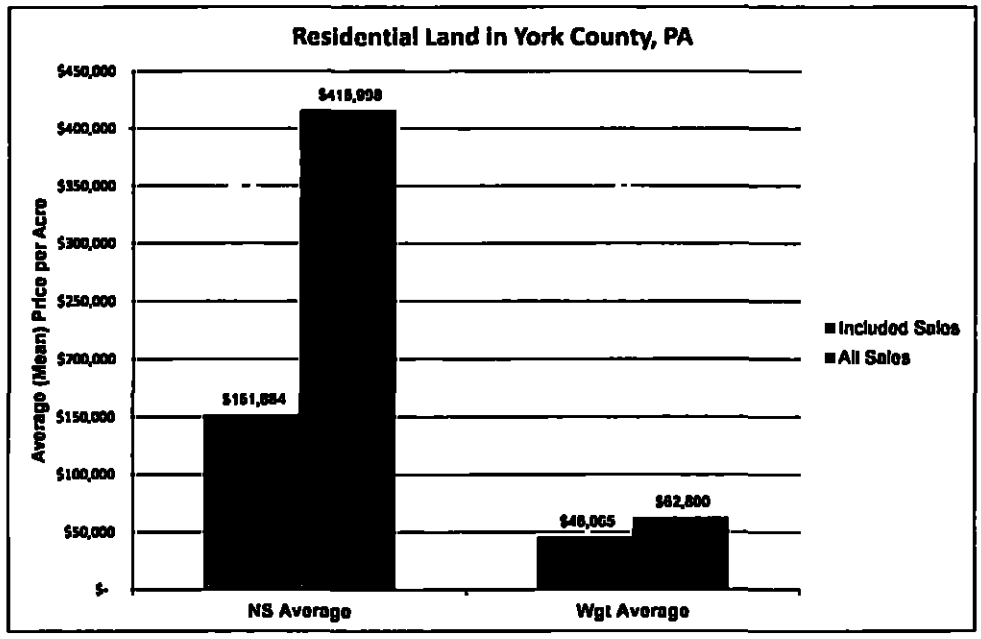
The NS Appraiser did not reveal in evidence the mechanical or mathematical process that was used to determine which higher-priced sales would be excluded, but it raises questions as to why the "outlier" sales are always defined as the highest price sales.

One possible explanation goes back to the discussion in the previous section about - the volatility of using the arithmetic mean (that was utilized by the NS Appraiser) in developing an average price for a group of sales. Because every sale, even sales representing very small parcels of land, get equal weight in computing an arithmetic mean, these small acreage sales can have a disproportionate impact, and will increase the average price.

Note in the above table that we have calculated some average prices per acre for this data set. For the 29 land sales that were included in the NS Appraiser's average, the NS Appraiser calculated an average price of $151,884 per acre. This was the actual price per acre used by the NS Appraiser in valuing residential land in York County, PA. However, note what happens to the NS average (the mathematical mean) when you include all 43 residential land sales - it increases to $415,998 per acre, an increase of 174%.

The weighted mean (average) is also calculated in the above table for both the 29 included sales and the entire set of 43 sales. Note that the weighted average for the 29 sales included is $46,065 per acre. The weighted average for all 43 land sales increases to $62,800 per acre, an increase of only 36%. And both are well below the arithmetic mean utilized by the NS Appraiser.

This is a key point: The technique utilized by the NS Appraiser of excluding sales with higher unit prices did not by design result in lower land value conclusions. By starting with the arithmetic mean (which favors higher unit price sales), and then excluding a varying proportion of higher unit price sales, the NS Appraiser produced a land value conclusion that was disconnected from the sales data -- value conclusions that are not supported, and cannot be relied upon.



The above graph shows the volatility in the averages calculated using the NS Appraiser's technique, and the relatively low volatility of the weighted average. The graph also illustrates the tendency of the mathematical average to inflate the average price for a group of land sales.

In the above example of actual data from the NS Appraiser's report, note that 33% of the available sales were excluded from the calculation of the average value of residential land in York County, PA. What is the rationale for removing a third of your data, and only from one end of the price spectrum? It does serve as a "dial" to enable the NS Appraiser to adjust the average price, simply by excluding more or less high price sales. This kind of technique has no parallel in standard appraisal practice. If every appraisal say, included 5 comparable sales, and the appraiser ignored only the highest price sale(s), the appraiser could not defend the resulting value conclusion as reasonable and supportable.

As will be illustrated in the next section, even when dealing with the same sales, the NS Appraiser excluded a differing number of high unit price sales, to produce values for different situations (see page 47). The sales were not excluded based on their proximity to the SARR; they were not excluded on the basis of development density (urban vs. rural); they

were always excluded solely on the basis of high unit price. This is not only illogical, but it is not supported by any appraisal theory.

We are not in a position to ascertain the motivation of the NS Appraiser in employing this methodology. However, it is clear that by starting with the arithmetic mean (which favors higher unit price sales), and then excluding a varying proportion of higher unit price sales, the NS Appraiser produced a land value conclusion that was disconnected from the sales data -- value conclusions that are not supported, and cannot be relied upon.

In summary, the NS Appraiser created average land values by excluding a variable percentage of higher-priced sales from their calculations, with no market rationale. Having committed the error of using an improper averaging technique (that overstated the resulting land value conclusions), the NS Appraiser then committed another error of eliminating sales only from the high end of the spectrum, making it impossible to judge the reasonableness of the resulting value conclusions.

In the next section, some of the land values developed by the NS Appraiser for the areas that were not physically inspected will be discussed. For these non-inspected areas, which account for about 65% of the total base land valuation in the NS appraisal, the use of the arithmetic mean and the exclusion of higher unit value sales is the defining characteristic that differentiates the land valuations produced by the NS Appraiser from the land valuations produced in our analysis.

Later in the report will be a section that examines the NS Appraiser's valuation of land in the areas that were physically inspected. For these areas, the "stratification" of the sales data by the NS Appraiser produced some interesting results, including valuing land above the highest available sales unit price. Also, land in urban areas was valued by the NS Appraiser at an overall valuation that exceeded the average sales price, with no comparable sales in proximity to the DuPont SARR to confirm the higher than average valuations applied by the NS Appraiser.

Areas NOT Physically Inspected by the NS Appraiser

The portions of the DuPont SARR that were not physically inspected by the NS Appraiser account for about 65% of the total base land valuation in his appraisal.

For these areas not physically inspected, the NS Appraiser adopted all of our line segment definitions, and all of our land use designations. The NS Appraiser also adopted all of our land valuations for both Rural Town land and for Restricted (X) land. As in our appraisal, the NS Appraiser also applied a uniform land valuation per acre across an entire geographic area (county) for each land use type.

Therefore, the only difference between our land valuation and the NS Appraiser's land valuation in these areas is the NS Appraiser's development of average land values for residential, industrial and commercial land.

Averaging Technique Produces Inflated Values

As described in a previous section of this report, the NS Appraiser utilized an arithmetic mean to produce the average value per acre. The impact of using the arithmetic mean, as opposed to the more supportable weighted mean, can easily be seen in the areas not inspected by the NS appraiser, since the NS appraiser's arithmetic mean is applied across the board in these areas.

By failing to take parcel size into account when developing an average price per acre, using the arithmetic mean averaging technique, the NS Appraiser has significantly overstated the valuation of the land in the areas not physically inspected by the appraiser.

The table below summarizes the result of a 6-state survey of routes not inspected by the NS Appraiser:

AREAS NOT PHYSICALLY INSPECTED BY NS (6 state sample)

Showing Change in Value when the Weighted Average is Used

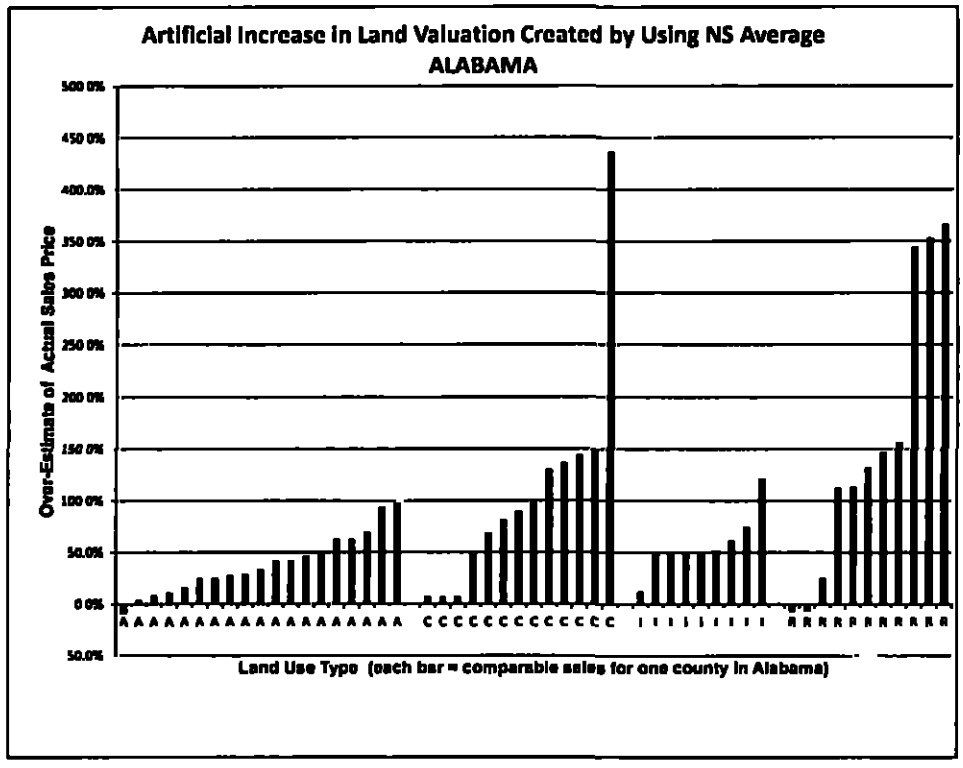
State	NS Route	NS Land Value (Arithmetic Mean)	Land Value Using Weighted Average	Difference NS vs. Wgt Avg	% Chg in Value
AL	Route 1: Birmingham AL to Chattanooga TN	$40 273,082	$21 588,368	($18,684,714)	-46 40%
AL	Route 2 Birmingham AL	$2,044 875	$1,479,314	($1 465,561)	-49 77%
AL	Route 3 Birmingham AL to New Orleans LA	$37,490,484	$20,001,796	($17 488,688)	-46 65%
AL	Route 4 Burstall AL to Mobile AL	$36,054 968	$20,682,374	($15,372,594)	-42 64%
AL	Route 5 Macon GA to Mohrt AL	$4 067,160	$2,368,585	($1,698,575)	-41 76%
AL	Route 6 Chattanooga TN to Memphis TN	$52,526,027	$34,776,687	($17 749,340)	-33.79%
AL	Route 7 Austell GA to Birmingham AL	$31,874 443	$17,168,060	($14,707,403)	-46 14%
		$208,231,040	$118,084,104	($87,166,936)	-42.47%
OH	Route 1, Toledo OH	$16 112 423	$12 187,470	($3,924,953)	24 36%
OH	Route 2 Chicago IL to Cleveland OH	$62,124,048	$32,155,027	($29,969,019)	-48 24%
OH	Route 3 Stanley Yard Branch (Toledo OH)	$2 715,396	$1,845,120	($870,277)	-32.05%
OH	Route 4 Chicago IL to Bellevue OH	$17 163,390	$16,456,474	($706,916)	4 12%
OH	Route 5 Bellevue OH to Pittsburgh PA	$65,561 494	$31,126,082	($34 435,411)	-52 52%
OH	Route 6 Cleveland OH	$8,288,804	$4 878,745	($3,410,059)	-41.14%
OH	Route 7 Detroit MI to Columbus OH	$37,770,875	$26,759,071	($11,011,803)	-29 15%
OH	Route 8 Columbus OH	$2,020,948	$1 170,936	($850,013)	-42 09%
OH	Route 9 Columbus OH to Chillicothe OH	$20,441 684	$14,275,560	($6,166,324)	-30.17%
OH	Route 10 Cincinnati O. I to Petersburg VA	$85,189 258	$48,892,794	($36,296,466)	-42 61%
OH	Route 12 Bellevue OH to Sandusky OH	$6 503 863	$3 428,936	($3 074,929)	-47 28%
		$323,892,984	$193,176,817	($130,716,167)	-40.36%
PA	Route 1 Bellevue OH to Pittsburgh PA	$9,540,293	$5,567,089	($3,973,204)	-41 65%
PA	Route 2 Pittsburgh PA	$30,374 915	$12 955,327	($17 419 588)	-57 35%
PA	Route 3 Pittsburgh PA to Harrisburg PA	$64,176,712	$36 444,918	($27,731,794)	-43 21%
PA	Route 4 Harrisburg PA	$14,628,209	$5,001,144	($9 627 065)	-65 81%
PA	Route 5, Harrisburg PA to Bayway NJ	$40,144,432	$21 638 094	($18,506,336)	-46.10%
PA	Route 6, Harrisburg PA to Roanoke VA	$24 128,931	$13,955,556	($10,173,375)	-42.16%
PA	Route 7 Buffalo NY to Harrisburg PA	$8,892,683	$7,541,018	($1,351,668)	-15 20%
PA	Route 8 Harrisburg PA to Edgemoor DE	$30,377,084	$17,040,098	($13,336,966)	-43 90%
PA	Route 9 Edgemoor DE to Morrisville PA	$72,466 826	$40,989,014	($31,476,812)	-43 44%
		$294,730,068	$161,133,167	($133,596,909)	-45.33%
NY	Route 1 Buffalo NY	$12,142,260	$4,012 373	($7,529,893)	-62 01%
NY	Route 2 Buffalo NY to Harrisburg PA	$81,671,414	$42 415,048	($39 250,360)	-48 07%
		$93,813,680	$47,027,421	($46,786,259)	-49 87%
NC	Route 1 Stokesland VA to Eden NC	$5,315,630	$3 205,676	($2 109,954)	-39 69%
NC	Route 2, Lynchburg VA to Atlanta GA	$87 871 799	$48,920,121	($38,951 678)	-44 33%
NC	Route 3 Yadkin Jct NC to Rockwell NC	$5,518,488	$3,186,539	($2,331,827)	-42 25%
NC	Route 5 Murphy Jct NC to Waynesville NC	$26,100,311	$16,474 082	($9 626,230)	-36 88%
NC	Route 6 New Line TN to Asheville NC	$17 537,106	$10 506,211	($6 970 065)	-39 75%
		$142,343,483	$82,352,628	($59,990,775)	-42.16%
GA	Route 1 Atlanta GA (Austell to Howell)	$21 168,130	$12 635,207	($8,532,922)	-40 31%
GA	Route 2 Atlanta GA (Howell to Duluth)	$66,358,679	$32 056,335	($34 302 344)	-51 69%
GA	Route 3 Atlanta GA (Howell to McDonough)	$41,004 386	$20,770,917	($20,323 470)	-49 46%
GA	Route 4 Atlanta GA (Spring Street to Morrow)	$27,976 641	$14 771,195	($13,205 446)	-47 20%
GA	Route 5 Chattanooga TN to Atlanta GA	$74,355,750	$52 157,540	($22 198 209)	29 85%
GA	Route 6 Lynchburg VA to Atlanta GA	$83,706,996	$39,295,449	($44,471 548)	-53 09%
GA	Route 7 McDonough GA to Macon GA (Monroe)	$22,709,159	$14,199 564	($8,509,594)	-37 47%
GA	Route 8, Macon GA to Mohrt AL	$51,512 554	$17,558,414	($33,954,141)	-65 91%
GA	Route 9 Macon GA to Greenwood GA	$19,775,846	$10,491,943	($9 283,903)	-46 95%
GA	Route 10 Burmingham AL to Chattanooga TN	$4,821,126	$3,257,850	($1,563 270)	-32 43%
GA	Route 12 Austell GA to Birmingham AL	$41 125,013	$23,918,080	($17,206,933)	-41 84%
GA	Route 13 McDonough GA Branch	$3,048,567	$1,487,221	($1,561,347)	-51 22%
GA	Route 14 Bremen GA to Yates GA	$14,864,850	$9,251,392	($5,613,458)	-37 76%
GA	Route 15, Wansley GA Branch	$1,303,222	$800,552	($502 670)	-38 57%
		$473,681,622	$252,652,260	($221,229,262)	-46 68%
TOTAL FOR SIX STATES		$1,533,692,603	$854,406,388	($679,486,306)	-44 30%

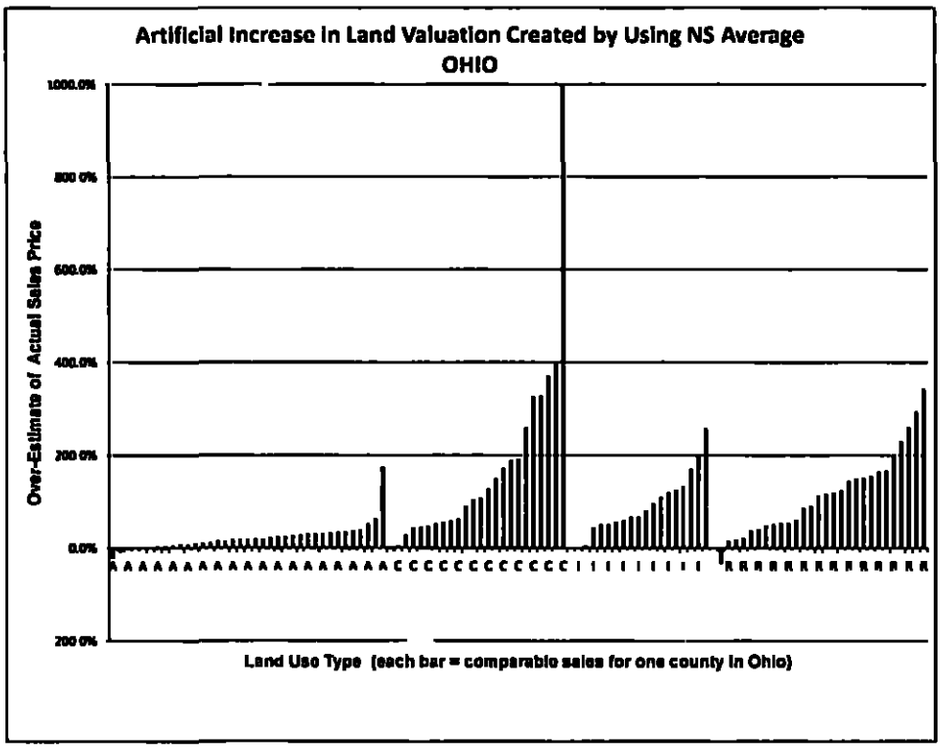
Note on the exhibit on the previous page that the first column of data is the land valuation applied to these routes by the NS Appraiser. The total route valuation for these six states is $1.533 billion. These route values were developed using the arithmetic mean, which tends to overstate land value because it does not take into account the varying sized land parcels in the sales set.

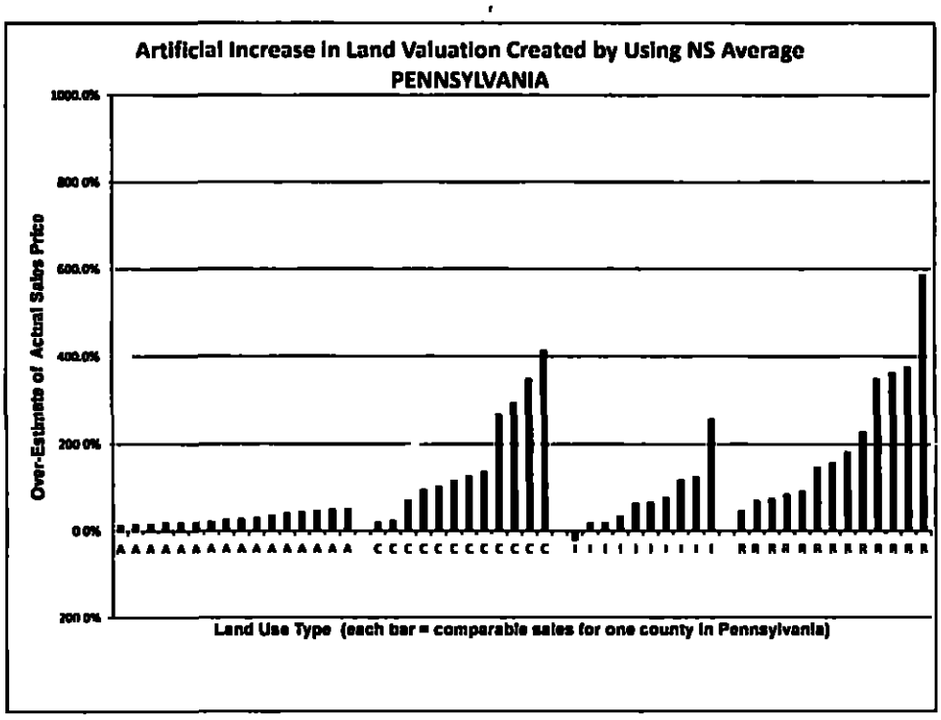
The next column shows the land valuation that would have been produced using the more supportable weighted mean, which does take into account the land area for each comparable sale. The total value for these six states using the weighted average would be $854.4 million.

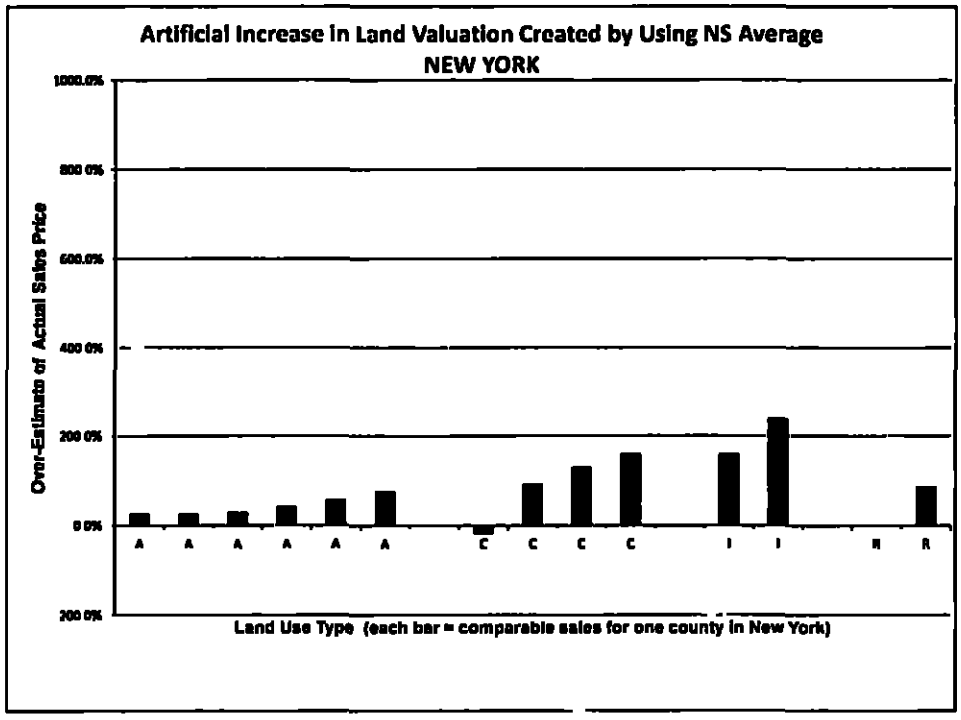
Thus, for these six states, using the weighted mean instead of the arithmetic mean would result in a $679.5 million reduction in land valuation, a reduction of 44.3%. This is a significant change in value caused by the selection of an inappropriate averaging technique by the NS Appraiser.

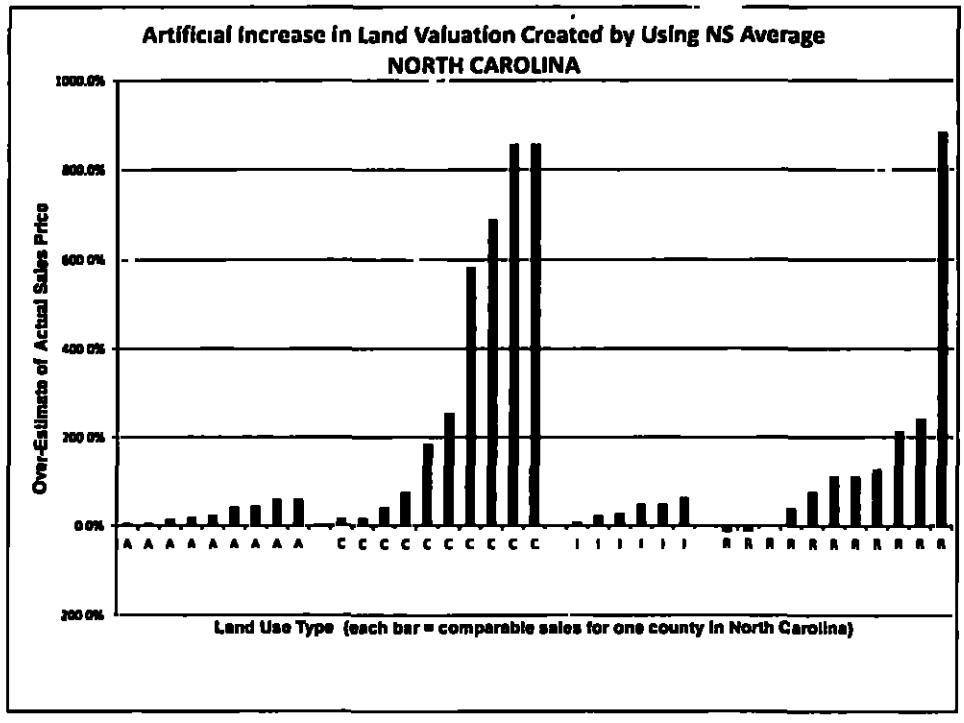
The graphs below illustrate the percent overstatement of land values by using the NS averaging technique in the six sample states.

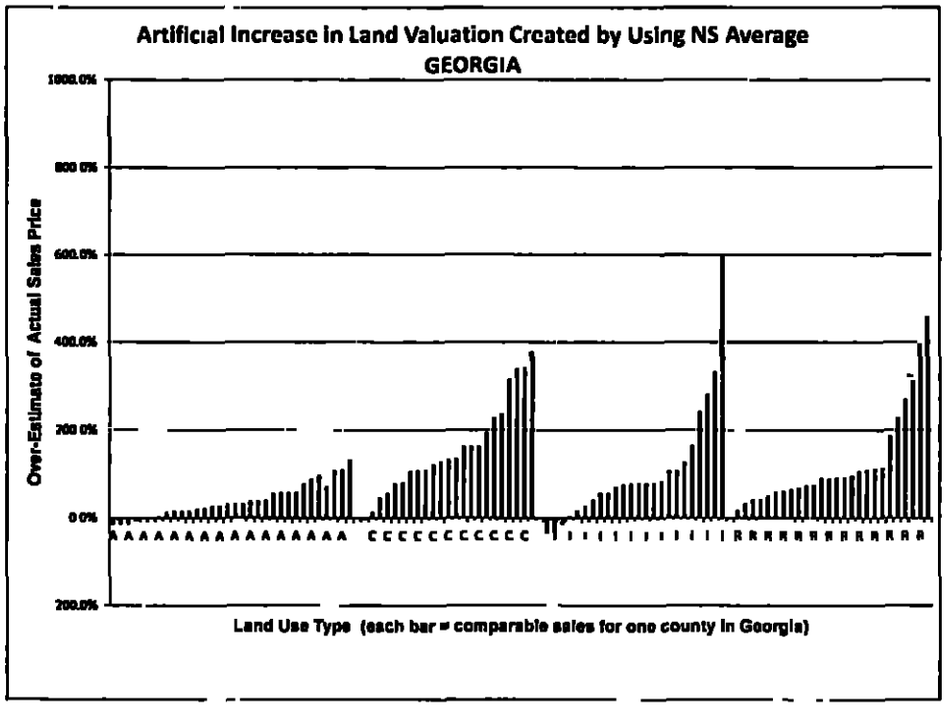



Artificial Increase in Land Valuation Created by Using NS Average
OHIO
1000.0%
800.0%
600.0%
400.0%
200.0%
0.0%
200.0%
Over-Estimate of Actual Sales Price
Land Use Type (each bar = comparable sales for one county in Ohio)


Artificial Increase in Land Valuation Created by Using NS Average
PENNSYLVANIA
1000.0%
800.0%
600.0%
400.0%
200.0%
0.0%
200.0%
Over-Estimate of Actual Sales Price
Land Use Type (each bar = comparable sales for one county in Pennsylvania)


Artificial Increase in Land Valuation Created by Using NS Average
NEW YORK
Over-Estimate of Actual Sales Price
1000.0%
800.0%
600.0%
400.0%
200.0%
0.0%
200.0%
A A A A A A C C C C I I R R
Land Use Type (each bar = comparable sales for one county in New York)


Artificial Increase in Land Valuation Created by Using NS Average
NORTH CAROLINA
Over-Estimate of Actual Sales Price
1000.0%
800.0%
600.0%
400.0%
200.0%
0.0%
200.0%
A A A A A A A A A C C C C C C C C C I I I I I I R R R R R R R R R R
Land Use Type (each bar = comparable sales for one county in North Carolina)



By failing to take parcel size into account when developing an average price per acre, the NS Appraiser has significantly overstated the valuation of the land in the areas not physically inspected by the appraiser.

Another way to measure the impact of using the arithmetic mean (as used by the NS Appraiser) vs. the weighted mean (as used in our appraisal) is to apply the average price back against the sales data used to calculate the average. In effect, this is using the calculated average to see how well that average reflects the real-world sales prices.

Comparable Land Sales Used by NS Appraiser

Test of NS Estimate of Value vs. Actual Sales Prices

[ ] = comparable sales (actual data)

= what properties would have sold for if they sold at NS Appraiser's estimated average price per acre

State	Route	County	Land Use Type	Numb. of Sales	NS Estimate of Avg $/Acre	Summation of Sales Prices Using NS Avg	Summation of Actual Sales Prices	Difference NS Estimate vs. Actual	% Difference NS Estimate vs. Actual
AL		Marengo County AL	A	23	$1,840	$3,497,343	$3,864,767	($367,424)	9.5%
AL		Etowah County, AL	A	22	$2,729	$3,329,733	$3,195,088	$134,644	4.2%
AL		Jefferson County AL	A	17	$12,513	$3,852,888	$3,370,491	$282,377	8.4%
AL		Limestone County, AL	A	19	$8,252	$10,008,557	$8,824,839	$1,081,717	11.0%
AL		Dallas County, AL	A	8	$2,282	$800,539	$689,240	$111,299	16.0%
AL		Bibb County AL	A	12	$7,060	$3,579,089	$2,865,075	$714,023	24.9%
AL		Bibb County AL	A	12	$7 060	$3,579,089	$2 865,075	$714,023	24 9%
AL		Mobile County, AL	A	63	$5,591	$20,893,637	$16,303,005	$4,590,632	28.2%
AL		Autauga County, AL	A	9	$2,981	$2,279 719	$1 764 260	$515,458	29 2%
AL	3	Route 3 - Birmingham, AL to New Orleans, LA	A	30	$9,906	$8,464 400	$6,339,400	$2,125,000	33.5%
AL	7	Route 7 - Austell, GA to Birmingham, AL	A	31	$9,436	$5,830,831	$4 100,481	$1,730,350	42.2%
AL		Lawrence County, AL	A	35	$6,101	$4 799,080	$3,372 428	$1,426,662	42.3%
AL	4	Route 4 - Bucsell, AL to Mobile, AL	A	136	$5,972	$45,803,750	$31 023,629	$14,580,121	47 0%
AL	5	Route 6 - Chattanooga, TN to Memphis, TN	A	59	$6,847	$22 007 310	$15,176,827	$7,730,483	50.9%
AL		St. Clair County, AL	A	11	$2,657	$823,572	$500,405	$317,167	62.6%
AL		St. Clair County AL	A	11	$2,657	$823,572	$500,405	$317,167	62.6%
AL		De Kalb County, AL	A	71	$7,322	$5 683,987	$3,353,078	$2,330,909	69 5%
AL		Russell County AL	A	158	$3,434	$32,064 700	$17,025,379	$15,939,411	93 6%
AL	1	Route 1 - Birmingham, AL to Chattanooga, TN	A	126	$8,399	$21,670,266	$11,059,240	$10,820,025	97 8%

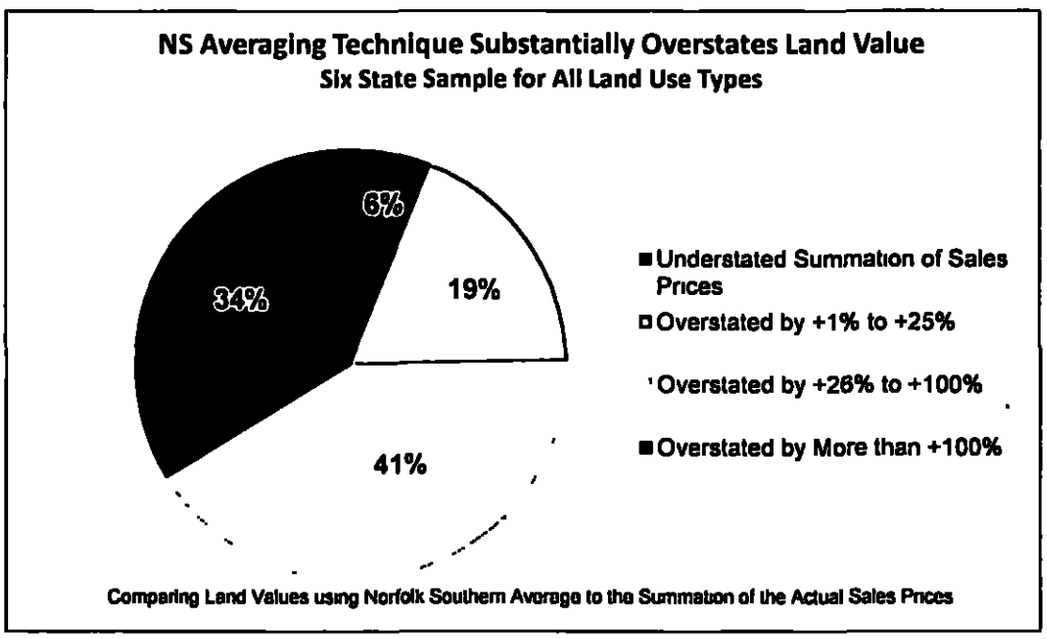
The table above shows what happens if the comparable sales used by the NS Appraiser had sold at the average price per acre developed by the NS Appraiser. In the Addenda of this report, are similar tables for all six states in our sample of areas not physically inspected by the NS Appraiser.

Each line in the table represents one county in Alabama, for agricultural (A) land sales. The summation of the actual sales prices for the agricultural sales in each Alabama county are shown in the GREEN column titled Summation of Actual Sales Prices. The column to the left of that is the summation of the estimated sales prices using the NS average. The two far right columns show the amount by which the summation of the actual

sales prices is overstated by using the NS Appraiser's arithmetic mean.[6]

Note that of the 19 Alabama counties shown in the above table, the summation of the land values are overstated by the NS averaging technique in 18 of the 19 counties. Note in the far right column that the percentage overstatement is significant.

For each land use type (industrial, residential, etc.) and for each jurisdiction (county) in these six states, we compared the average price per acre produced by the NS Appraiser to the summation of the actual sales prices used by the NS Appraiser:



We tested 364 sales data sets, representing all the land sales used by the NS Appraiser in these six states. For each set of sales, we compared the summation of the actual sales prices to the summation of the prices computed using the NS Appraiser's average land price. The results show the impact of

[6] "Summation" is the key word here: In the DuPont SARR analysis, we are looking at a large and widely varying group of subject properties - it is only reasonable to presume that the acquisition of the land for the SARR would resemble the same mix of sites that are reflected in the comparable sales data. While for any given parcel of property, the weighted average would probably not be appropriate, when attempting to arrive at a reasonable value sum for a large number of widely varying properties, an assignment where there cannot, by definition, be any single individual parcel to appraise, the weighted average is the only measure that can reasonable be used.

grouping a non-homogeneous set of sales into one data set and giving all sales equal weight leading to conclusions that could not produce a meaningful value.

In 94% of the cases, the use of the NS Appraiser's average land value overstated the summation of the actual sales prices. The degree of overstatement is significant - 75% of the time, the sales prices were overstated by more than 25%, and 34% of the time, the overstatement more than doubled the actual sales prices.

Using Same Sales Data for Both Urban and Rural Areas

In rural counties, sales data can be scarce. Many of these rural jurisdictions have little land sale activity, and often the data-gathering firms like CoStar and CoreLogic are not active in gathering sales in these rural areas.

When faced with few or no sales for a county, the NS Appraiser often relied on average land values for the entire route. The table below shows how often the route average land value is used in the six sample states:

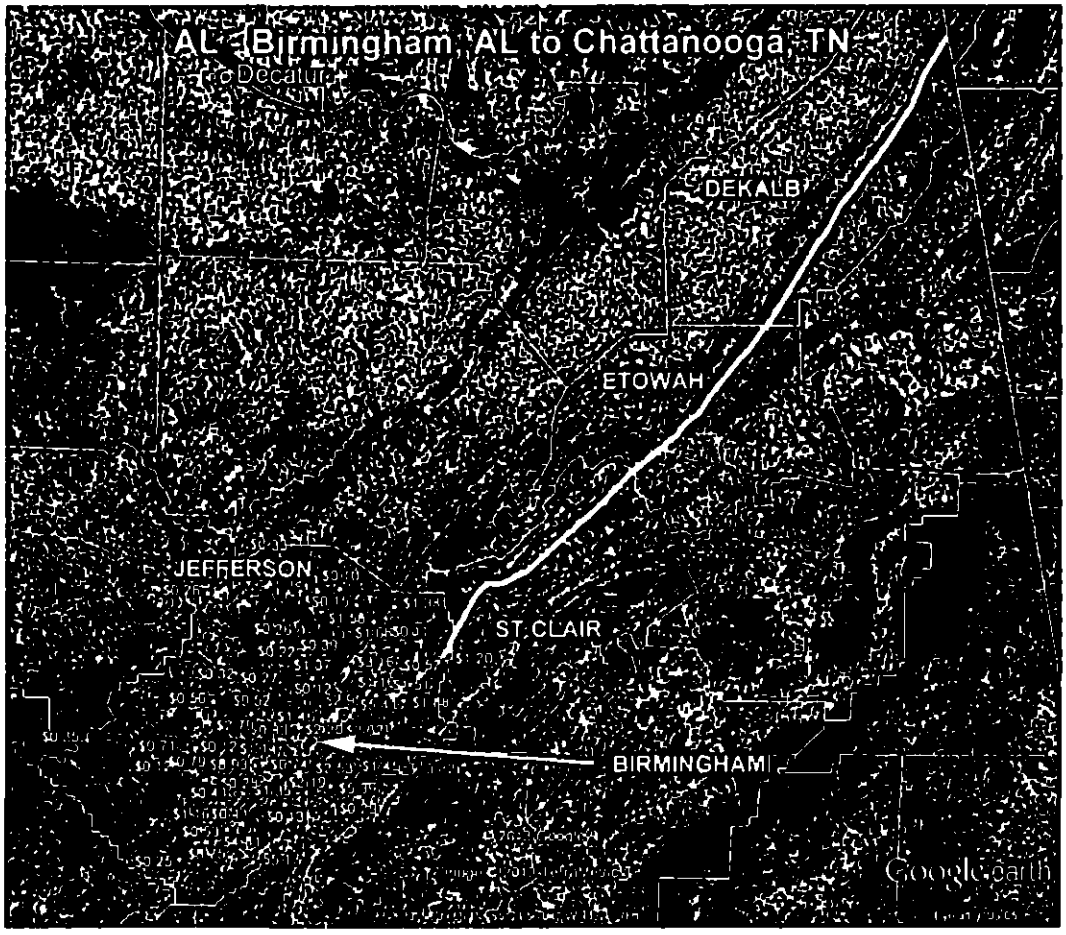
AREAS NOT PHYSICALLY INSPECTED BY NS (6 state sample)

Showing % of Value Created by a Route Average or State Average Land Value

State	NS Route	1 - NS Land Value	Total Without Route Avg	Amount in Route or State Avg	% in Route Values
AL	Route 1 Birmingham AL to Chattanooga TN	$40,273,082	$16,640,421	$23,626,661	58 67%
AL	Route 2 Birmingham AL	$2,944,875	$2,944,875	$0	0 00%
AL	Route 3 Birmingham AL to New Orleans LA	$37,490,484	$5,546 361	$31,944,123	85 21%
AL	Route 4, Burstall AL to Mobile AL	$30,054,968	$13,430,255	$22 024,713	02 75%
AL	Route 5 Macon GA to Mohrl AL	$4,067,160	$4 067 160	$0	0 00%
AL	Route 6 Chattanooga TN to Memphis TN	$52,526 027	$25,340,510	$27,185,517	51 76%
AL	Route 7 Austell GA to Birmingham AL	$31,874 443	$5,629,242	$26,245,201	82 34%
		$205,231,040	$73,604,824	$131,628,216	64 14%
OH	Route 1 Toledo OH	$16,112,423	$10,112,423	$0	0 00%
OH	Route 2 Chicago IL to Cleveland OH	$62,124,046	$41,513,240	$20 611,406	33 18%
OH	Route 3 Stanley Yard Branch (Toledo OH)	$2 715 396	$2,715,396	$0	0 00%
OH	Route 4 Chicago IL to Bellevue OH	$17 163,390	$16,242,825	$920,565	5 36%
OH	Route 5 Bellevue OH to Pittsburgh PA	$65,561,494	$54,415 673	$11,145,821	17 00%
OH	Route 6 Cleveland OH	$8,288,804	$8,288,804	$0	0 00%
OH	Route 7 Detroit MI to Columbus OH	$37,770,875	$20 495,841	$8 275 034	21 91%
OH	Route 8. Columbus OH	$2 020,948	$2,020,948	$0	0 00%
OH	Route 9 Columbus OH to Chillicothe OH	$20 441,884	$8,790,666	$11,651,218	57 00%
OH	Route 10 Cincinnati OH to Petersburg VA	$85,180,259	$71,637,082	$13 551 577	15 91%
OH	Route 12 Bellevue OH to Sandusky OH	$6 503 683	$1 798 494	$4 705,369	72 35%
		$323,892,984	$253,031,993	$70,860,990	21 88%
PA	Route 1 Bellevue OH to Pittsburgh PA	$9,540 293	$1,878,524	$7,661,769	80 31%
PA	Route 2 Prtsburgh PA	$30,374 915	$19 092 488	$11,282 427	37 14%
PA	Route 3 Prtsburgh PA to Harrisburg PA	$84,176,712	$30 198,121	$33,078 591	52.95%
PA	Route 4 Harrisburg PA	$14 628,209	$9 257 840	$5,370 369	36 71%
PA	Route 5 Harrisburg PA to Bayway NJ	$40,144,432	$26,389,902	$13,754,530	34 26%
PA	Route 6 Harrisburg PA to Roanoke VA	$24,128 931	$18,815,420	$5,313,511	22 02%
PA	Route 7 Buffalo NY to Harrisburg PA	$8,892,683	$8,892,083	$0	0 00%
PA	Route 8 Harrisburg PA to Edgemoor DE	$30 377,084	$30,377,084	$0	0 00%
PA	Route 9 Edgemoor DE to Morrisville PA	$72,466,826	$72,466 826	$0	0 00%
		$294,730,086	$217,368,868	$77,361,198	26 25%
NY	Route 1 Buffalo NY	$12 142,266	$12,142 266	$0	0 00%
NY	Route 2 Buffalo NY to Harrisburg PA	$81 671,414	$21,294,197	$60,377,217	73 93%
		$93,813,680	$21,294,197	$72,519,483	77 30%
NC	Route 1 Stokesland VA to Eden NC	$5,315,030	$143,850	$5,171,780	97 29%
NC	Route 2, Lynchburg VA to Atlanta GA	$87,871,799	$33,140,988	$54 730,811	02 28%
NC	Route 3 Yadkin Jct NC to Rockwell NC	$5,518,466	$1,994 024	$3,524,442	63.87%
NC	Route 5 Murphy Jct NC to Waynesville NC	$26,100,311	$8,130,588	$17 969,723	68.85%
NC	Route 6 New Line TN to Asheville NC	$17 537,196	$3,237 978	$14,299,218	81 54%
		$142,343,403	$46,647,428	$95,695,975	67 23%
GA	Route 1, Atlanta GA (Austell to Howell)	$21,168,130	$21,168,130	$0	0.00%
GA	Route 2 Atlanta GA (Howell to Duluth)	$88,358,079	$88,358 679	$0	0 00%
GA	Route 3 Atlanta GA (Howell to McDonough)	$41,094,386	$41 004 386	$0	0 00%
GA	Route 4 Atlanta GA (Spring Street to Morrow)	$27,976,841	$27 976 041	$0	0 00%
GA	Route 5 Chattanooga TN to Atlanta GA	$74,355,750	$48,365,298	$25,990,452	34 95%
GA	Route 0 Lynchburg VA to Atlanta GA	$83,766,998	$76,228 000	$7,538,080	9 00%
GA	Route 7; McDonough GA to Macon GA (Monroe)	$22,709,159	$18,317,408	$4,391,751	19 34%
GA	Route 8 Macon GA to Mohrl AL	$51,512,554	$42 072,324	$9,440,230	18 33%
GA	Route 9 Macon GA to Gracewood GA	$19 775,848	$14 990,868	$4,784,980	24 20%
GA	Route 10 Birmingham AL to Chattanooga TN	$4,821,126	$2,607,694	$2,213,432	45 91%
GA	Route 12 Austell GA to Birmingham AL	$41,125,613	$30,337,082	$4,787,831	11 64%
GA	Route 13 McDonough GA Branch	$3 048,567	$3 048,567	$0	0 00%
GA	Route 14 Bremen GA to Yates GA	$14 864,850	$12 497 052	$2,367,798	15 93%
GA	Route 15 Wansley GA Branch	$1,303,222	$1,303,222	$0	0 00%
		$473,881,522	$412,365,959	$61,515,563	12 98%
TOTAL FOR SIX STATES		$1,533,892,693	$1,024,313,269	$509,579,424	33.22%

For the six sample states shown on the table on the previous page, the NS Appraiser utilized route average land values for 33.2% of the total land valuation in these six states were derived using route average land values.

At first glance, using the route average land value seems like a reasonable way to deal with the lack of sales data for a rural county. However, most routes include at least one urban area, where sales data is typically available. **By using the route average land value, the NS Appraiser is transferring urban land values to rural counties.**



The aerial photo above shows the DuPont SARR route from Birmingham, AL to Chattanooga, TN, in the state of Alabama. The route (shown in light blue) passes through four Alabama counties: Jefferson (Birmingham), St. Clair, Etowah, and Dekalb.

Residential Land Sales
for Birmingham-Chattanooga Route

Alabama County	Number of Sales
Jefferson (Birmingham)	101
St Clair	0
Etowah	2
Dekalb	0
Total for Route	103

Jefferson County, AL includes the urban area of Birmingham. A total of 101 residential sales in Jefferson County were included in the NS Appraiser's comparable sales. The other three Alabama counties in the route are rural in character, and only two other residential sales were gathered by the NS Appraiser, both in Etowah County. The comparable sales are shown in the aerial photo on the previous page, with each sale indicated in YELLOW with its price per square foot of land shown on the photo.

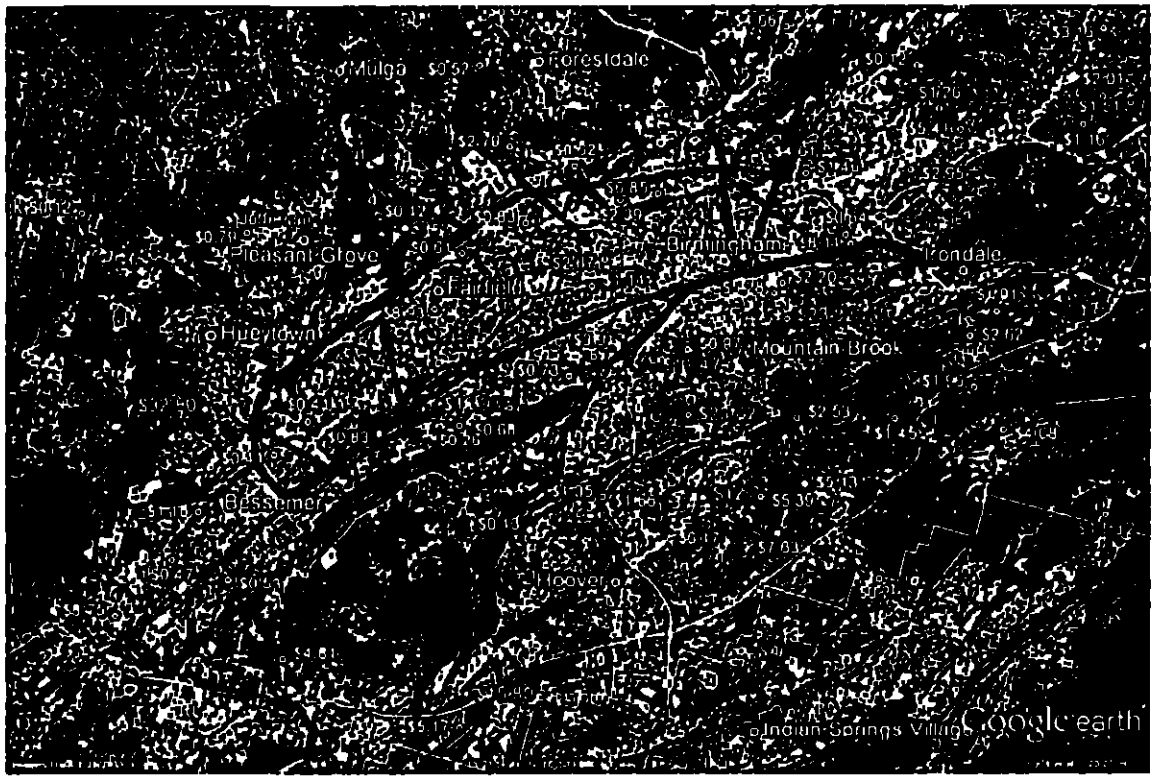
Alabama County	Number of Sales	JEFFERSON CO. RESIDENTIAL			TOTAL ROUTE RESIDENTIAL		
		Sales Excluded	Remaining Sales	Avg Value per Acre	Sales Excluded	Remaining Sales	Avg Value per Acre
Jefferson (Birmingham)	101	5	96	$122 730	11	90	
St Clair	0				0	0	
Etowah	2				0	2	
Dekalb	0				0	0	
Total for Route	103				11	92	$91,072

The table above summarizes how the NS Appraiser created residential land values for both Jefferson County by itself, and for the entire route of Birmingham to Chattanooga.

For Jefferson County alone, the NS Appraiser removed the 5 highest value sales from the data (again, with no documented rationale) and with the remaining 96 sales, produced an average price for residential land of $122,730 per acre. This value was applied to all residential line segments in Jefferson County.

To produce residential land values for the remainder of the route, in the Alabama counties of St. Clair, Etowah, and Dekalb,

the NS Appraiser added in the two residential sales from Etowah County, to create a total database of 103 sales. From this route sale total of 103 sales, the NS Appraiser then excluded the eleven highest sales (6 more than had been excluded from the same data in producing his Jefferson County average). By excluding more of the high-priced sales, the average price consequently fell to $91,072 per acre, a 25.8% reduction for the route average land value compared to the urban area Jefferson County average.



The photo above shows the portion of Jefferson County, AL that includes the greater Birmingham area. The development density of this area can easily be seen in the photo above. The YELLOW points are the sales that were INCLUDED in the overall route average for Birmingham-Chattanooga. The PURPLE points are the sales that were EXCLUDED from the route average.

Two patterns are evident in the photo above: First, not all the purely urban area sales have been removed by the NS Appraiser before developing a value for rural area land. Many YELLOW (included) land sales in the heart of the Birmingham urban core were used to create the rural land values for the

entire route. Second, some of the PURPLE sales that were excluded were located outside of the most heavily-developed portion of Birmingham.

This illustrates the basic appraisal issue with manipulating sales data solely on the basis of unit price. Unit price is not a surrogate for all the factors that impact land value, particularly if the sales data has not been properly categorized early on in the process.

It is not a valid appraisal procedure to create a rural area land value by using the lower-priced urban area sales. Although the result (i.e. a lower residential land value in the rural areas compared to the urban Jefferson County) is logical on its face, the methodology used by the NS Appraiser to create the rural land value is disconnected from the reality of the sales.

The NS Appraiser relied on route-average land values for 33% of the total land valuation in our six-state sample, thus creating a significant issue regarding reasonableness and reliability.

Areas Physically Inspected by the NS Appraiser

The NS Appraiser physically inspected 19 areas on the DuPont SARR. These 19 areas account for about 35% of the total NS Appraiser's land valuation for the DuPont SARR.

Compared to the areas that were not inspected by the NS Appraiser (as described in the previous section of this report), the NS Appraiser applied a totally different methodology in creating land values for the urban areas. In the areas not inspected, the NS Appraiser developed a single average price per acre for each property type in each county. That single average was applied to all line segments with that property type in that county.

In the 19 urban areas, the NS Appraiser produced a multitude of discrete unit prices. For example, in the New Orleans, LA area, the NS Appraiser utilized 39 different unit prices for industrial land. In Pittsburgh, the NS Appraiser used 46 different unit prices for residential land.

No documentation was provided by the NS Appraiser to support how these multiple discrete unit prices were developed. However, for this appraisal review it is not so much an issue of how these values were developed, as much as it is an issue of how the sales did not support the values created by the NS Appraiser.

The issues identified in the NS Appraiser's urban land valuations can be summarized as follows:

- In some urban areas, many more discrete unit prices were developed than the number of sales. For example, in Pittsburgh, PA for industrial land, the NS Appraiser developed 44 discrete unit prices for industrial land, using 3 comparable industrial unit sales.
- The sales data was not sufficient to support the unit prices developed by the NS Appraiser. Even in these urban areas, with the best availability of comparable land sales, there were often few sales or no sales in proximity to the DuPont SARR. The comparable sales that were included in the NS Appraiser's analysis were often located 1

to 3 miles away from the DuPont SARR. When appraising in urban areas, appraisers should be cognizant that even moving one block away can put you in an entirely different market area for real estate values.

- In some urban areas, the total valuation of the DuPont SARR land in the urban area by the NS Appraiser exceeded the average land value. Without sufficient sales proximate to the DuPont SARR, it is unclear how the NS Appraiser could determine that the overall valuation of land in the urban area should exceed the average land value calculated by the NS Appraiser.
- In some urban areas, the NS Appraiser applied unit values that were higher than the highest comparable sale unit price.

To document these appraisal issues, six urban areas were analyzed in detail as part of our appraisal review:

- Pittsburgh, PA
- Cleveland, OH
- New Orleans, LA
- Philadelphia, PA
- Atlanta, GA
- Columbus, OH

These six urban areas represent 53% of the total land valuation by the NS Appraiser in the 19 urban areas. These six urban areas also account for 18% of the total DuPont SARR base land valuation produced by the NS Appraiser.

Pittsburgh, PA

The NS Appraiser physically inspected 21.02 miles in the urban area of Pittsburgh, PA. The total valuation for this urban area was $287,222,288 for an average land value of $1,127,501 per acre. The average value per acre developed by the NS Appraiser in Pittsburgh was the highest average value per acre of all the urban areas he inspected, twice as high as the next highest priced urban area, Atlanta, GA (with an average valuation per acre of $552,321). Based on our own on-the-ground inspections of both Pittsburgh and Atlanta, the value conclusions by the NS Appraiser that Pittsburgh area real estate land values are twice as high as real estate land values in Atlanta is unrealistic.

As in all the urban areas physically inspected by the NS Appraiser, the NS Appraiser developed multiple price points for each property type. However, in Pittsburgh this process of creating multiple price points was particularly unsupported based on the number of comparable sales the NS Appraiser selected.

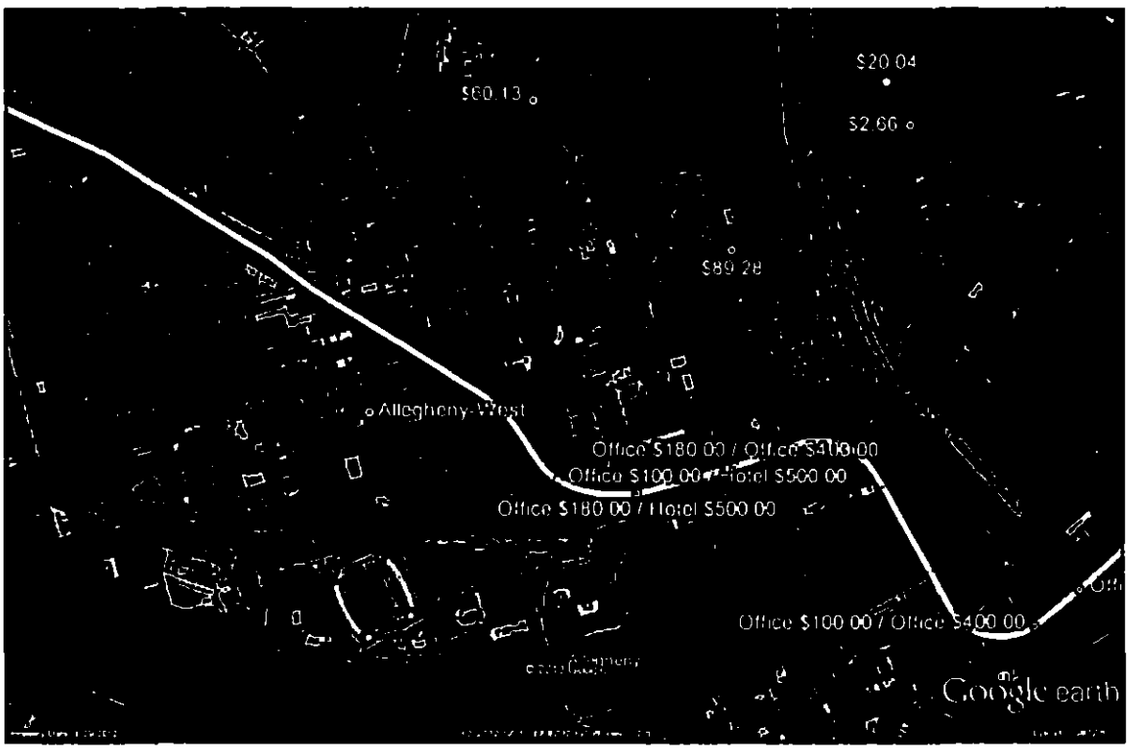
Number of Sales vs. Discrete Values
Pittsburgh, PA

Property Type	Number of Sales	Different Values/Acre
Industrial	3	44
Residential	9	46
Commercial	81	37

Sales data is for Allegheny County, PA
(excludes a small number of Beaver County sales)

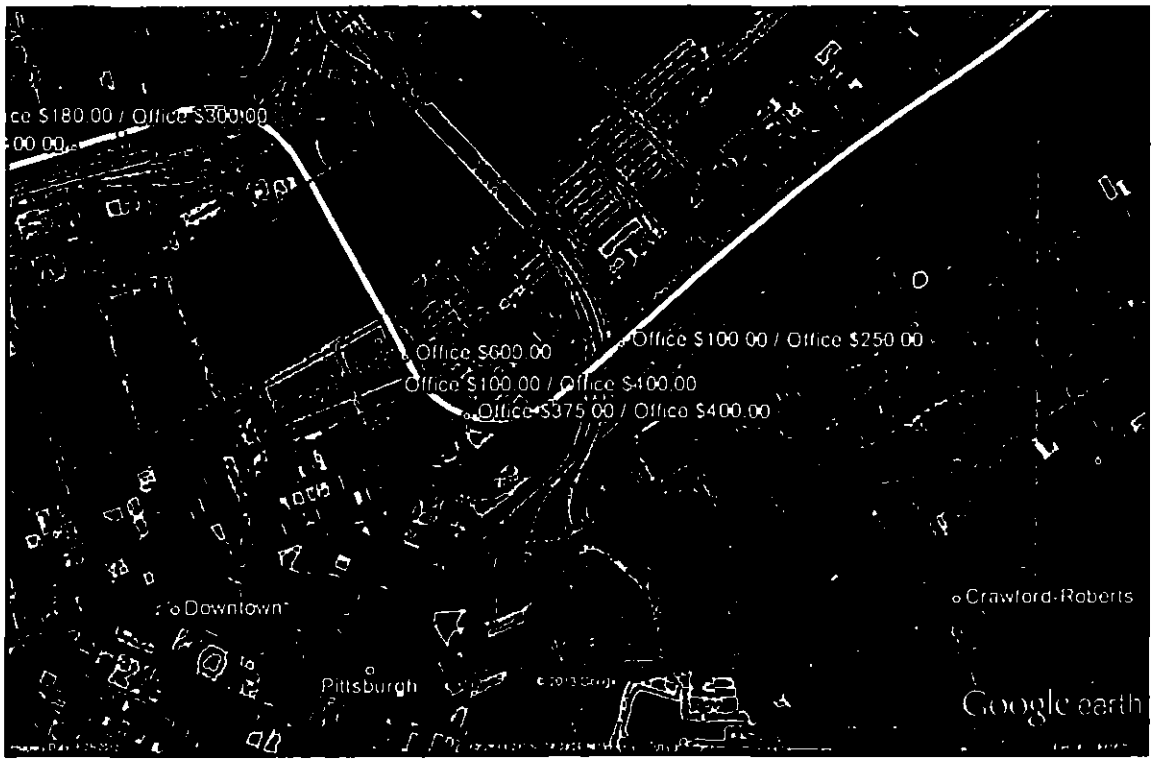
For both industrial and residential land, the NS Appraiser created far more discrete values than they had in total comparable sales. With only 3 industrial sales available for the entire Pittsburgh area, the NS Appraiser created 44 different values per acre for industrial land. Similarly, with only 9 residential land sales available, the NS Appraiser created 46 discrete values per acre for residential land.

Not only were the number of discrete values created by the NS Appraiser far out of proportion to the available sales, but from a geographic basis, the comparable sales selected by the NS Appraiser do not support their value conclusions.

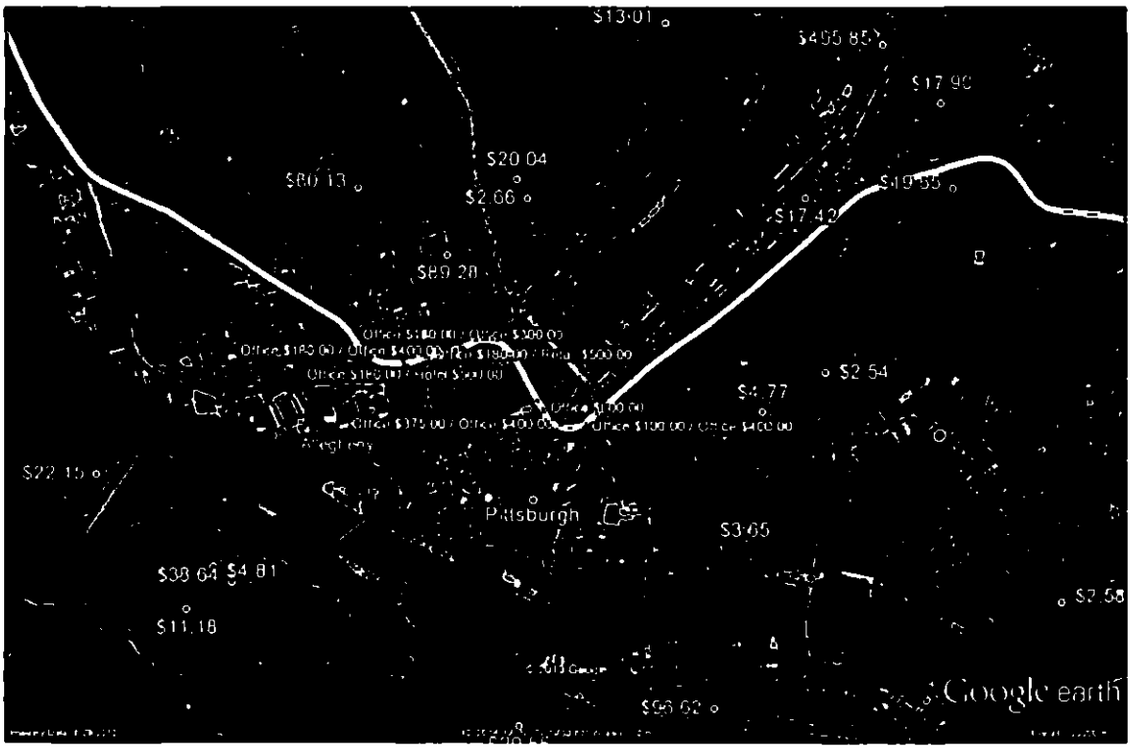


For example, the aerial photo above shows the DuPont SARR (ORANGE line) going through the heart of downtown Pittsburgh, along the Allegheny River. The prices shown in YELLOW are the commercial comparable sales utilized by the NS Appraiser, geocoded to show their location. All prices are shown per square foot of land. The prices shown in WHITE are the values the NS Appraiser applied to those portions of the DuPont SARR. The NS Appraiser applied commercial land values of $100.00 to $500.00 per square foot of land, even though their proximate land sales ranged from only $2.66 per square foot to $20.04 per square foot. The two sales marked in RED showed higher prices at $60.13 per square foot and $89.28 per square foot, but these sales are marked in RED because they were excluded from the analysis by the NS Appraiser as "outliers". Even so, these "outlier" sales are still below the value range for commercial land developed by the NS Appraiser of $100.00 to $500.00 per

square foot. They had NO sales in this geographic area anywhere near their concluded values



The aerial photo above illustrates the area on the south bank of the Allegheny River, near the Convention Center. In this area, the NS Appraiser valued commercial land at $100.00 per square foot to $600.00 per square foot. They had NO commercial land sales proximate to the DuPont SARR in this area.



Taking a wider perspective, the above aerial photo shows the downtown Pittsburgh area on both sides of the Allegheny River, and the photo is zoomed out to cover about 15 square miles. Even in such a broad geographic area, the NS Appraiser did not have any comparable sales to support their commercial land values of $100.00 per square foot up to $600.00 per square foot. The sales included in their analysis (YELLOW) are priced from $2.54 per square foot up to $38.64 per square foot. The sales excluded by the NS Appraiser as "outliers" range from $17.90 per square foot up to $96.62 per square foot. (Note: The one RED sale shown at $495.85 per square foot appears to be a purchase of multiple lots and a manufacturing facility, that was reported as the sale of a single, small vacant lot).

There was no rationale, reasoning or justification set forth by the NS Appraiser for commercial value conclusions ranging from $100.00 per square foot to $600.00 per square foot when the highest sale shown in the broad geographic area was only $38.64 per square foot.

Regardless of the mathematical or other technique an appraiser utilizes in their analysis, it is always incumbent on

the appraiser to consider the quantity and quality of the data available. The NS Appraiser, in developing many discrete land valuations in their analysis that were not directly supported by proximate comparable sales, produced value conclusions that are simply unsupported.

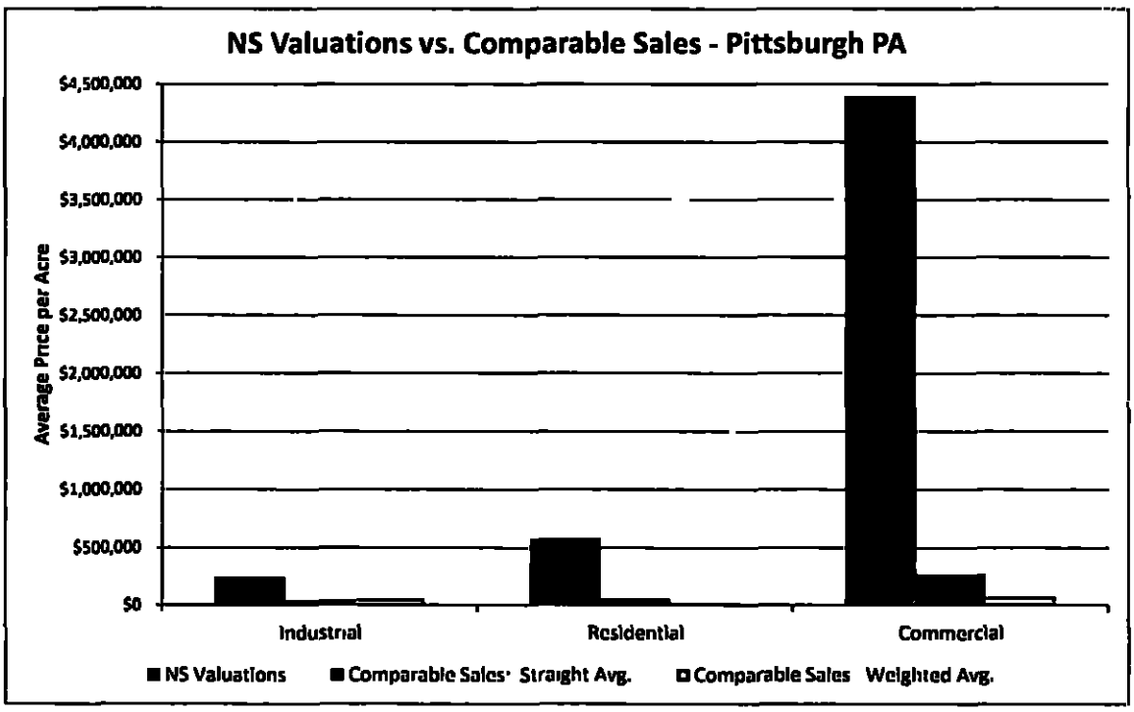
In fact, the NS land valuations in the Pittsburgh, PA area show a consistent pattern of higher valuations compared to their comparable sales.

VALUATIONS THAT EXCEEDED THE HIGHEST COMPARABLE SALE
Pittsburgh, PA

Property Type	Highest Price per Acre of "Included" NS Sales	Acres Valued by NS Above Highest Sale	% of NS Valuation of Property Type
Industrial	$63,177	120 1	99 3%
Residential	$148,804	59.2	96.6%
Commercial	$1,898,770	17 1	88.5%
TOTAL		196.4	90.8%

For example, as shown on the above table, the highest price for an Industrial land sale that was included in their analysis (according to the NS appraisers' evidence submitted) was $63,177 per acre. However, the land valuations for industrial land in the Pittsburgh area developed by the NS Appraiser exceeded this highest comparable sales price for 99.3% of the industrial land valued by the NS Appraiser.

For all three land types shown on the above table, 90.8% of the land valuations developed by the NS Appraiser in Pittsburgh exceeded the highest comparable sales price.



The NS Appraiser created overall valuations for the Pittsburgh area that far exceeded the average price of their comparable sales. The chart above shows that the average valuations per acre that the NS Appraiser developed (RED bars) far exceed the average price of their comparable sales. The average price for the NS comparable sales is shown using the straight average employed by the NS Appraiser in non-inspected areas (BLUE bars) as well as the more supportable weighted average price (GOLD bars).

The degree to which the NS land valuations in the Pittsburgh area exceed the average price (and in some cases exceed the highest price) of their comparable sales is unsupported by their analysis, and is unrealistic. No evidence is provided to support the apparent conclusion that the land values in the portions of Pittsburgh traversed by the DuPont SARR are significantly higher in average land value than the comparable sales chosen by the NS Appraiser.

Had the NS Appraiser developed overall land valuations for Pittsburgh that were in line with the average sales prices of their comparable sales, the overall land valuations for

Pittsburgh would be more realistic, and would be significantly lower than the NS land valuations presented in their report:

Norfolk Southern Valuations vs. Comparable Sales
Pittsburgh, PA

Property Type	Acres Valued	Average NS Valuation per Acre	Comp Sales: Straight Avg. per Acre	Change in Valuation If NS Had Used the Straight Avg of Sales	Comp Sales. Weighted Avg. per Acre	Change in Valuation If NS Had Used the Weighted Avg of Sales
Industrial	125 7	$243,690	$44,099	($25,079,237)	$55,666	($23,625,799)
Residential	72 0	$574,753	$58,588	($37,177,405)	$23,740	($39,687,380)
Commercial	48 9	$4,395,707	$267,301	($202,041,673)	$72,315	($211,584,177)
TOTAL	246.6	$1,164,312		($264,298,315)		($274,897,356)
Change in Total NS Valuation				-92.0%		-95.7%

Total NS Land Valuation for Pittsburgh PA: $287,222,288

If the NS Appraiser had developed overall land valuations consistent with their preferred "straight average" (that gives equal weight to each sale, regardless of land area), the land valuation for the Pittsburgh area would decline by $264.3 million dollars, a 92.0% decline in land valuation. Had the NS Appraiser developed overall land valuations for the Pittsburgh area consistent with the more supportable and realistic "weighted average" (that takes into the account the size of each sale parcel), the land valuation for the Pittsburgh area would decline by $274.9 million, a reduction of 95.7%.

In summary, the land valuations developed by the NS Appraiser in the Pittsburgh, PA area are unsupported by their comparable sales. The NS Appraiser failed to consider the quantity and quality of the sales data included in their analysis. Whatever mathematical techniques were utilized in their valuation, the NS Appraiser clearly exceeded the ability of the sales data to support their conclusions. Their analysis produced a significantly inflated land valuation that is not only unsupported, but is clearly unrealistic given the sales data used in their report. With no clear connection between actual land sales and the NS value conclusions, it must be concluded that the NS land valuations in the Pittsburgh, PA are unsupported and unreliable.

Cleveland, OH

The NS Appraiser physically inspected 45.21 miles in the urban area of Cleveland, Ohio. Their total valuation for this urban area was $123,409,360 for an average land value of $265,741 per acre Based on the data and analysis set forth in the documentation provided, this value was not supported by the sales data used by the NS Appraiser.

As in all the urban areas physically inspected by NS, the NS Appraiser developed multiple price points for each property type. They developed 34 (12 industrial, 10 residential, 12 commercial) discrete land values for Cleveland:

Number of Sales vs. Discrete Values
Cleveland, OH

Property Type	Number of Sales	Different Values/Acre
Industrial	24	12
Residential	24	10
Commercial	84	12

Overall, the number of discrete values compared to the number of sales available does not seem unreasonable. However, application of so many discrete values to the DuPont SARR implies that sufficient sales proximate to the SARR were available to develop such fine gradations in valuation. In reality, there were nowhere near enough comparable sales proximate to the DuPont SARR to allow for the development of multiple discrete values by the NS Appraiser. The conclusions and land values applied by the NS Appraiser for their Cleveland land valuations were not supported by their comparable sales.

For example, the aerial photo above shows the DuPont SARR (ORANGE line) going through the heart of downtown Cleveland. The prices shown in YELLOW are the commercial comparable sales utilized by the NS Appraiser, geocoded to show their location. All prices are shown per square foot of land. The prices shown in WHITE are the values the NS Appraiser applied to those portions of the DuPont SARR. The NS Appraiser applied commercial land values of $35.00 to $80.00 per square foot of land, even though their proximate land sales ranged from only $8.30 per square foot to $11.84 per square foot. They had NO sales in this geographic area anywhere near their concluded values.

There was no rationale, reasoning or justification set forth by the NS Appraiser for commercial value conclusions ranging from $35.00 per square foot to $80.00 per square foot when the highest sale shown in the broad geographic area was only $11.84 per square foot. With a highest commercial sale (YELLOW prices) of $11.84 per square foot shown in the exhibit above, the valuations of $35.00 per square foot to $80.00 per square foot are completely unsupported. Thus, even in cases

such as Cleveland, where there may have been enough comparable sales to support multiple discrete land values, the lack of a geographic connection between the sales and the land values estimated by the NS Appraiser forces the reader to conclude that the valuations do not follow from the data.

This is a theme that runs through all the urban areas described in this report: The lack of a reasonable and discernible connection between the NS Appraiser's land value conclusions and the actual sales used in the NS Appraiser's analysis. The resulting value conclusions are unsupported and unreliable.

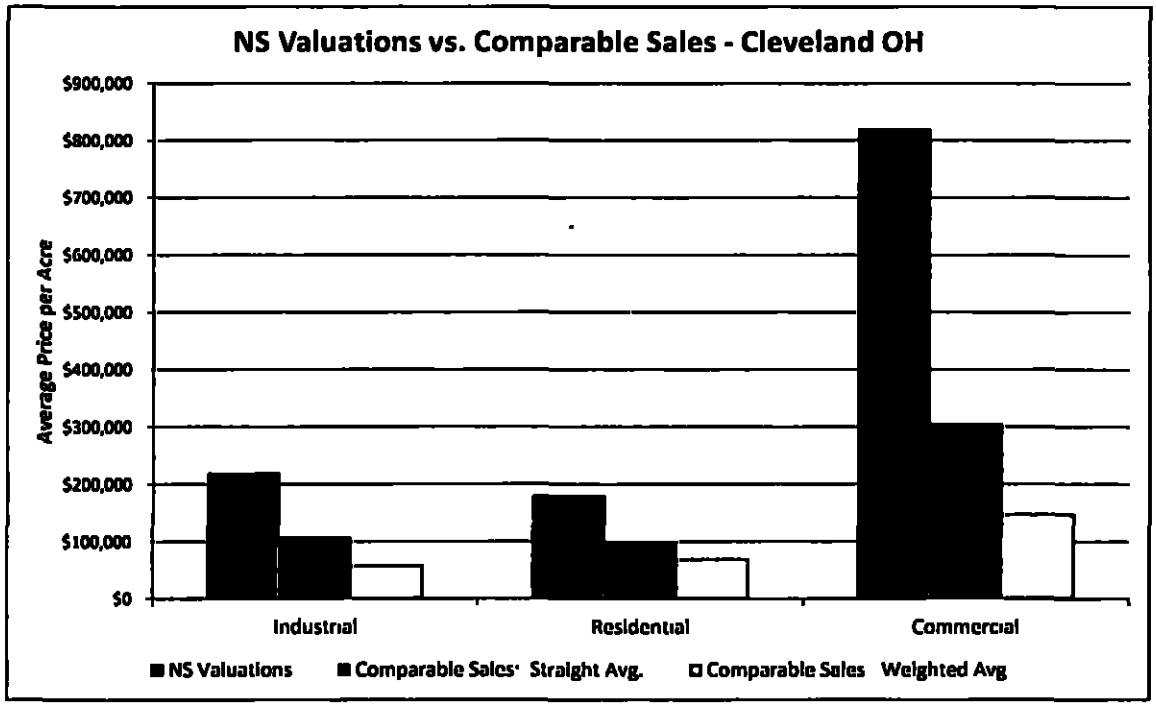
The NS land valuations in the Cleveland, OH area show a consistent pattern of higher valuations compared to their comparable sales.

VALUATIONS THAT EXCEEDED THE HIGHEST COMPARABLE SALE
Cleveland, OH

Property Type	Highest Price per Acre of "Included" NS Sales	Acres Valued by NS Above Highest Sale	% of NS Valuation of Property Type
Industrial	$260,748	61.5	48.9%
Residential	$210,776	40.6	38 5%
Commercial	$809,241	14.4	79 8%
TOTAL		116.5	56.2%

For example, as shown on the above table, the highest price for an Industrial land sale that was included in their analysis (according to the NS Appraiser's evidence submitted) was $260,748 per acre. However, the land valuations for industrial land in the Cleveland area developed by the NS Appraiser exceeded this highest comparable sales price for almost 48.9% of the industrial land valued by the NS Appraiser.

For all three land types shown on the above table, the NS Appraiser developed land valuations for 56.2% of the land valued in Cleveland that exceeded the highest comparable sales price.



The NS Appraiser created overall valuations for the Cleveland area that far exceeded the average price of their comparable sales. The chart above shows that the average valuations per acre that the NS Appraiser developed (RED bars) far exceed the average price of their comparable sales. The average price for the NS comparable sales is shown using the straight average employed by the NS Appraiser in non-inspected areas (BLUE bars) as well as the more supportable weighted average price (GOLD bars).

The degree to which the NS land valuations in the Cleveland area exceed the average price (and in some cases exceeded the highest price) of their comparable sales is unsupported by their analysis, and is unrealistic. No evidence is provided to support the apparent conclusion that the land values in the portions of Cleveland traversed by the DuPont SARR are significantly higher in average land value than the comparable sales chosen by the NS Appraiser.

Had the NS Appraiser developed overall land valuations for Cleveland that were in line with the average sales prices of their comparable sales, the overall land valuations for Cleveland would be more realistic, and would be significantly lower than the NS land valuations presented in their report:

Norfolk Southern Valuations vs. Comparable Sales
Cleveland, OH

Property Type	Acres Valued	Average NS Valuation per Acre	Comp Sales Straight Avg. per Acre	Change in Valuation if NS Had Used the Straight Avg of Sales	Comp Sales: Weighted Avg per Acre	Change in Valuation if NS Had Used the Weighted Avg of Sales
Industrial	241 3	$219,870	$108,281	($26,923,002)	$59,738	($38,634,686)
Residential	168 9	$181,503	$99,108	($13,914,666)	$71,524	($18,572,963)
Commercial	48 4	$820,073	$305,854	($24,865,052)	$149,502	($32,425,488)
TOTAL	458.5			($65,702,719)		($89,633,136)
Change in Total NS Valuation				-53.2%		-72.6%

Total NS Land Valuation for Cleveland, OH $123,409,360

If the NS Appraiser had developed overall land valuations consistent with their preferred "straight average" (that gives equal weight to each sale, regardless of land area), the land valuation for the Cleveland area would decline by $65.7 million dollars, a 53.2% decline in land valuation. Had the NS Appraiser developed overall land valuations for the Cleveland area consistent with the more supportable and realistic "weighted average" (that takes into the account the size of each sale parcel), the land valuation for the Cleveland area would decline by $89.6 million, a reduction of 72.6%.

In summary, the land valuations developed by the NS Appraiser in the Cleveland, OH area are unsupported by their comparable sales. The NS Appraiser failed to consider the quantity and quality of the sales data included in their analysis.

Whatever mathematical techniques were utilized in their valuation, the NS Appraiser clearly exceeded the ability of the sales data to support their conclusions. Their analysis produced a significantly inflated land valuation that is not only unsupported, but is clearly unrealistic given the sales data used in their report. With no clear connection between actual land sales and the NS value conclusions, it must be concluded that the NS land valuations in the Cleveland, OH are unsupported and unreliable.

New Orleans, LA

The NS Appraiser physically inspected 55.23 miles in the urban area of New Orleans, PA. The total valuation for this urban area was $74,848,896 for an average land value of $133,454 per acre.

As in all the urban areas physically inspected by NS, the NS Appraiser developed multiple price points for each property type, but in New Orleans, this process of creating multiple price points was particularly unsupported based on the number of comparable sales the NS Appraiser selected.

Number of Sales vs. Discrete Values
New Orleans, LA

Property Type	Number of Sales	Different Values/Acre
Industrial	2	39
Residential	16	66
Commercial	9	34

For all three land types, the NS Appraiser created far more discrete values than they had in total comparable sales. With only 2 industrial sales available for the entire New Orleans area, the NS Appraiser created 39 different values per acre for industrial land. Similarly, with only 16 residential land sales available, the NS Appraiser created 66 discrete values per acre for residential land.

The NS Appraiser were able, for all property types combined, to produce 139 discrete values using only 27 total sales - an average of 5 values derived from each sale!

The above aerial photo illustrates just how thin the comparable sales data was in the NS appraiser's analysis. The 27 total sales of all land types are shown above. The land sales (prices in YELLOW) are spread out over a large area (the photo above covers approximately 300 square miles). Most of the comparable sales are also located a considerable distance from the route of the DuPont SARR.

Not only were the number of discrete values created by the NS Appraiser far out of proportion to the available sales, but from a geographic basis, the comparable sales selected by the NS Appraiser do not support their value conclusions.

Regardless of the mathematical or other technique an appraiser utilizes in their analysis, it is always incumbent on the appraiser to consider the quantity and quality of the data available. The NS Appraiser, in developing many discrete land valuations in their analysis that were not directly supported by proximate comparable sales, produced value conclusions that are simply unsupported.

The NS land valuations in the New Orleans, LA, while generally within the range of the comparable sales prices, did exceed the highest comparable sale for commercial land:

VALUATIONS THAT EXCEEDED THE HIGHEST COMPARABLE SALE
New Orleans, LA

Property Type	Highest Price per Acre of "Included" NS Sales	Acres Valued by NS Above Highest Sale	% of NS Valuation of Property Type
Industrial	$491,880	0.0	0.0%
Residential	$1,343,365	0 0	0.0%
Commercial	$828,041	4.2	19.8%
TOTAL		4.2	6.2%

As shown on the above table, the highest price for a commercial land sale that was included in their analysis (according to the NS Appraiser's evidence submitted) was $828,041 per acre. However, the land valuations for commercial land in the New Orleans area developed by the NS Appraiser exceeded this highest comparable sales price for 19.8% of the commercial land valued by the NS Appraiser.

The NS Appraiser created overall valuations for the New Orleans area that were generally below the average price of their comparable sales.

Norfolk Southern Valuations vs. Comparable Sales
New Orleans, LA

Property Type	Acres Valued	Average NS Valuation per Acre	Comp Sales: Straight Avg. per Acre	Change in Valuation If NS Had Used the Straight Avg of Sales	Comp Sales: Weighted Avg. per Acre	Change in Valuation If NS Had Used the Weighted Avg of Sales
Industrial	146 5	$126,264	$379,622	$37,106,328	$306,371	$26,378,221
Residential	171 2	$188,757	$457,723	$46,044,043	$303,687	$19,674,744
Commercial	56.1	$417,745	$425,065	$410,668	$149,309	($15,057,808)
TOTAL	373.7	$198,636		$83,561,038		$30,995,157
Change in Total NS Valuation				111.6%		41.4%

Total NS Land Valuation for New Orleans, LA $74,848,896

Had the NS Appraiser developed overall land valuations for New Orleans that were in line with the average sales prices of their comparable sales, the overall land valuations for New Orleans would be have increased. Given the poor quality of the comparable sales, it is unclear what factors the NS Appraiser used to produce valuations lower than their comparable sales.

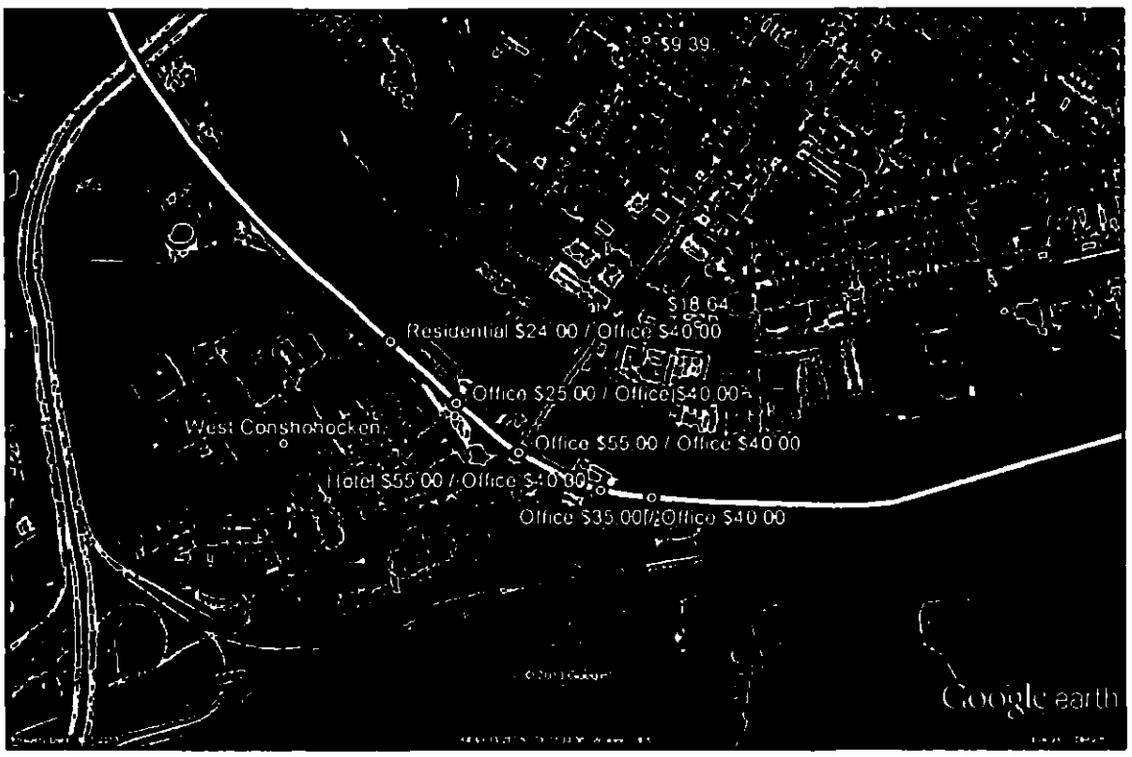
In summary, the land valuations developed by the NS Appraiser in the New Orleans, LA area are unsupported by their comparable sales. The NS Appraiser failed to consider the quantity and quality of the sales data included in their analysis. Whatever mathematical techniques were utilized in their valuation, the NS Appraiser clearly exceeded the ability of the sales data to support their conclusions. With no clear connection between actual land sales and the NS value conclusions, it must be concluded that the NS land valuations in the New Orleans, LA are unsupported and unreliable.

Philadelphia, PA

The NS Appraiser physically inspected 10.87 miles in the urban area of Philadelphia, PA. Their total valuation for this urban area was $48,561,488 for an average land value of $491,559 per acre. Based on the data and analysis set forth in the documentation provided, this value was not supported by the sales data used by the NS Appraiser.

As in all the urban areas physically inspected by NS, the NS Appraiser developed multiple price points for each property type. They developed 6 different values for Industrial land, 8 different values for commercial land, and 9 different values for residential land – a total of 23 discrete land values applied over 10.87 miles.

Such precision in developing discrete price points would lead the reader to conclude that the NS Appraiser were dealing with an extensive set of comparable sales, enabling them to discern small differences in price over relatively small geographic areas in proximity to the SARR. However, the conclusions and land values applied by the NS Appraiser for their Philadelphia land valuations were not supported by their comparable sales.



The above aerial photo shows a portion of the DuPont SARR (ORANGE line) in the Philadelphia area of West Conshohocken. The prices shown in YELLOW are the commercial comparable sales utilized by the NS Appraiser, geocoded to show their location. All prices are shown per square foot of land. The prices shown in WHITE are the values the NS Appraiser applied to those portions of the DuPont SARR. The NS Appraiser applied commercial land values of $25.00 to $55.00 per square foot of land, even though their proximate land sales ranged from only $9.39 per square foot to $18.64 per square foot, and these sales are located on the other side of the river from the SARR. They had NO sales in this geographic area anywhere near their concluded values.

There was no rationale, reasoning or justification set forth by the NS Appraiser for commercial value conclusions ranging from $25.00 per square foot to $55.00 per square foot when the highest sale shown in the broad geographic area was only $18.64 per square foot. With a highest commercial sale (YELLOW prices) of $18.64 per square foot shown in the exhibit

above, the valuations of $25.00 per square foot to $55.00 per square foot are completely unsupported.

This is a theme that runs through all the urban areas described in this report: The lack of a reasonable and discernible connection between the NS Appraiser's land value conclusions and the actual sales used in the NS Appraiser's analysis. The resulting value conclusions are unsupported. and unreliable.

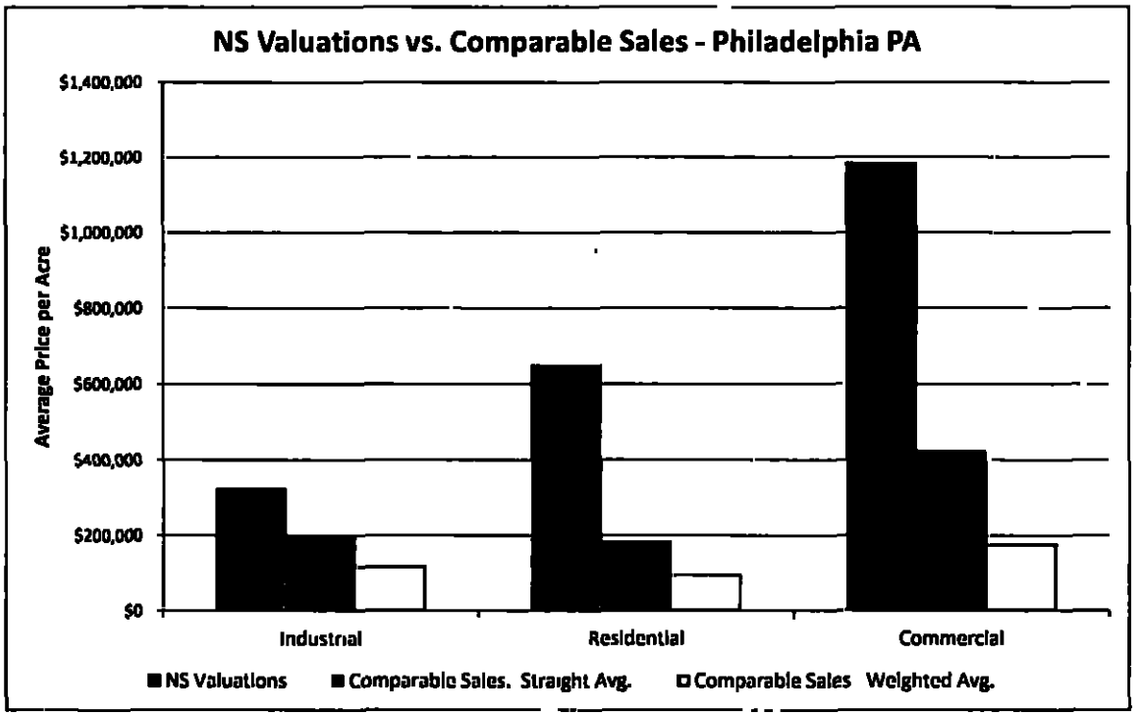
The NS land valuations in the Philadelphia, PA area show a consistent pattern of higher valuations compared to their comparable sales.

VALUATIONS THAT EXCEEDED THE HIGHEST COMPARABLE SALE
Philadelphia PA

Property Type	Highest Price per Acre for "Included" NS Sales	Acres Valued by NS Above Highest Sale	% of NS Valuation of Property Type
Residential	$777,891	14.2	67.0%
Commercial	$1,643,006	3 4	45 3%
TOTAL		17.6	46.1%

For example, as shown on the above table, the highest price for a residential land sale that was included in their analysis (according to the NS Appraiser's evidence submitted) was $777,891 per acre. However, the land valuations for residential land in the Philadelphia area developed by the NS Appraiser exceeded this highest comparable sales price for 67.0% of the industrial land valued by the NS Appraiser.

For the two land types shown on the above table, the NS Appraiser developed land valuations for 46.1% of the land valued in Philadelphia that exceeded the highest comparable sales price.



The NS Appraiser created overall valuations for the Philadelphia area that far exceeded the average price of their comparable sales. The chart above shows that the average valuations per acre that the NS Appraiser developed (RED bars) far exceed the average price of their comparable sales. The average price for the NS comparable sales is shown using the straight average employed by the NS Appraiser in non-inspected areas (BLUE bars) as well as the more supportable weighted average price (GOLD bars).

The degree to which the NS land valuations in the Philadelphia area exceed the average price (and in some cases exceeded the highest price) of their comparable sales is unsupported by their analysis, and is unrealistic. No evidence is provided to support the apparent conclusion that the land values in the portions of Philadelphia traversed by the DuPont SARR are significantly higher in average land value than the comparable sales chosen by the NS Appraiser.

Had the NS Appraiser developed overall land valuations for Philadelphia that were in line with the average sales prices of their comparable sales, the overall land valuations for

Philadelphia would be more realistic, and would be significantly lower than the NS land valuations presented in their report:

Norfolk Southern Valuations vs. Comparable Sales
Philadelphia PA

Property Type	Acres Valued	Average NS Valuation per Acre	Comp Sales· Straight Avg. per Acre	Change in Valuation if NS Had Used the Straight Avg of Sales	Comp Sales. Weighted Avg. per Acre	Change in Valuation if NS Had Used the Weighted Avg of Sales
Industrial	21.7	$324,973	$201,580	($2,675,852)	$120,266	($4,439,180)
Residential	35 6	$650,213	$185,257	($16,573,815)	$99,422	($19,633,465)
Commercial	12 7	$1,186,375	$425,229	($9,689,536)	$179,397	($12,819,034)
TOTAL	70.1			($28,939,203)		($36,891,678)
Change in Total NS Valuation				-59.6%		-76 0%

Total NS Land Valuation for Philadelphia PA $48,561,488

If the NS Appraiser had developed overall land valuations consistent with their preferred "straight average" (that gives equal weight to each sale, regardless of land area), the land valuation for the Philadelphia area would decline by $28.9 million dollars, a 59.6% decline in land valuation. Had the NS Appraiser developed overall land valuations for the Philadelphia area consistent with the more supportable and realistic "weighted average" (that takes into the account the size of each sale parcel), the land valuation for the Philadelphia area would decline by $36.9 million, a reduction of 76.0%.

In summary, the land valuations developed by the NS Appraiser in the Philadelphia, PA area are unsupported by their comparable sales. The NS Appraiser failed to consider the quantity and quality of the sales data included in their analysis. Whatever mathematical techniques were utilized in their valuation, the NS Appraiser clearly exceeded the ability of the sales data to support their conclusions. Their analysis produced a significantly inflated land valuation that is not only unsupported, but is clearly unrealistic given the sales data used in their report. With no clear connection between actual land sales and the NS value conclusions, it must be concluded that the NS land valuations in the Philadelphia, PA *are unsupported and unreliable.*

Atlanta, GA

The NS Appraiser physically inspected 27.88 miles in the urban area of Atlanta, GA. Their total valuation for this urban area was $139,995,998 for an average land value of $552,321 per acre. Based on the data and analysis set forth in the documentation provided, this value was not supported by the sales data used by the NS Appraiser.

As in all the urban areas physically inspected by NS, the NS Appraiser developed multiple price points for each property type. They developed 116 (38 industrial, 40 residential, 38 commercial) discrete land values for Atlanta:

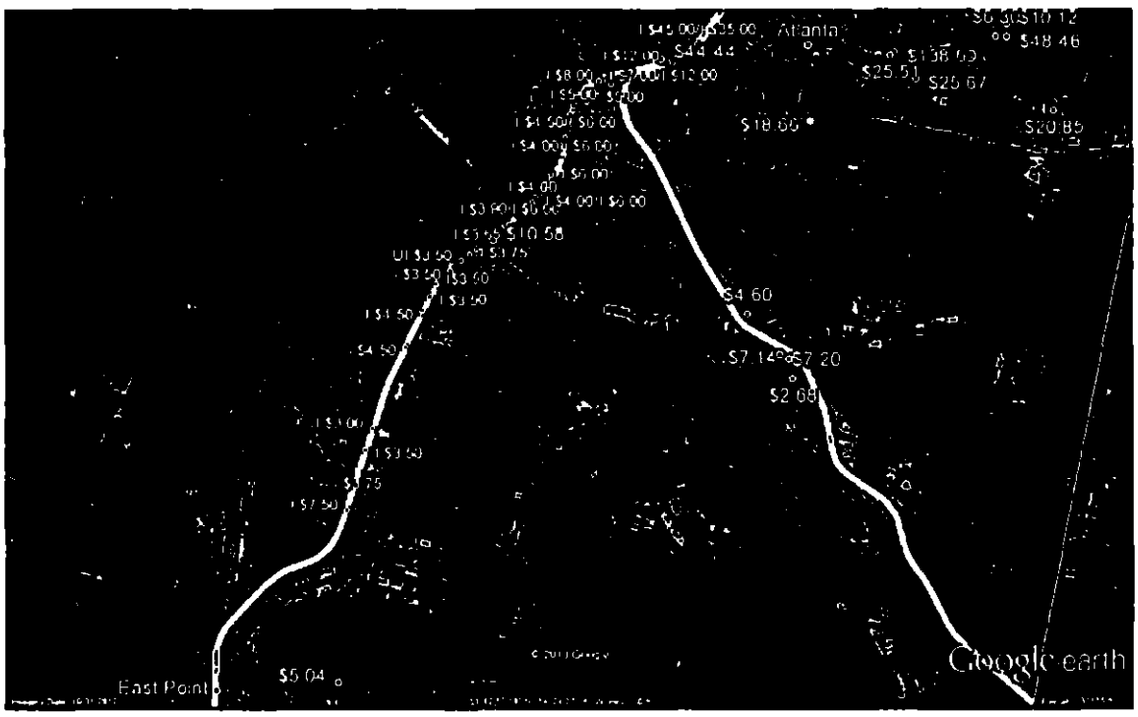
Number of Sales vs. Discrete Values
Atlanta, GA

Property Type	Number of Sales	Different Values/Acre
Industrial	86	38
Residential	622	40
Commercial	609	38

Overall, the number of discrete values compared to the number of sales available does not seem unreasonable. However, application of so many discrete values to the DuPont SARR implies that sufficient sales proximate to the SARR were available to develop such fine gradations in valuation. However, the conclusions and land values applied by the NS Appraiser for their Atlanta land valuations were not supported by their comparable sales.

The above aerial photo shows a portion of the DuPont SARR (ORANGE line) in the Atlanta area (from Howell Tower on the north to the Georgia Dome/World Congress Center area on the south). The prices shown in YELLOW are the industrial comparable sales utilized by the NS Appraiser, geocoded to show their location. All prices are shown per square foot of land. The prices shown in WHITE are the values the NS Appraiser applied to those portions of the DuPont SARR. The NS Appraiser applied 17 discrete industrial land values in this corridor, ranging from $3.00 per square foot to $32.00 per square foot of land. There were only eight industrial land sales in the overall area (plus one sale excluded by the NS Appraiser, shown in RED), and there were NO sales in close proximity to the DuPont SARR.

There was no rationale, reasoning or justification set forth by the NS Appraiser for producing 17 discrete industrial land value conclusions for this corridor based on the comparable sales selected by the NS Appraiser.



A second example of the NS Appraiser developing multiple discrete land values with no support from their comparable sales is shown above. This photo shows industrial values applied by the NS Appraiser (shown in WHITE) in the area south of the Atlanta CBD, from Spring Street on the north, to East Point to the south.

In this area, the NS Appraiser applied 21 discrete industrial land values to the DuPont SARR, ranging from $3.00 per square foot up to $45.00 per square foot. The comparable sales selected by the NS Appraiser are shown in YELLOW (the one $138.60 per square foot sale shown in RED was excluded by the NS Appraiser as an outlier).

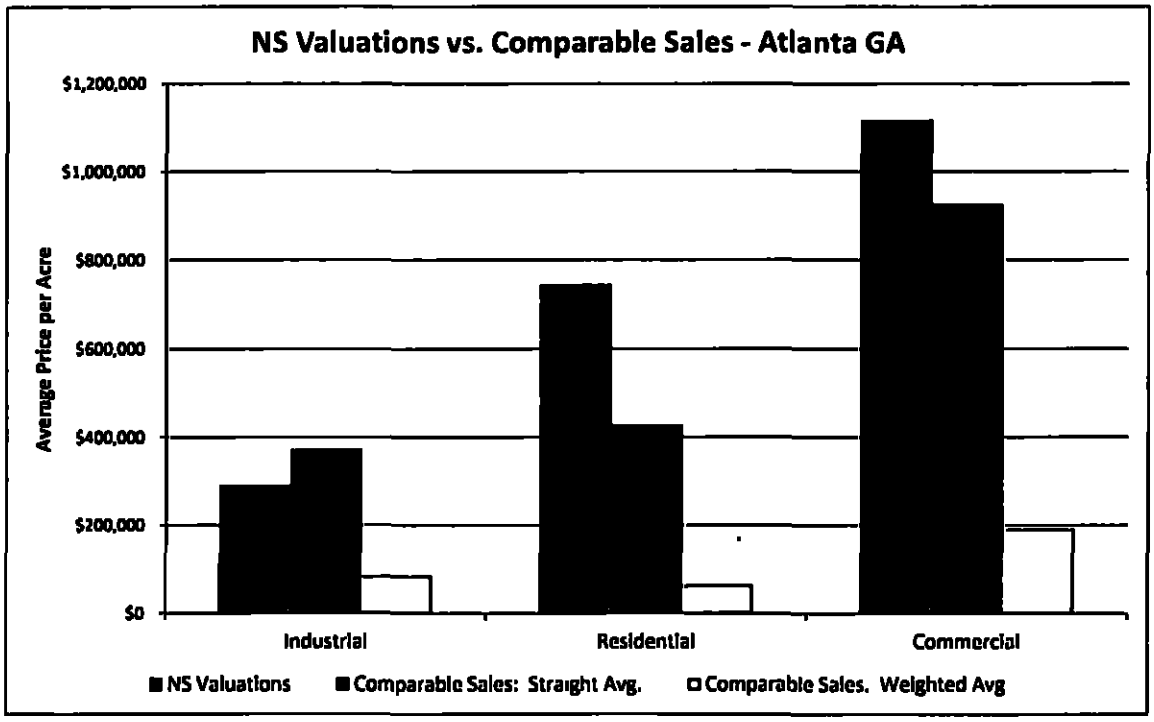
The NS Appraiser applied 21 discrete industrial land values in this area, including such small differences between values such as $3.65 per square foot vs. $3.75 per square foot, with only two comparable sales proximate to the DuPont SARR. Most of the comparable sales shown above are located approximately 2 to 3 miles to the east of the SARR.

There was no rationale, reasoning or justification set forth by the NS Appraiser for producing 21 discrete industrial land value conclusions for this corridor based on the comparable

sales selected by the NS Appraiser. Thus, even in cases such as Atlanta, where there may have been enough comparable sales to support multiple discrete land values, the lack of a geographic connection between the sales and the land values estimated by the NS Appraiser forces the reader to conclude that the valuations do not follow from the data.

This is a theme that runs through all the urban areas described in this report: The lack of a reasonable and discernible connection between the NS Appraiser's land value conclusions and the actual sales used in the NS Appraiser's analysis. The resulting value conclusions are unsupported and unreliable.

The NS land valuations in the Atlanta, GA area show a consistent pattern of higher valuations compared to their comparable sales:



The NS Appraiser created overall valuations for the Atlanta area that exceeded the average price of their comparable sales. The chart above shows that the average valuations per acre that the NS Appraiser developed (RED bars) exceed the average price of their comparable sales. The average price for the NS comparable sales is shown using the straight average employed by

the NS Appraiser in non-inspected areas (BLUE bars) as well as the more supportable weighted average price (GOLD bars).

The degree to which the NS land valuations in the Atlanta area exceed the average price of their comparable sales is unsupported by their analysis, and is unrealistic. No evidence is provided to support the apparent conclusion that the land values in the portions of Atlanta traversed by the DuPont SARR are higher in average land value than the comparable sales chosen by the NS Appraiser.

Had the NS Appraiser developed overall land valuations for Atlanta that were in line with the average sales prices of their comparable sales, the overall land valuations for Atlanta would be more realistic, and would be lower than the NS land valuations presented in their report:

Norfolk Southern Valuations vs. Comparable Sales
Atlanta, GA

Property Type	Acres Valued	Average NS Valuation per Acre	Comp Sales: Straight Avg per Acre	Change in Valuation If NS Had Used the Straight Avg of Sales	Comp Sales: Weighted Avg per Acre	Change in Valuation If NS Had Used the Weighted Avg of Sales
Industrial	149.7	$291,272	$373,053	$12,243,885	$86,357	($30,678,580)
Residential	52.7	$746,074	$426,449	($16,847,842)	$64,748	($35,913,565)
Commercial	51.0	$1,117,916	$927,223	($9,733,617)	$194,015	($47,158,873)
TOTAL	253.5			($14,337,573)		($113,751,018)
Change in Total NS Valuation				-10.2%		-81.3%

Total NS Land Valuation for Atlanta, GA: $139,995,998

If the NS Appraiser had developed overall land valuations consistent with their preferred "straight average" (that gives equal weight to each sale, regardless of land area), the land valuation for the Atlanta area would decline by $14.3 million dollars, a 10.2% decline in land valuation. Had the NS Appraiser developed overall land valuations for the Atlanta area consistent with the more supportable and realistic "weighted average" (that takes into the account the size of each sale parcel), the land valuation for the Atlanta area would decline by $113.8 million, a reduction of 81.3%.

In summary, the land valuations developed by the NS Appraiser in the Atlanta, GA area are unsupported by their

comparable sales. The NS Appraiser failed to consider the quantity and quality of the sales data included in their analysis. Whatever mathematical techniques were utilized in their valuation, the NS Appraiser clearly exceeded the ability of the sales data to support their conclusions. Their analysis produced an inflated land valuation that is not only unsupported, but is clearly unrealistic given the sales data used in their report. With no clear connection between actual land sales and the NS value conclusions, it must be concluded that the NS land valuations in the Atlanta, GA are unsupported and unreliable.

Columbus, OH

The NS Appraiser physically inspected 43.58 miles in the urban area of Columbus, OH. Their total valuation for this urban area was $87,847,880 for an average land value of $213,747 per acre. Based on the data and analysis set forth in the documentation provided, this value was not supported by the sales data used by the NS Appraiser.

As in all the urban areas physically inspected by NS, the NS Appraiser developed multiple price points for each property type They developed 26 (6 industrial, 10 residential, 10 commercial) discrete land values for Columbus:

Number of Sales vs. Discrete Values
Columbus OH

Property Type	Number of Sales	Different Values/Acre
Industrial	39	6
Residential	127	10
Commercial	199	10

Overall, the number of discrete values compared to the number of sales available does not seem unreasonable. However, application of so many discrete values to the DuPont SARR implies that sufficient sales proximate to the SARR were available to develop such fine gradations in valuation. However, the conclusions and land values applied by the NS Appraiser for their Columbus land valuations were not supported by their comparable sales.

The above aerial photo shows a portion of the DuPont SARR (ORANGE line) in the Columbus area, where the SARR crosses the Scioto River twice. The prices shown in YELLOW are the commercial comparable sales utilized by the NS Appraiser, geocoded to show their location. All prices are shown per square foot of land. The prices shown in WHITE are the values the NS Appraiser applied to those portions of the DuPont SARR. The NS Appraiser applied values of $30.00 per square foot to $70.00 per square foot to office land in this area. However, there were only five commercial land sales in the overall area (shown in YELLOW), and the highest price commercial land sale was only $17.53 per square foot. The highest price land sale is located about 1.5 miles from the SARR. There were NO sales in close proximity to the DuPont SARR.

Two of the higher priced commercial sales in this area were excluded by the NS Appraiser as outliers (shown in RED). However, these two excluded sales, at $25.97 per square foot and $70.17 per square foot, were located almost one mile away from the SARR.

There were no comparable commercial land sales in the proximity of the DuPont SARR that would support the values applied by the NS Appraiser. There was no explanation by the NS Appraiser as to how they developed commercial land values of $30.00 per square foot and $70.00 per square foot, when the highest comparable commercial land sale in the broad area was only $17.53 per square foot. Thus, even in cases such as Columbus, where there may have been enough comparable sales to support multiple discrete land values, the lack of a geographic connection between the sales and the land values estimated by the NS Appraiser forces the reader to conclude that the valuations do not follow from the data.

This is a theme that runs through all the urban areas described in this report: The lack of a reasonable and discernible connection between the NS Appraiser's land value conclusions and the actual sales used in the NS Appraiser's analysis. The resulting value conclusions are unsupported and unreliable.

The NS land valuations in the Columbus, OH area show a consistent pattern of higher valuations compared to their comparable sales:

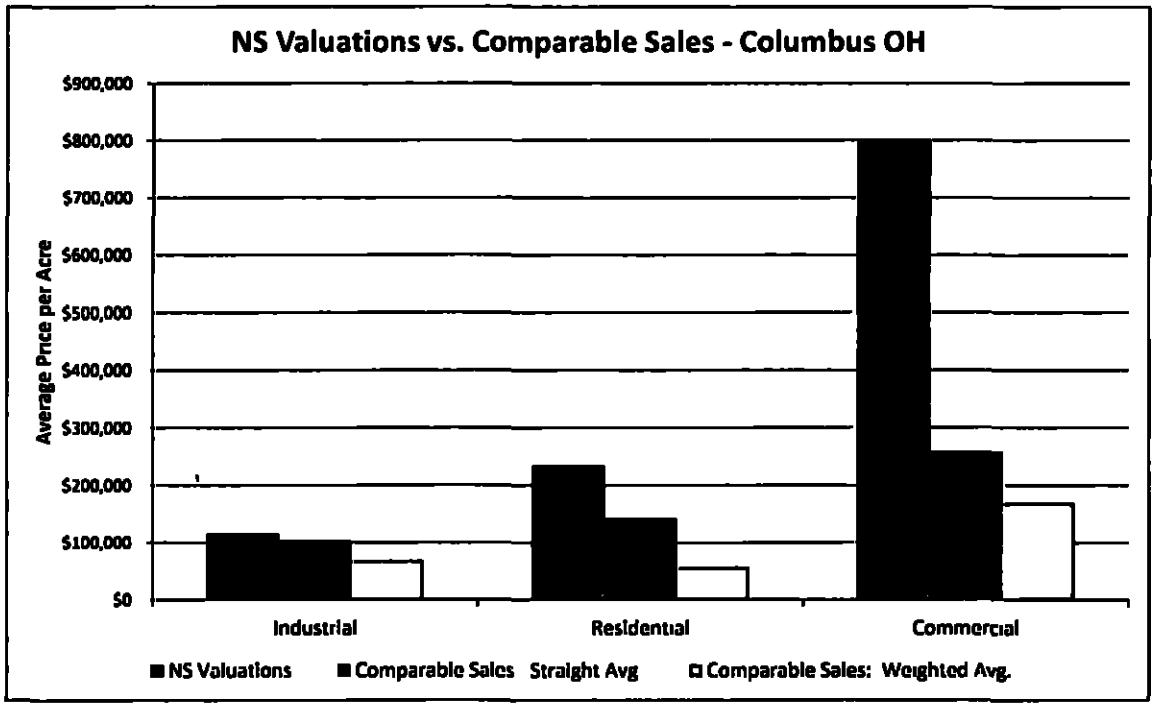
VALUATIONS THAT EXCEEDED THE HIGHEST COMPARABLE SALE
Columbus OH

Property Type	Highest Price per Acre of "Included" NS Sales	Acres Valued by NS Above Highest Sale	% of NS Valuation of Property Type
Industrial	$368,233	4 5	9.7%
Residential	$782,523	1.6	9 6%
Commercial	$870,660	10 5	73.1%
TOTAL		**16.7**	**35.1%**

For example, as shown on the above table, the highest price for a commercial land sale that was included in their analysis (according to the NS Appraiser's evidence submitted) was $870,660 per acre. However, the land valuations for commercial land in the Columbus area developed by the NS

Appraiser exceeded this highest comparable sales price for 73.1% of the commercial land valued by the NS Appraiser.

For the three land types shown on the above table, the NS Appraiser developed land valuations for 35.1% of the land valued in Columbus that exceeded the highest comparable sales price.



The NS Appraiser created overall valuations for the Columbus area that exceeded the average price of their comparable sales. The chart above shows that the average valuations per acre that the NS Appraiser developed (RED bars) exceed the average price of their comparable sales. The average price for the NS comparable sales is shown using the straight average employed by the NS Appraiser in non-inspected areas (BLUE bars) as well as the more supportable weighted average price (GOLD bars).

The degree to which the NS land valuations in the Columbus area exceed the average price of their comparable sales (and in some cases exceeded the highest price) is unsupported by their analysis, and is unrealistic. No evidence is provided to support the apparent conclusion that the land values in the portions of Columbus traversed by the DuPont SARR are higher in

average land value than the comparable sales chosen by the NS Appraiser.

Had the NS Appraiser developed overall land valuations for Columbus that were in line with the average sales prices of their comparable sales, the overall land valuations for Columbus would be more realistic, and would be lower than the NS land valuations presented in their report:

Norfolk Southern Valuations vs. Comparable Sales
Columbus OH

Property Type	Acres Valued	Average NS Valuation per Acre	Comp Sales' Straight Avg per Acre	Change in Valuation If NS Had Used the Straight Avg of Sales	Comp Sales: Weighted Avg per Acre	Change in Valuation If NS Had Used the Weighted Avg of Sales
Industrial	219 0	$115,566	$103,692	($2,600,628)	$88,224	($10,368,921)
Residential	108 3	$234,209	$142,648	($9,913,146)	$56,888	($19,198,163)
Commercial	44 6	$797,780	$259,453	($23,991,569)	$169,793	($27,987,454)
TOTAL	371.9			($36,505,342)		($57,554,538)
Change in Total NS Valuation				-41.6%		-65.5%

Above table does not include 39 1 acres of Agricultural land in Columbus

Total NS Land Valuation for Columbus, OH(including AG land) $87,847,880

If the NS Appraiser had developed overall land valuations consistent with their preferred "straight average" (that gives equal weight to each sale, regardless of land area), the land valuation for the Columbus area would decline by $36.5 million dollars, a 41.6% decline in land valuation. Had the NS Appraiser developed overall land valuations for the Columbus area consistent with the more supportable and realistic "weighted average" (that takes into the account the size of each sale parcel), the land valuation for the Columbus area would decline by $57.6 million, a reduction of 65.5%.

In summary, the land valuations developed by the NS Appraiser in the Columbus, OH area are unsupported by their comparable sales. The NS Appraiser failed to consider the quantity and quality of the sales data included in their analysis. Whatever mathematical techniques were utilized in their valuation, the NS Appraiser clearly exceeded the ability of the sales data to support their conclusions. Their analysis produced an inflated land valuation that is not only unsupported, but is clearly unrealistic given the sales data used in their report. With no clear connection between actual

land sales and the NS value conclusions, it must be concluded that the NS land valuations in the Columbus, OH are unsupported and unreliable.

Summary: Areas Physically Inspected

For the six urban areas detailed above, the summary results can be seen on the table below:

NS Valuations in Urban Areas (areas inspected by NS appraisers)
Sample of 6 Urban Areas

Urban Area	% of Total Valuation that Exceeded the Highest Sale	Change in Total Valuation if the Overall Area Valuation =	
		Arithmetic Avg. of Sales	Weighted Avg. of Sales
Atlanta, GA	--	($14,337,573)	($113,751,018)
Cleveland, OH	56 2%	($65,702,719)	($89,633,136)
Columbus, OH	35 1%	($36,505,342)	($57,554,538)
New Orleans, LA	6 2%	$83,561,038	$30,995,157
Philadelphia, PA	46 1%	($28,939,203)	($36,891,678)
Pittsburgh, PA	90 8%	($264,298,315)	($274,897,356)
TOTAL FOR 6 URBAN AREAS		($326,222,114)	($541,732,570)
		-42.8%	-71.1%

Five out of the six urban areas included land valuations by the NS Appraiser that were higher than the highest priced sale included in their average. And for four of the six urban areas, the percent of land valued over the price of the highest sale was significant.

Considering the land valuations made by the NS appraiser over the entire urban area, five of the six urban areas were valued higher than the average price computed by the NS appraiser, using the arithmetic mean. No support was provided to justify why the land values in these areas should, overall, exceed the NS Appraiser's own average. The amount of overstatement over the arithmetic mean was $326.2 million for these six urban areas.

Compared to the more supportable weighted average, the overall valuation by the NS Appraiser for these six urban areas was $541.7 million over the average sales prices.

With no direct connection between the comparable sales and the land values developed by the NS Appraiser, the land valuations in the urban areas are unsupported and cannot be relied upon.

The NS Appraiser failed to provide, either in his appraisal report or in the backup documentation provided to the Surface Transportation Board, any rationale for or description of the procedures used to develop the multitude of unit prices in the areas physically inspected. However, in the final analysis, the exact mathematical formulas developed or the procedures used to create these land valuations is not the important issue.

The important issue here is that there is no connection between the sales selected by the NS Appraiser and the values developed by the NS Appraiser. With no firm grounding between the sales and the values developed, no amount of mathematical or other manipulation of the data will produce credible results.

Land values in an urban area are extremely sensitive to small changes in geographic area. In an urban area, sometimes moving just one city block away finds you in a totally different market environment, with totally different underlying land values. If you could gather a set of comparable land sales that were capable of showing these fine gradations in unit price over small geographic areas, then it might be possible to reflect this in your land valuations. However, what the NS Appraiser did was to create many discrete land values, applied over small geographic areas, when the sales data was clearly incapable of supporting the value conclusions.

With no connection between the sales data and the values produced, the reasonableness of the values developed by the NS Appraiser is impossible to ascertain. No amount of mathematical manipulation and analysis will make up for a lack of geographically-specific data in an urban area.

REBUTTAL OF NS APPRAISER'S REVIEW OF OUR APPRAISAL

The NS Appraiser submitted an appraisal review of our valuation of the land underlying the DuPont SARR. The NS Appraiser's review was dated November 26, 2012 and was submitted by FTI Consulting.

This section of the report includes a detailed response to the issues raised in the NS Appraiser's review of our appraisal.

Classification of Land Uses

On page 8 of the NS Appraiser's review document, the NS Appraiser cites a few examples of what he believes are incorrect land use classification in our appraisal. The primary example involves a portion of the DuPont SARR in the Cleveland, OH area. Our response follows:

On page 8 of the NS Appraiser's 11/26/2012 Appraisal Review document, the NS Appraiser cites a 4.7-mile portion of the DuPont SARR that is located in an older industrial area of Cleveland, OH. We valued that 4.7-mile section of the SARR as one segment, with an industrial land use. The NS Appraiser criticized that characterization of the land use as industrial, and proceeded to create 16 line segments for this same 4.7-mile portion of the SARR, designating the land uses as not only industrial, but also some retail and residential. The table below summarizes the valuations developed by the NS Appraiser for this 4.7-mile portion of the SARR:

NS Valuations in Cleveland OH (NS Aerial-06)

Land Use	Acres Valued	Low Value	High Value
Industrial	38 85	$2 25	$10 00
Commercial	5 53	$2 50	$10 00
Multi-family	0 44	$2.50	$2.50
TOTAL	44 83		

The NS Appraiser designated about 87% of the land uses as industrial, matching our land designation for the same area. For the remaining 13% of the adjacent land uses for the SARR,

mainly commercial (retail and office) uses were designated by the NS appraiser.

However, note that the range of valuations (shown in dollars per square foot of land) for each property type are basically the same. Although we disagree with the dollar amounts that the NS Appraiser developed for this area, we are in agreement that the area has a land value driven by the area's overall industrial character.

The above aerial photo illustrates the section of the DuPont SARR that the NS Appraiser designates as Section 77 (PURPLE line), which he identified as having office use on the south side and industrial use on the north side. The blue icons are property-type icons, based on property assessment data provided by Google Earth Pro. The blue icons that look like a factory with a smoke stack are industrial-zoned properties.

This is an older industrial neighborhood, which is currently seeing some reuse of old industrial facilities into office and retail uses. However, when a neighborhood is in transition like this, the property values do not automatically switch to higher values, just because some of the older industrial properties are repurposed for new uses. Eventually, if the neighborhood continues the transition into an office or

retail area, then underlying land values will, over time, begin to reflect the new predominant use.

However, when determining the proper land use designation for the DuPont SARR, it is important to identify the predominant land use of the neighborhood, and to value the underlying land accordingly. We designated this entire corridor as having an underlying value as industrial land, and based on the current evolution of this Cleveland neighborhood, this is a correct land use designation. The NS Appraiser, in developing 16 different segments for this section of the DuPont SARR, ended up with the same valuation conclusion as we did - the underlying land values for this portion of the SARR are basically uniform over the 4.7-mile corridor.

The NS Appraiser, in his review of our analysis, claims that the Cleveland, OH situation noted above is an example of misclassification of land use, presumably leading to incorrect land valuation for that portion of the DuPont SARR. This claim is unsubstantiated by the resulting land valuations in the two reports (i.e. both appraisers concluded a uniform land value per acre for this portion of the SARR).

As illustrated previously in this report, the additional segmenting of the SARR into even smaller units than we used in our appraisal is often done by the NS Appraisers seemingly for the purpose of being able to apply multiple price points to similar land uses in the same area. However, the comparable sales data used by the NS Appraisers in their analysis was often not capable of supporting this greater level of segmentation.

As detailed in our appraisal, we segmented the entire DuPont SARR into 6,950 line segments, averaging 1.05 miles per segment. In urban areas, our average line segment length was much shorter, averaging about 0.6-miles to 0.8-miles in length. This level of definition provides ample consideration of changing property types along the path of the SARR, while not overrunning the ability of the sales data to support the individual segment values.

The criticism by the NS Appraiser that we did not subdivide the DuPont SARR into a sufficient number of segments is not supported by the evidence. In fact, as was discussed earlier, the more finite level of line segmentation by the NS Appraiser

is somewhat misleading, because it infers that the sales data was available to enable the NS Appraiser to develop very precise land values for small geographic segments. The sales data selected by the NS Appraiser was not capable of supporting such a finite analysis.

We followed a careful procedure of considering both the specific land uses adjacent to the DuPont SARR, as well as the surrounding neighborhood, to create the proper land use designations for each line segment.

Inspection of Subject Property

On page 17 of the NS Appraiser's review, questions were raised about the adequacy of our inspection of the DuPont SARR. The NS Appraiser felt that we had not physically inspected a sufficient percentage of the DuPont SARR, and had an over-reliance on computer-based aerial photography for our land use designations.

DUPONT SAR INSPECTION TRIPS

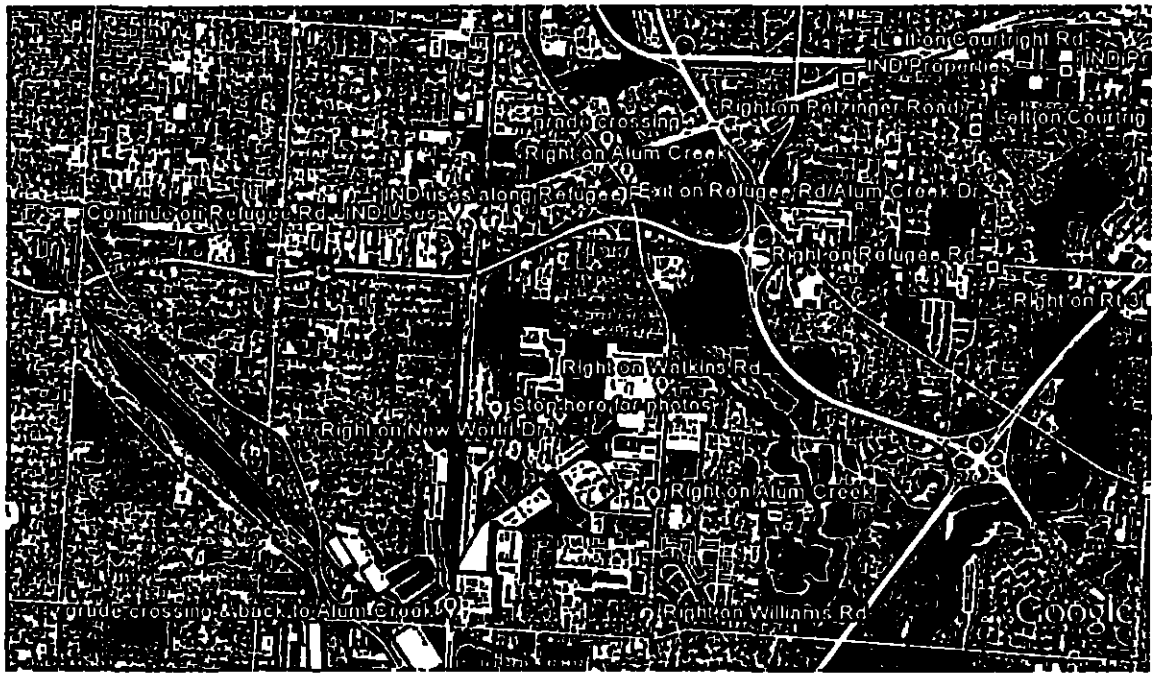
Urban Area	Approx. Miles Surveyed	Inspection Date	Photos Taken
Columbus, OH	35	9/10/2011	80
Cincinnati, OH	18	9/11/2011	69
Toledo, OH	16	9/11/2011	59
Detroit, MI	26	9/12/2011	63
Cleveland, OH	26	9/12/2011	42
Pittsburgh, PA	39	9/19-20/2011	178
Chicago, IL	20	9/25/2011	82
St Louis/E St Louis	21	9/26/2011	78
Harrisburg, PA	21	10/10/2011	66
Reading PA	8	10/10/2011	30
Allentown/Bethlehem, PA	13	10/11/2011	47
Northern New Jersey	22	10/11/2011	82
Greenville, SC	10	10/19/2011	36
Charlotte NC	16	10/19/2011	58
Greensboro NC	9	10/20/2011	41
Knoxville, TN	10	10/21/2011	44
Chattanooga, TN	12	10/21/2011	35
Atlanta, GA	63	10/21-23/2011	238
TOTAL	373		1,308

The table on the previous page summarizes the extent of our physical inspections of the DuPont SARR. The NS Appraiser, for

their valuation of the DuPont SARR, inspected 712 miles in approximately the same number of urban areas. For the most part, both appraisers physically inspected the same urban areas. We inspected (but the NS Appraiser did not inspect) St Louis, IL/MO plus Toledo, OH and Detroit, MI. Conversely, the NS Appraiser inspected (but we did not) Birmingham, AL, Mobile, AL and New Orleans, LA.

It is hard to make a case that our physical inspections were deficient, compared to the NS Appraiser's physical inspections. The total mileage physically-inspected by the NS Appraiser was higher than ours, due to the fact that in many areas, the NS Appraiser continued the physical inspections out into the suburban areas and even rural areas surrounding the cities. Whether or not this improved the accuracy of their land use classification is unclear, since it is relatively easier to discern land uses in these less densely developed areas.

For the areas we did physically inspect, our inspection process was organized and designed for maximum efficiency in the field. For each hour spent on the ground in an urban area, we spent twice as much time in the office preparing the inspection routes and noting properties/neighborhoods that needed special attention in our inspections.



The photo above is an example of the pre-planning involved in our inspection trips. The DuPont SARR is shown as an ORANGE line, and the map shows traffic directions for the inspection team, as well as particular land uses to take note of.

While in the field, we had live satellite links to power up the Google Earth database and we could immediately verify the information we had already gathered from the tasks we completed from our desks.

We took over 1,300 geo-coded photographs on our physical inspection trips (which were provided in evidence and were available to the NS Appraiser). These photos can be viewed in Google Earth at the exact location the photos were taken. The NS Appraiser, on the other hand, only provided a handful of unidentified photos in his documentation.

The NS Appraiser in his review also commented negatively on the use of computer-based aerial photography and other online tools to determine land use designations. This is a curious criticism. It is the responsibility of the appraiser to use all available tools and techniques to properly define the subject property. To ignore the use of these tools would be a failure to recognize the ability of these tools and their potential to improve the accuracy of the appraisal.

We used several resources to define and verify the uses along the railroad including assessment records, two different aerial-imaging programs and field inspections. The Google Earth aerial-imaging program includes a link to assessment files so we were able to overlay the assessment data that had coded icons for the different zoning classifications to match properties along the SARR with their use. It was a very powerful resource that proved to be over 98% accurate in the densely-developed urban areas, where property uses can vary considerably.

The NS Appraisers characterized the use of these advances in technology as an "overreliance on aerial photography", and likened them to a "desktop appraisal". Using these powerful online tools, we were able to "fly over" the entire railroad and when we could not tell what we were seeing, we were able to utilize street-level photography to drive along the neighborhoods at street level. Google Earth places vital real estate information in the appraiser's hands. And, considering

that the railroad right-of-way is often hard to access without trespassing on private property, the use of computer imaging actually provides better access than driving around in a car.

In summary, we believe that the NS Appraiser's negative comments concerning our inspection of the DuPont SARR are unfounded.

Selection of Comparable Sales and Verification Process and Taking Proper Steps to Analyze Comparable Sales

We took great care to go through the sales data used in our appraisal report to be in keeping with the scope and purpose of this appraisal assignment. The procedure we used adheres to one of the most important elements of appraising that addresses the quality and quantity of the data used in the appraisal.

Our work papers show our methodology using the sales data and additional steps we took to avoid problems in an appraisal assignment involving thousands of sales, where every sale cannot be researched or confirmed individually.

The CoStar data was significantly more detailed than CoreLogic data. CoStar researches the sales and provides the users of their data not only the details in the public records but the assessment data, plus all of the confirmation and descriptions from their research. CoStar typically confirms the information in the land records and verifies whether or not a sale is an arms-length transaction. When CoStar classifies sales as "Land" or "Improved" it is the more reliable source because of the practices they employ such as researching individual sales, taking steps to talk directly to someone involved in the transaction, pulling the deeds from the land records, and linking the file to local government assessment records.

Two issues were brought up by the NS Appraiser concerning undervaluing agricultural land in Hunterdon County, NJ because we based our value on sales classified as "unknown" and how we addressed sales that were misclassified at the original source of the raw data by CoreLogic. The next section will describe why these claims by the NS Appraiser are unfounded.

Example of Our Appraisal Process

On page 9 of the NS Appraiser's appraisal review report, the NS Appraiser states our value of vacant land in the "agricultural" category, at $18,000 per acre, was too low and that we did not apply the average of the three land sales that were classified in the raw data as "agricultural" land. Their critique was that we should have simply taken the average value of the three "agricultural" land sales at an average value of about $65,000 per acre.

When we did our analysis of this data, we found that there was evidence that these three land sales were classified incorrectly as "agricultural" land. At the very least, upon further digging, these sales were more in line with low-density residential land prices, not vacant raw land that is in keeping with our classification as "agricultural" land.

When we defined a section of the right of way as "agricultural" land it was the category for the undeveloped land that had limited density of development such as farm land, pasture land, timber land, recreational land, open space or land in an area transitioning from raw rural agricultural use where development was expected to take place sometime in the future.

Here is the summary chart included in our worksheets (provided in our evidence) that show, after analyzing all the land sales for New Jersey, the values in each county for each land classification. Using these summary charts, you can review all the data and see patterns and relationships not only between the counties along the SARR but also relationships and patterns among residential, industrial, commercial and agricultural categories. The auxiliary and "benchmark" data provided another element of support for conclusions.

NEW JERSEY		RESIDENTIAL			INDUSTRIAL			COMMERCIAL			AGRICULTURAL		
Benchmark - Median Housing Value - US Census Data		Corelogic	COSTAR	APPLIED	Corelogic	COSTAR	APPLIED	Corelogic	COSTAR	APPLIED	Corelogic	COSTAR	APPLIED
Warren County	$310,500	$50,000	$11,000	$50,000	x	$100,000	$300,000	$425,000	$100,000	$425,000	$15,500	x	$15,000
Somerset County	$432,800	$115,000	$110,000	$120,000	$350,000	$300,000	$350,000	$420,000	$300,000	$350,000	$27,000	x	$27,000
Hunterdon County	$452,100	$50,000	SOMERSET	$130,000	$135,000	n/a	n/a	$410,000	$443,000	$425,000	$18,000	x	$18,000
Auxiliary Sales Data											USDA Avg	$14,500	
Morris County	$477,200		$135,000			$325,000			$450,000				
Mercer County	$311,700		$150,000			$385,000			$150,000				
Cumberland County	$188,400											$14,500	
Middlesex County	$394,800				$260,000								

Note the agricultural land column. There is a clear pattern and narrow range of values in the counties within this portion of the DuPont SARR that provides some additional support in the "Auxiliary Data" in Cumberland County and the USDA report for a conclusion of $18,000 per acre, not $65,000 per acre.

The three "agricultural" sales the NS appraisers wanted us to rely on had street addresses that enabled us to dig deeper and pinpoint these three sales on the map. A review of the locations and the development surrounding these sales helped us evaluate their comparability to the subject property. Further research showed that they were more comparable to low density residential land and the prices were actually comparable to other sales of large home sites, not our definition of agricultural land.

Other sales data in the same worksheets provided further evidence that those three "agricultural" sales should be explored more in detail. There were 20 residential land sales in Hunterdon County as follows:

County Name	L/U Code	Price/AC	Lot Acreage	Sale Price
HUNTERDON, NJ	R	$29,412	0.17	$5,000
HUNTERDON, NJ	R	$772,059	0.68	$525,000
HUNTERDON, NJ	R	$12,658	0.79	$10,000
HUNTERDON, NJ	R	$156,599	1.49	$233,333
HUNTERDON, NJ	R	$107,143	1.96	$210,000
HUNTERDON, NJ	R	$5,000	2.60	$13,000
HUNTERDON, NJ	R	$141,844	2.82	$400,000
HUNTERDON, NJ	R	$74,667	3.00	$224,000
HUNTERDON, NJ	R	$76,754	3.04	$233,333
HUNTERDON, NJ	R	$33,784	3.70	$125,000
HUNTERDON, NJ	R	$5,500	4.00	$22,000
HUNTERDON, NJ	R	$47,059	4.25	$200,000
HUNTERDON, NJ	R	$72,674	5.16	$375,000
HUNTERDON, NJ	R	$42,969	6.40	$275,000
HUNTERDON, NJ	R	$21,771	6.89	$150,000
HUNTERDON, NJ	R	$4,937	14.20	$70,100
HUNTERDON, NJ	R	$6,562	19.05	$125,000
HUNTERDON, NJ	R	$29,769	8.23	$245,000
HUNTERDON, NJ	R	$45,226	3.98	$180,000
HUNTERDON, NJ	R	$40,000	1.00	$40,000
	WTG AVG	$39,190	93.41	$3,660,766
	ADJ. WTG AVG	$64,053		

The 20 "R"-residential land sales shown above had an average price of $39,190 per acre. The four largest acreage land sales, out of these 20 sales, were priced between $4,937 and $6,562 per acre and impacted the average price of the smaller sized sales. When we eliminated these four sales from the rest of the sales the average price was $64,053 per acre.

These sales gave us additional support that the value of agricultural land was not $65,000 per acre, just because they were labeled "agricultural". The actual use of these sales was most closely linked to the residential market, not the agricultural market.

The second part of their review on values in Hunterdon County, NJ focused on the sales coded as "unknown". Some sales classified as "unknown" by CoreLogic are clearly good sales and usable because of the information in other data fields in the sales record. In some of the "unknown" sales there was just not enough information to rely upon so they were not considered in the analysis.

The land sales labeled as "unknown" in this data set for Hunterdon County were also identified as "vacant land" but still not enough information to rely on them exclusively. We took

several other steps to support value. The NS Review Appraiser claimed that was the only basis for our valuation of the agricultural land in Hunterdon County, NJ that is clearly not the case.

We looked at agricultural land sales and value in the nearby and similar counties. Somerset County had agricultural sales that averaged about $27,000 per acre. Warren County sales had an average value of $15,500 per acre. Cumberland County CoStar data had an average of $14,500 per acre. (Cumberland County, in southern New Jersey, and has the same farmland overlay classification as Hunterdon County (overlay map included in our evidence). We also used the USDA data as a benchmark. We did not take sales classified as "unknown" and simply use them as the basis of our analysis.

This discussion is illustrative of the appraisal process performed as part of developing our land valuations for the DuPont SARR. Unlike the mechanical techniques utilized by the NS Appraisers to develop their land valuations, the comparative analysis techniques as described above are based on sound appraisal principals, and will produce reliable land valuations.

Compare our values shown above in Hunterdon County, NJ summary chart with the NS Appraisers values below:

Land Use	NS Appraiser's Value per Acre
Agricultural	$63,842
Industrial	$268,527
Residential	$ 51,247
Commercial	$ 34,189

The NS appraisers used only 18 out of the 202 agricultural sales in Hunterdon County from Loopnet data source. NS Appraisers eliminated 184 of the 202 agricultural sales with no information on why and how this was a supported approach. Their sales were sorted based on unit price only. No other analysis based on location, date of sale, or size was shown in their worksheets or report.

Some of the questions that come up after looking at their conclusions in Hunterdon County include the following:

- Did the NS Appraisers look at why commercial and residential land values were lower than agricultural land?
- What made industrial land so much higher in value than anything else?
- Why is commercial land inferior to the residential land in this part of New Jersey?

Improved Sales were Not Used in Our Analysis

The NS Appraiser also claimed that we had used many sales with significant improvements, thereby distorting the land values in our appraisal.

Part of the CoStar data for each land sale is assessment data, showing assessments for both land and improvements. Some of these CoStar sales, designated by CoStar as land sales, also show significant assessed values for improvements. For many of these sales, it is clear from the comments fields (also included in our worksheets) that the sale price in question reflects the value of the underlying land. In other cases, the existence of the assessments for improvements can reflect a later assessment, after the date of the land sale. According to discussions with CoStar, their files are periodically refreshed with the more current assessment records, causing some CoStar land sale records to show a value for improvements installed after the date of the sale of the land. CoStar confirmed to us that the updating of assessment records in their database is an automated process that links to assessment records and is not manually controlled by CoStar. It's still the same land sale and still classified as such by CoStar.

One additional step we took was to include in our sales record all the detailed data fields that included the researcher's confirmation notes. These data fields are available and part of each CoStar sale. This is extremely useful information to an appraiser and goes to the heart of the appraisal process that addresses the quality and quantity of the data. We included all of this auxiliary information in our work papers and valuation spreadsheets so it can be referenced easily in the valuation process. The fields "Description Text" and "Transaction Notes" provide information shown below. It goes to refute the NS Appraiser's critique that we routinely used

improved sales when in fact they were land sales and the documentation in our files supplied as evidence in this proceeding support this. Here are two examples from the comments fields in CoStar for sales that had an improvement value in sales record but were really land sales.

"Property Description R-3 Zoned Acreage Land Intended Use· N/Av Land Structures: 2 (Razed) Property Use Description. Hold for Development"

"Site is currently used for outside storage of raw matenal The site is a good candidate for 'Re-Development' per New Castle County Regulations as several buildings were previously located on the site. This property has great exposure to busy Rt 301 "

The auxiliary data, text descriptions, transaction notes, and various other information about the sales including the assessment fields, was not included in the NS Appraiser's work papers and valuation files. We do not know why these fields were excluded from their files,. and the NS Appraisers may have not taken advantage of this valuable information in their sales analysis.

Delaware is an excellent example to show how we did not routinely or intentionally use improved sales as the basis of our valuation. The NS Appraiser asserted that we used 20 improved sales in Delaware in our valuation. Although there were improvements noted in the assessment fields in the 20 sales the NS Appraiser said we included in our analysis, many of these properties were purchased based on the value of the land as described earlier. We did not use all 20 sales in the Delaware analysis as claimed by the NS Appraiser.

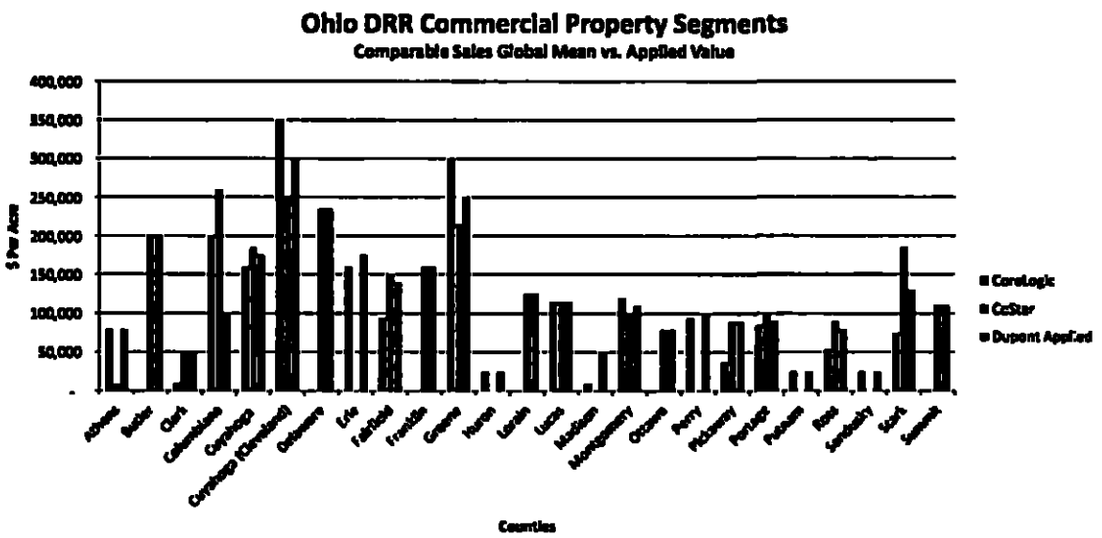
To further counteract the false claim of the NS Appraiser that we routinely used improved sales in our appraisal, we compared the NS Appraiser's CoStar sales data files for Delaware with our Delaware CoStar sales. We found some of the very same sales in the NS Appraiser's files and land valuation sheets that the NS Appraiser claimed as improved sales in the data we used.

CoreLogic data is classified by the information coded in public records with little or no hands-on verification and research compared to CoStar. That is why we did not comingle

the CoStar sales data with our CoreLogic sales records. By generating averages for both sets of sales independently, we were able to analyze and test the relative accuracy of data obtained from multiple sources.

Illustration of a Sound Appraisal Process

The exhibit inserted below was part of the NS Appraisers review on page 15 of his review document. The NS Appraiser created this exhibit to illustrate the lack of a relationship between our sales data and our valuation conclusions. In fact, this exhibit is a good illustration of the result of performing something better than creating a land valuation by simply mechanically adding up a group of sales to produce an average, without considering the quantity and quality of the sales data provided.



The green bar represents the value we applied in our analysis using CoreLogic (blue) and COSTAR (red) data separately. It shows a very consistent and even-handed analysis and how generally greater weight was given to the CoStar data because it was verified and bad data could be more easily excluded. Keep in mind that CoStar reports sales in the urban areas and CoreLogic was the often the better source of data for agricultural and vacant land in the rural areas.

By way of comparison, the NS Appraiser mixed data from all sources, and lost the ability to analyze and test the relative

accuracy of data obtained from multiple sources. This is a significant flaw in the NS Appraiser's analysis approach.

We are aware that the sales data must be the primary and the driving force behind the valuation of real estate. There is nothing that restricts an appraiser from considering other information in additional to actual sales data in arriving at a value conclusion. Simply doing mathematical manipulations of limited sales data, the NS Appraiser's approach is misleading and is not an appraisal.

Assessment Data was Not Used for Land Extraction

The claim by the NS Appraiser that we apparently used tax assessment ratios to approximate the contributing value of improvements is false. The NS Appraiser included a section in their review about the "extraction method" and that *"There was no indication in the DuPont appraisers work papers of the proper use of the market extraction technique, and the appraisers simply incorporated the value of the improvements into the calculations of the global mean of comparable sales for vacant land."*[7]

There is an additional false assertion that " *the DuPont appraisers apparently used tax assessment ratios to approximate the contributing value of the improvements."* Followed by the assertion that *".. the data that the DuPont appraisers relied upon did not include enough detailed information pertaining to the nature of the improvements and the accuracy of the assessments to permit a land value extraction…"*[8]

The NS Appraiser states that there is nothing in our work papers showing the proper use of the market extraction technique. Since we did not use improved sales as the basis of our values, there were no land extractions performed.

When improvements were included in some of the CoreLogic sales records, we simply took the assessment data field that showed the value of any improvements and created a column that made it easy to see which sales potentially had improvements. Next we excluded some of the bad data and checked the results against other data. The assessment data was analyzed for the

[7] Appraisal Review dated November 26, 2012 by the NS Appraiser, page 10-11.

[8] Appraisal Review dated November 26, 2012 by the NS Appraiser, page 10.

CoreLogic sales, because, as previously discussed, the CoreLogic data tended to be less accurate than CoStar data, that is verified by CoStar analysts. Providing the CoreLogic assessment data is not a per se indication that we were attempting to extract land values using the assessment ratios. Again, the NS Appraiser mistakes a multi-step appraisal analysis process as an indication that the land valuation process was not organized and consistent. If the NS Appraiser had taken sufficient time to analyze the documentation provided, many of these false claims would have been answered.

Using Benchmark Information is Not a "Strong Reliance"

The NS Appraiser made an unsupported and false claim that we placed a *"Strong reliance on undocumented anecdotal information"*. Particularly in areas where the available sales data was weak, we attempted to talk to market participants, such as local appraisers or local assessors. We documented these conversations and the information they provided as supplemental sales data in our work papers. We included this information again on our summary chart of values for each state so the users of this report could clearly see the steps we took to produce and support our value conclusions. This is standard and good appraisal practice and was a necessary additional step to produce a more credible value especially in an area where there are very few sales. Compare this to the mechanical procedure employed by the NS Appraiser of applying a route-average land value to areas with few or no sales. Unfortunately, applying these route averages to rural areas often resulting in transferring urban land values to rural areas.

In the most rural areas, where CoStar does not report many sales, we used CoreLogic sales, sales from local appraisers and sales from a land broker that tracks and documents actual land sales and provided several years of sales of the value of the underlying land for timberland.

It was not uncommon for us to take additional steps, call local appraisers or assessment offices and real estate brokers and refer to published data and reports that provide additional information on market trends and background information.

Another reliable source to provide a benchmark or a check to compare agricultural land values is the USDA (US Department

of Agriculture) annual reports that survey and track prices paid for agricultural land. This report is broken down by state and by use. The land pricing data provides benchmarks for understanding changes in the value of farmland and support the actual sales data in the local market.

Each individual land value was not considered in isolation - relationships among the property types were considered, as well as value conclusions reached in nearby, similar jurisdictions. We consistently reviewed the valuation estimates to produce a reliable conclusion.

Each appraiser had to overcome the same issues with the markets that had very little data. Our approach was to constantly compare and check values throughout the process in similar markets and locations that have similar characteristics.

The Averaging Technique Used is Appropriate and Recognized

The NS Appraiser in his appraisal review criticizes our use of a weighted average in producing our average land values per acre. There is an extensive discussion of the averaging technique used in our appraisal vs. the averaging technique utilized by the NS Appraiser. This discussion begins on page 24 of this report, and will not be repeated here.

However, in short, our use of the weighted average in our analysis is required due to the impact of parcel size on unit price for land sales.

Generally speaking, in many land transactions, the larger the parcel, the lower the unit price. This relationship between parcel size and unit price can be caused by many factors, but large parcels typically require the provision of internal roads and other facilities that reduce the amount of land area for building improvements. Also, some large parcels of land will require development over time, resulting in discounting of the unit price to account for the time value of money during the development period.

To account for the impact of the size of the parcel on the unit price, a "weighted mean" was utilized in our analysis, which takes into account the size of each parcel. This approach

is in keeping with the requirements and scope of the appraisal that addresses "no barriers to entry".

By comparison, the NS Appraiser employed an arithmetic mean, which is a simple average that gives equal weight to each sale, no matter the size of the parcel. This averaging technique used by the NS Appraiser would only be appropriate for a very homogenous set of sales data.

Although both the weighted average and the arithmetic average are both recognized averaging techniques that are appropriate in different circumstances, the NS Appraiser in his review attempts to characterize the weighted average as being a rejected technique by the Appraisal Institute.

The NS Appraiser in their testimony (on page III-F-25) cites the Appraisal Institute's book, "The Appraisal of Real Estate" as support for their use of the arithmetic mean vs. the weighted mean.

"Like units must be compared, so each sales price should be stated in terms of appropriate units of comparison. The units of comparison selected depend upon the appraisal problem and the nature of the property."

In what can only be characterized as misleading and disingenuous, the NS Appraiser state:

"The Appraisal Institute rejects this kind of mass agglomeration (i.e. the weighted mean - ed), *noting that 'Like units must be compared, so each sales price should be stated in terms of appropriate units of comparison'. Appraisal Institute, The Appraisal of Real Estate at 305 (13th ed. 2008)."*

This is a gross and willful misinterpretation of this section of the book "The Appraisal of Real Estate". We have included this section of the Appraisal Institute's book in the Addenda of this report, and it is clear from reading that text that the Appraisal Institute was <u>not</u> talking about averaging techniques in this passage. Rather, the Appraisal Institute was making the point that the Appraiser must take into account the unit of value that is appropriate for the type of property being appraised. For example, if you are appraising existing apartment buildings, the appropriate unit of measure is probably

the price per apartment unit, and not the price paid per acre of land.

This section of the NS Appraiser's testimony is misleading, because it appears to confer the approval of the Appraisal Institute on the averaging technique used in their appraisal, as well as the specific rejection by the Appraisal Institute of the averaging technique utilized in our appraisal. This is a false and willfully misleading claim by the NS Appraiser, and should be disregarded.

Other Responses

The NS Appraiser in his review also cites issues with the following areas in our appraisal:

- Date of value
- Valuation of partially-owned rights of way
- Easements and other land use agreements

These items will be addressed in another section of the rebuttal evidence, and will not be addressed in this document.

Rebuttal of NS Appraiser's Review: Summary

Collection of sales data for such a vast geographic area consisted, by necessity, of using available electronic sales databases. For this assignment, several thousand sales from CoStar/Comps and 23,000 sales from CoreLogic were obtained. However, even with this large database of land sales, there were property type/geographic area combinations that were thinly represented in the sales data.

Data analysis consisted of analyzing the comparable sales to verify that the sales price did reflect the market value of vacant land. Due to the sheer quantity of sales involved, the verification process was, by necessity, confined to the data provided by CoStar/COMPS or CoreLogic.

Development of the opinions of value for the land needed by the DuPont SARR involved a key appraisal concept, as stated in Standards Rule 1-6 of the Uniform Standards of Professional Appraisal Practice:

> ***In developing a real property appraisal, an appraiser must..reconcile the quality and quantity of data available***[9]
> (emphasis added)

In this appraisal assignment, the consideration of the quantity and quality of the sales data available was often a key determinant in the methodology followed in producing the opinion of land value for the DuPont SARR. And many of the differences between the two land appraisals in this Surface Transportation Board case are the result of differences in how each appraiser handled the quantity and quality of data available.

In our land valuation, consideration was always given to the quantity and quality of sales data available. When sufficient sales data was not available, supportable and logical choices were made to use comparable sales data from similar nearby jurisdictions. In addition, benchmark data from published sources, like the U.S. Department of Agriculture, local appraisers and local assessors, was also used as a quality check of the land valuations developed using comparable sales.

[9] Uniform Standards of Professional Appraisal Practice, 2012-2013 Edition, The Appraisal Foundation, page U-20.

The process followed in developing the land valuation was not a mechanical process that was followed lockstep. Instead, the quantity and quality of the sales data available dictated the process used in developing the land valuation, to ensure the most accurate and reasonable values.

Each individual land value was not considered in isolation - relationships among the property types were considered, as well as value conclusions reached in nearby, similar jurisdictions. We consistently reviewed the valuation estimates to produce a reliable conclusion.

In our appraisal document, we describe these processes and the logic behind them, leading to a reasonable and reliable estimate of land value for the DuPont SARR. By virtue of the appraisal process performed in this analysis, we have produced a land valuation for the hypothetical DuPont SARR that is reasonable, supported and realistic.

Additions to DuPont SARR

Based on instructions from the client, L. E. Peabody and Associates, 16.84 miles in seven locations were added to the DuPont SARR. To produce land values for these additions to the DuPont SARR, no new unit values for land were developed. All seven additions to the DuPont SARR were given land values based on unit values for land that were provided as part of the Opening Evidence.

ADDITIONS TO THE DUPONT SAR

Route Name	Route Miles	Total Acres	Percent of Total Acres		Avg Value per Acre	Total Value for Route
			Most Prominent	Second Most		
Chicago IL (Ashland Ave to Ogden Jct)	2 82	24.7	INDUS 98%	COMM 2%	$513,235	$12,680,909
Fairgrounds Lead (Louisville KY)	1 98	23 8	INDUS 91%	RESID 9%	$145,536	$3,457,578
Monroe Plant Lead (Monroe MI)	1 82	18 4	INDUS 67%	RESID 25%	$94,368	$1,738,830
Kingston Plant Lead (Emory Gap TN)	5 20	63 0	RESID 71%	AGRIC 19%	$32,318	$2,037,000
Belmont Plant Lead (Belmont NC)	3 00	38 4	RESID 91%	INDUS 9%	$53,733	$1,953,939
Scherer Plant Lead (Juliette GA)	1.38	16 7	AGRIC 50%	RESID 50%	$32 500	$543,636
Bear Creek Lead (Baltimore MD)	0 88	7 8	INDUS 100%		$350 000	$2,736 384
TOTAL FOR 7 ADDITIONS TO SAR	16.84	190 8			$131,822	$25,158,055
					(rounded)	$25,200,000

The exhibit above summarizes the land valuation for the seven additions to the DuPont SARR. The increase in land valuation for these seven additions is $25,200,000 (rounded).

Modifications to Yards - Land Valuation

Based on instructions from the client, L. E. Peabody and Associates, modifications and additions were made to yards and other supporting facilities needed for the DuPont SARR. L. E. Peabody provided the appraisers with the location for each modified yard facility, and the land acres required for each facility.

The exhibit on the next two pages summarizes the valuation of the land needed to support yards:

Land Valuation of DuPont SAR Yards

City	State	Length (miles)	Yard Name	Dupont Opening Acres	Dupont Rebuttal Acres	Route Name	Land Value for Yard
Birmingham	AL	1 87	Bermingham - IM Facility		25.89	AL-2 BIRMINGHAM	$3,669,033
Birmingham (Irondale)	AL	3 83	Norris	130 00	130.00	AL-2 BIRMINGHAM	$11,060,863
Decatur	AL	3 01	New Decatur		32.04	AL-6 Chattanooga, TN to Memphis, TN	$3,818,288
Huntsville	AL	1 34	Huntsville		31 15	AL 6 Chattanooga, TN to Memphis, TN	$4,472,575
Mobile	AL	2 34	South	45 00	45.00	AL-4 Burstall, AL to Mobile, AL	$2,694,763
Selma	AL	2 49	North Selma	50 00	50.00	AL-4 Burstall, AL to Mobile, AL	$902,861
Sheffield	AL	2 40	Sheffield	50 00	50.00	AL-6 Chattanooga, TN to Memphis, TN	$110,000
Edgemoor	DE	1 18	Edgemoor	45 00	45.00	DE 2 Regan, DE to Edgemore, DE	$4,511,250
Atlanta	GA	2 67	Inman -IM Facility	130.00	130.00	GA-1 ATLANTA - Austell, GA to Howell, GA	$33,023,408
Augusta	GA	1 45	Nixon	45 00	45.00	GA-9 Macon, GA to Gracewood, GA	$4,500,000
Augusta	GA	0 93	Augusta		3 35	GA-9 Macon, GA to Gracewood, GA	$446,465
Austell	GA	2 92	Whitaker Yard	85 00	85.00	GA-5 Chattanooga, TN to Atlanta, GA	$10,700,000
Chamblee	GA	1 37	Chamblee		18.25	GA 2 ATLANTA Howell, GA to Duluth, GA	$12,445,070
Dalton	GA	1 42	Dalton		5 30	GA 5 Chattanooga, TN to Atlanta, GA	$530,303
Doraville	GA	1 38	Doraville		5 15	GA 2 ATLANTA Howell, GA to Duluth, GA	$3,508,070
Gainesville / Midland	GA	0 76	Gainesville		4 98	GA-6 Lynchburg, VA to Atlanta, GA	$473,273
Hapeville	GA	1 78	Hapeville Auto		30.45	GA-4 ATLANTA Spring Street to Morrow, GA	$23,687,860
Macon / CGA Jct.	GA	2 10	Brosnan	50 00	50.00	GA-6 Macon, GA to Mahrt, AL	$3,577,976
A&S Jct (E St Louis)	IL	2 20	Caapman	80 00	80.00	IL-7 E St Louis, IL to Danville, KY	$4,600,000
Chicago	IL	1 26	Landers - IM Facility	50.00	122 41	IL-1 CHICAGO, IL	$105,651,488
Chicago	IL	1.78	Chicago Auto		30.45	IL-1 CHICAGO, IL	$22,836,000
Chicago	IL	2 07	Calumet - IM Facility	50.00	50.00	IL-1 CHICAGO, IL	37,500,000
Chicago	IL	2 44	55th Stree	50.00	50.00	IL-1 CHICAGO, IL	$47,050,000
Chicago	IL	1 60	Ashland Ave	50.00	50.00	IL 1 CHICAGO, IL	$25,000,000
Chicago	IL	4 07	Chgo 47th		169 69	IL-1 CHICAGO, IL	$158,967,830
Chicago	IL	1 74	Chicago		6.59	IL 1 CHICAGO, IL	$3,618,939
CP 513	IL	2 25	Park Manor/63rd St - IM Facility	70 00	54.36	IL-1 CHICAGO, IL	$50,214,914
Decatur	IL	2 83	Decatur - IM Facility	45 00	45 00	IL-4 St Louis, MO to Ft Wayne, IN	$3,555,859
Burns Harbor	IN	2 15	Burns Harbor	45 00	45.00	IN 8 Chicago,IL to Cleveland,OH	$3,150,000
Elkhart	IN	2 70	Elkhart	130 00	130.00	IN 8 Chicago IL to Cleveland OH	$12,918,763
Ft Wayne	IN	1 99	Fort Wayne	130 00	130.00	IN 3 Chicago, IL to Bellevue, OH	6,849,563
NE Tower	IN	2 75	NE Tower		37.16	IN 3 Chicago, IL to Bellevue, OH	$2,194,965
Princeton	IN	2 40	Princeton	45 00	45 00	IN-7 East St Louis, IL to Danville, KY	$1,203,675
Van Loon	IN	2 69	Van Loon	50 00	50.00	IN-3 Chicago, IL to Bellevue, OH	4,640,278
Danville	KY	2 35	Danville	45 00	45 00	KY-1 Cincinnati, OH to Chattanooga, TN	$299,718
Ferguson (Somerset)	KY	2 41	Ferguson (Somerset)		9.25	KY-1 Cincinnati, OH to Chattanooga, TN	$138,807
Georgetown	KY	1 95	Georgetown - IM Facility		28 06	KY-1 Cincinnati, OH to Chattanooga, TN	$1,527,687
Louisville	KY	2 28	Louisville		24 11	KY 2 CP Jct to Danville, KY	$3,263,451
Louisville	KY	1 94	Appliance + Buechel		31 15	KY 2 CP Jct to Danville, KY	$4,673,100
Shelbyville	KY	1 78	Shelbyville Auto		30.45	KY-2 CP Jct. to Danville, KY	$106,568
New Orleans	LA	1 78	New Orleans Auto		26.62	LA 1 NEW ORLEANS	$9,981,375
New Orleans	LA	0.97	New Orleans		28 06	LA 1 NEW ORLEANS	$10,522,500
New Orleans (NE Tower)	LA	1 85	Oliver	80 00	80.00	LA-1 NEW ORLEANS	$25,738,095
Baltimore	MD	0.75	Baltimore IM Facility	0 00	28 06	MD 3 BALTIMORE Bayview to Dundalk	$9,933,740
Baltimore	MD	1 95	Coal Yard		34 18	MD-3 BALTIMORE Bayview to Dundalk	$11,963,636
Hannibal	MO	2 30	Hannibal		24 18	IL 6 Kansas City, MO to Decatur, IL	$139,913
Kansas City	MO	1 34	Valley		31 15	MO Kansas City MO to Decatur IL	$42,837
Kansas City (Block 227)	MO	2 03	Avondale	50.00	50.00	MO-1 KANSAS CITY, MO	$16,250,000
Moberly	MO	1 95	Moberly		20.18	MO Kansas City MO to Decatur IL	$1,465,252
S. Louis	MO	1 34	St Louis		31 15	IL 5 SAINT LOUIS METRO MO and IL	$6,230,800
Valley	MO	30 22	Valley Auto		188 01	MO Kansas City MO to Decatur IL	$367,071
Meridian	MS	2 63	Meridian	50.00	50.00	MS 2 Birmingham, AL to New Orleans, LA	$2,151,099
Asheville	NC	1 85	Asheville	45 00	45 00	NC-6 New Line, TN to Ashville, NC	$4,395,454
Charlotte	NC	1 76	Coach	50.00	50.00	NC 2 Lynchburg, VA to Atlanta, GA	$10,000,000
Charlotte	NC	1 94	Charlotte		31 15	NC 2 Lynchburg, VA to Atlanta, GA	$6,230,800
Greensboro	NC	0 97	Greensboro		28 06	NC 2 Lynchburg, VA to Atlanta, GA	$3,367,700
Wayne Jct	NC	1 37	Spartanburg	50.00	50.00	SC 2 Lynchburg, VA to Atlanta, GA	$3,547,445
Linwood	NC	2 90	Spencer	130 00	130.00	NC-2 Lynchburg, VA to Atlanta, GA	$585,000
Buffalo	NY	2 50	Buon	45 00	45.00	NY-1 BUFFALO, NY	$3,561,782
Buffalo	NY	1 34	Buffalo		31 15	NY-1 BUFFALO, NY	$2,336,550
Buffalo	NY	1 78	Buffalo		6.72	NY-1 BUFFALO, NY	$504,261
Cheektowaga	NY	1 78	Cheektowaga Auto		30.45	NY-1 BUFFALO, NY	$2,100,998
Bellevue	OH	2 75	Bellevue	130.00	130.00	OH 5 Bellevue, OH to Pittsburgh, PA	$1,643,584
Chillicothe	OH	2 50	Reich	45 00	45.00	OH-9 - Columbus, OH to Chillicothe, OH	$839,504
Cincinnati	OH	2 10	Sharonville - IM Facility	55 00	55.00	OH 11 CINCINNATI, OH	$7,425,000
Cincinnati	OH	2 00	Gest Street	30 00	47 64	OH-11 CINCINNATI, OH	$6,430,909
Cincinnati	OH	1 34	Cincinnati		31 15	OH 11 CINCINNATI, OH	$4,205,790

Land Valuation of DuPont SAR Yards

Page 2 of 2

City	State	Length (miles)	Yard Name	Dupont Opening Acres	Dupont Rebuttal Acres	Route Name	Land Value for Yard
Columbus	OH	2 05	Buckeye Yard Interchange	50 00	50.00	OH 8 COLUMBUS, OH	$4,750,000
Columbus	OH	2.50	Columbus		9 63	OH 8 COLUMBUS, OH	$914,375
Columbus	OH	1 34	Rickenbacker		31 15	OH-9 - Columbus, OH to Chillicothe, OH	$118,385
Fostoria	OH	1 28	Fostoria Auto		26.62	OH 4 Chicago, IL to Bellevue, OH	$189,438
FS Tower	OH	1 45	Wilson		10 33	OH-4 Chicago, IL to Bellevue, OH	$156,601
Maple Heights (Cleveland)	OH	1 67	Maple Heights IM Facility	45 00	45 00	OH-6 CLEVELAND OH	$2,633,308
Toledo	OH	2 03	Airline - IM Facility	45.00	45 00	OH-3 TOLEDO, OH	$2,763,991
Watkins	OH	2 07	Watkins	30 00	30.00	OH 8 COLUMBUS, OH	$2,579,315
Allentown	PA	2 40	Allentown	50.00	50.00	PA-5 Harrisburg, PA to Bayway, NJ	$5,187,500
Altoona	PA	2 05	Rose	60.00	63.09	PA-3 Pittsburgh, PA to Harrisburg, PA	$7,949,563
Bethlehem	PA	1 34	Bethintermodal		31 15	PA-5 Harrisburg, PA to Bayway, NJ	$9,346,200
Conemaugh	PA	2 20	Woodvale		58.04	PA-3 Pittsburgh, PA to Harrisburg, PA	$1,733,836
Conpit (Pittsburgh)	PA	1 90	Conpit	45 00	45.00	PA-3 Pittsburgh, PA to Harrisburg, PA	$225,000
Conway	PA	2 90	Conway	150 00	217.02	PA-2 PITTSBURGH, PA	$7,458,046
Enola	PA	2 85	Enola	60 00	60.00	PA 2 HARRISBURG, PA	$8,880,888
Harrisburg	PA	2.70	Harrisburg	85 00	85 00	PA 2 HARRISBURG, PA	$16,534,730
Harrisburg	PA	2 70	Harrisburg		130.68	PA 4 HARRISBURG, PA	$25,021,590
Norristown	PA	1 95	Abrams		28.36	PA 9 Edgemoor, DE to Morrisville, PA	$3,447,273
Pittsburgh	PA	1 34	Pitcairn		31 15	PA-2 PITTSBURGH, PA	$2,530,333
Reading	PA	2 00	Reading	45.00	45 00	PA-5 Harrisburg, PA to Bayway, NJ	$5,394,375
Rutherford	PA	2 30	Rutherford - IM Facility	85 00	118.73	PA 2 HARRISBURG, PA	$22,875,570
Greenville	SC	3.87	Greenville	45 00	45 00	SC-2 Lynchburg, VA to Atlanta, GA	$3,150,000
Spartanburg	SC	1 94	Spartanburg		7.36	SC-2 Lynchburg, VA to Atlanta, GA	$490,213
Bulls Gap	TN	2 20	Bulls Gap	45 00	45 00	TN 2 Chattanooga, TN to Walton, VA	$216,307
Chattanooga	TN	8.20	Deburtts	130 00	141 82	TN 5 CHATTANOOGA, TN	$18,209,014
Chattanooga	TN	0.87	Chattanooga		3 11	TN 5 CHATTANOOGA, TN	$379,166
Emory Gap	TN	1 85	Emory Gap	30 00	30 00	TN-1 Cincinnati, OH to Chattanooga, TN	$1,559,189
Knoxville	TN	2 50	Savier	55 00	55.00	TN 2 Chattanooga, TN to Walton, VA	$13,750,000
Memphis	TN	2 56	Forrest	105 00	105.00	TN 6 Chattanooga, TN to Memphis, TN	$8,533,378
Memphis	TN	1 34	Memphis		31 15	TN 6 Chattanooga TN to Memphis, TN	$2,336,550
Bristol	VA	2 38	Bristol		39.45	VA 1 Chattanooga, TN to Walton, VA	$2,822,326
Front Royal	VA	1 34	Front Royal		31 15	VIRGINIA - Harrisburg, PA to Roanoke, VA	$3,010,778
Oaks	VA	2 62	Crewe		17.60	VA 3 Cincinnati, OH to Petersburg, VA	$961,061
Petersburg	VA	2.04	Secaust		21 16	VA-3 Cincinnati, OH to Petersburg, VA	$1,414,229
Petersburg	VA	1 78	Petersburg Auto		30.45	VA 3 Cincinnati, OH to Petersburg, VA	$2,101,682
Roanoke	VA	2 70	Roanoke	130.00	130 00	VA-3 Cincinnati, OH to Petersburg, VA	$24,949,112
Shenandoah	VA	1 70	Shenandoah	45.00	45 00	VA-4 - Harrisburg, PA to Roanoke, VA	$675,000
Dickinson	WV	1 63	Dickinson	45.00	45 00	WV 2 Cincinnati, OH to Petersburg, VA	$4,789,856
Elmore	WV	1 95	Elmore	40.00	40 00	WV 2 Cincinnati, OH to Petersburg, VA	$104,000
PD Jct.	WV	2.12	PD Jct Yard		22.87	WV-2 Cincinnati, OH to Petersburg, VA	$94,965
TOTAL				3,600 00	5,495 27		$ 995,290,349
OPENING EVIDENCE				3,725.00			$ 539,179,382
CHANGE FROM OPENING EVIDENCE					1,770 27		$ 456,110,967

The value of the land required to support the revised yards for the DuPont SARR totals 5,495.27 acres with a land valuation of $995,300,000 (rounded). The Opening Evidence included a land value of 3,725.0 acres with an overall value of $539,200,000 (rounded).

The change in land valuation required to support the yards for the DuPont SARR is an increase in 1,770.27 acres, with an increase in the land value of $456,100,000 (rounded).

Addenda

The Appraisal of Real Estate
(13th Edition by the Appraisal Institute)

Topic: Selecting Units of Comparison (page 1 of 3)

The Appraisal of Real Estate

THIRTEENTH EDITION

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The Appraisal Institute advances global standards, methodologies, and practices through the professional development of property economics worldwide.

The Appraisal of Real Estate
(13th Edition by the Appraisal Institute)

Topic: Selecting Units of Comparison (page 2 of 3)

neighboring properties may also provide helpful information.

Sometimes income and expense data for income-producing properties is unobtainable. If data on a particular sale is unavailable, assigning rents and expenses "based on market parameters" may be improper, especially for properties with existing leases. Nevertheless, market-derived rental and expense information may be useful in developing income and expense statements and appropriate capitalization rates for comparable properties. This sort of analysis can serve as a *test of reasonableness for data developed in other ways.*

A transaction between unrelated parties under no duress. The common definitions of market value usually set out the criteria for an arm's-length sale in detail.

Referencing public records and data services does not verify a sales transaction. It simply confirms that a transaction was recorded. Similarly, referencing the source of secondary data only confirms its existence and does not verify the transaction. Generally, secondary sources do not provide adequate information about sale concessions, whether the sale was an arm's-length transaction, if multiple properties were involved in the sale, if personal property was included, and other factors influencing value

Selecting Units of Comparison

After sales data has been gathered and verified, systematic analysis begins. Like units must be compared, so each sale price should be stated in terms of appropriate units of comparison. The units of comparison selected depend on the appraisal problem and nature of the property, as illustrated in Table 15.1.

Appraisers use units of comparison to facilitate comparison of the subject and comparable properties. The sales should be analyzed to determine which unit of comparison has the closest correlation with the comparable sales. This analysis will identify the proper unit of comparison to be used, such as price per acre or price per square foot, which is especially important for properties in markets in transition.

Prices of comparable properties are not usually adjusted on the basis of differences in net operating income per unit because rents and sale prices *tend to move in relative tandem. A value indication developed* using NOI per square foot as a unit of comparison is not independent of a value indication developed using direct capitalization, which negates the checks and balances provided by using more than one approach to value. In effect, the results suffer from circular logic.

Nevertheless, the appraiser should consider why the income per unit varies among the sale properties. Sensitivity and trend analyses may be performed to gain an understanding of this variance. For example, an appraiser may analyze sales of income-producing properties to derive potential and effective gross income multipliers, overall and equity capitalization rates, and even total property yield rates. These factors are not

The components into which a property may be divided for purposes of comparison, e.g., price per square foot, front foot, cubic foot, room, bed, seat, apartment unit. These units usually facilitate analysis even when the properties are not very comparable.

The Appraisal of Real Estate
(13th Edition by the Appraisal Institute)

Topic: Selecting Units of Comparison (page 3 of 3)

Table 13.1 [illegible]

Property Type	Typical Units of Comparison
Single-unit residential property	Total property price
	Price per square foot of gross living area
Apartment properties	Price per apartment unit
	Price per room
	Price per square foot of gross building area
Warehouses	Price per square foot of gross building area
	Price per cubic foot of gross building volume
Factories	Price per square foot of gross building area
	Price per machine unit
Office properties	Price per square foot of gross building area
	Price per square foot of net rentable area
	Price per square foot of usable area
Hotels and motels	Price per guest room
Restaurants, theaters, and auditoriums	Price per seat
Hospitals	Price per square foot of gross building area
	Price per bed
Golf courses	Price per round (annual number of rounds played)
	Price per membership
	Price per hole
	Price per acre
Tennis and racquetball facilities	Price per playing court
Mobile home parks	Price per parking pad
Marinas	Price per slip
Automobile repair facilities	Price per bay
	Price per square foot of gross building area
Agricultural properties	Price per acre
	Price per animal unit (for pastureland)
	Price per board foot (for timberland)
Vacant land	Price per front foot
	Price per square foot
	Price per acre
	Price per buildable square foot

adjusted quantitatively. Instead, the appraiser considers their ranges and the similarities and differences between the subject and comparable sale properties that cause the multipliers and rates to vary. The appraiser then selects the rate from within the refined value bracket that is most appropriate to the property being appraised for use in the income capitalization approach.[2]

2 While a superior property ought to sell and lease for more than an inferior one, in some cases that may not be true. Tenants and landlords alike will pay more for a property that is in a better location with newer improvements and more building area. However, if tenants are not responsible for the replacement of, say, the roof covering, they are not likely to pay more or less for a property with a roof that will need recovering soon. A buyer surely will pay less because of the needed roof, but tenants may not care. This will cause inconsistency in the multipliers and capitalization rates, which can be compensated for with adjustments to the sale prices of comparable sales used to extract the capitalization rates as discussed in Chapters 22 and 23.

Comparable Land Sales Used by NS Appraiser

Test of NS Estimate of Value vs Actual Sales Prices

[ ] = comparable sales (actual data)

= what properties would have sold for if they sold at NS Appraiser's estimated average price per acre

State	Route	County	Land Use Type	Numb of Sales	NS Estimate of Avg $/Acre	Summation of Sales Prices Using NS Avg	Summation of Actual Sales Prices	Difference NS Estimate vs Actual	% Difference NS Estimate vs Actual
AL		Marengo County AL	A	23	$1,840	$3,497,343	$3,864 767	($367,424)	-9.5%
AL		Etowah County, AL	A	22	$2,729	$3,329 733	$3,195 088	$134,644	4 2%
AL		Jefferson County AL	A	17	$12,513	$3,657,888	$3 370 49'	$282,377	8.4%
AL		Limestone County AL	A	18	$8,252	$10,908,557	$9,824 839	$1,081,717	11.0%
AL		Dallas County AL	A	8	$2,282	$800,539	$885 240	$111 299	16.9%
AL		Bibb County AL	A	12	$7,000	$3,579 099	$2,865 075	$714,023	24 9%
AL		Bibb County AL	A	12	$7,000	$3,579 099	$2,865 075	$714,023	24 9%
AL		Mobile County, AL	A	63	$5,501	$20,883,537	$16 303 005	$4,580,532	28.2%
AL		Autauga County AL	A	9	$2,081	$2,279 719	$1 764 290	$515,458	29.2%
AL	3	Route 3 - Birmingham, AL to New Orleans, LA	A	30	$9,914	$8,464 400	$6,339 400	$2,125,006	33.5%
AL	7	Route 7 - Austell, GA to Birmingham, AL	A	31	$9,435	$5,830,831	$4 100 481	$1,730,350	42.2%
AL		Lawrence County, AL	A	35	$6,101	$4 700,000	$3,372 428	$1,428,662	42.3%
AL	4	Route 4 - Burstall, AL to Mobile AL	A	135	$5 972	$45,803,730	$31 023 629	$14,880,121	47 9%
AL	5	Route 5 - Chattanooga, TN to Memphis, TN	A	58	$5 947	$22,907 310	$15,178 677	$7,730,453	50 9%
AL		St Clair County AL	A	11	$2,657	$823,572	$505 435	$317,167	62.9%
AL		St Clair County AL	A	11	$2,657	$823,572	$505 435	$317,167	62.9%
AL		De Kalb County, AL	A	71	$7,322	$5,683,087	$3 353 078	$2,330,009	69.9%
AL		Russell County AL	A	158	$3 434	$32,964 760	$1 7 025 379	$15,939,411	93.9%
AL	1	Route 1 - Birmingham, AL to Chattanooga, TN	A	128	$6,398	$21,878,299	$11 058 240	$10,820,025	97 8%
AL		St Clair County AL	C	4	$166,388	$3,337,414	$3,108,123	$229,290	7 4%
AL		St Clair County, AL	C	4	$166,388	$3,337,414	$3,108,123	$229,290	7.4%
AL		Colbert County AL	C	3	$73,320	$708,804	$668,308	$80,496	7 7%
AL		Calhoun County AL	C	6	$107,958	$2,774 719	$1 840,106	$934,613	50 8%
AL	7	Route 7 Austell GA to Birmingham, AL	C	53	$117 918	$48,001,882	$29 017,032	$19,084,850	65.8%
AL	5	Route 5 Chattanooga, TN to Memphis, TN	C	35	$145 394	$42,680,449	$23,498,825	$19,181,624	81 6%
AL	4	Route 4 Burstall, AL to Mobile, AL	C	132	$112,639	$140,737,565	$74 140,752	$66,596,813	89.8%
AL	1	Route 1 - Birmingham, AL to Chattanooga, TN	C	47	$145 254	$55 888,446	$28,163,884	$27,724,562	98 4%
AL		Madison County, AL	C	22	$205 300	$47,466,545	$20 606,638	$26,859,907	130 4%
AL		Jefferson County, AL	C	51	$217 190	$82,500,570	$34 853,444	$47,647,126	136.7%
AL		Mobile County AL	C	70	$183,563	$73,688,772	$30,149,369	$43,540,402	144 4%
AL	3	Route 3 Birmingham, AL to New Orleans, LA	C	52	$189,433	$72,748,724	$29,098,637	$43,648,087	150.0%
AL		Tuscaloosa County, AL	C	9	$237,439	$21,669,203	$4 042,877	$17,647,326	436.5%
AL		Madison County AL	I	3	$154 198	$1 458,844	$1 298 118	$158,825	12.2%
AL		Jefferson County AL	I	19	$692,463	$13 202,718	$8,876 988	$4,325,730	48.7%
AL	1	Route 1 Birmingham, AL to Chattanooga TN	I	19	$692,463	$13,202,718	$8,876 988	$4,325,730	48.7%
AL	7	Route 7 Austell GA to Birmingham, AL	I	19	$692,463	$13,202 988	$8,876 988	$4,325,919	48.7%
AL	3	Route 3 Birmingham, AL to New Orleans, LA	I	20	$58,576	$13,788,499	$9,283,327	$4,523,172	48.8%
AL	4	Route 4 Burstall, AL to Mobile, AL	I	28	$64 272	$21 705,414	$14 251,285	$7,444,129	52.2%
AL		Entire State of Alabama	I	33	$70,487	$27,078,348	$16,788,705	$10,308,641	61.5%
AL	5	Route 5 - Chattanooga, TN to Memphis, TN	I	4	$125,636	$3,708,378	$2 121 081	$1,587,296	74 8%
AL		Mobile County, AL	I	7	$42,333	$2,877,771	$1,300,036	$1,577,736	121.4%
AL		Mobile County, AL	R	3	$58 088	$1,021,359	$1,095,507	($74,147)	-6.8%
AL		Colbert County AL	R	3	$17 913	$2,611,659	$2,797,652	($185,993)	-6.6%
AL	5	Route 5 - Chattanooga, TN to Memphis, TN	R	7	$21 676	$4,287,329	$3,412 334	$874 995	25 6%
AL	3	Route 3 Birmingham, AL to New Orleans, LA	R	91	$89,837	$23,680,972	$11 151,452	$12,529,520	112.4%
AL	1	Route 1 - Birmingham, AL to Chattanooga, TN	R	82	$31,072	$23,405,668	$10,967 988	$12,437,669	113 4%
AL		Jefferson County AL	R	86	$122,730	$31 914 782	$13,750,218	$18,164,565	132.1%
AL		Madison County AL	R	3	$32,248	$1 482,850	$604,606	$888,043	146.9%
AL	4	Route 4 Burstall, AL to Mobile, AL	R	113	$70,613	$34 029,883	$13,279 688	$20,750,196	156.3%
AL		Talladega County AL	R	3	$28,514	$12 528,115	$2 817,632	$9,710,483	344 6%
AL	7	Route 7 - Austell, GA to Birmingham, AL	R	63	$88,241	$61 268,084	$13,519 583	$47,779,512	353 4%
AL		Shelby County, AL	R	3	$38,320	$3,197,052	$688,346	$2,510,706	364 9%

Comparable Land Sales Used by NS Appraiser

Test of NS Estimate of Value vs Actual Sales Prices

[ ] = comparable sales (actual data)

= what properties would have sold for if they sold at NS Appraiser's estimated average price per acre

State	Route	County	Land Use Type	Number of Sales	NS Estimate of Avg $/Acre	Estimated Sales Price Using NS Avg	Actual Sales Price	Difference NS Estimate vs. Actual	Over -Estimate of Actual Sales Price
OH		Cuyahoga County OH	A	6	$10,826	$3,306,627	$4 301 574	($994,948)	22.1%
OH		Putnam County OH	A	6	$8,623	$1,137 510	$1 238,007	($100,497)	-8.1%
OH	4	Chicago IL to Bellevue, OH	A	71	$13,429	$27,783,093	$28,404 943	($611,850)	-2 2%
OH		Hancock County OH	A	6	$14 386	$831,021	$837 630	($6,609)	-0.8%
OH		Wood County, OH	A	3	$8,775	$484 176	$483,381	$795	0 2%
OH		Montgomery County OH	A	5	$17 047	$5,673,616	$5 647 228	$26,388	0 5%
OH		Huron County OH	A	23	$17 881	$12 300 230	$12 095,315	$304,916	2 5%
OH		Sandusky County OH	A	39	$12,672	$13,158 914	$14 608,529	($547,445	-3 7%
OH		Crawford County OH	A	20	$12,480	$5 800,561	$5 321 639	$478,912	8 2%
OH		Seneca County OH	A	4	$12,140	$7 2,870	$856,534	$86,348	9 9%
OH		Seneca County OH	A	4	$12,140	$7 2,870	$856,534	$86,348	9 9%
OH		Ottawa County OH	A	28	$12,634	$6,537 413	$5 007 720	$529 693	10.7%
OH		Ottawa County OH	A	28	$12,634	$6,537 413	$5,007 720	$529,693	10 7%
OH		Lucas County OH	A	53	$13,422	$17 767,058	$15 925,899	$1,843,256	11 6%
OH		Warren County, OH	A	91	$17 500	$62,621 681	$54 418,635	$8,402,746	15.4%
OH		Summit County, OH	A	40	$17 797	$24 219 581	$12 300 434	$1 918,188	15.6%
OH		Columbiana County OH	A	34	$8 388	$5,956 324	$5,051 855	$903,469	17 9%
OH		Stark County O	A	193	$15,930	$83 957 895	$84 074 958	$8,882,939	10.3%
OH	7	Route 7 - Detroit MI to Columbus OH	A	163	$15,172	$58 601 376	$44 425 500	$8,438,876	19 1%
OH		Butler County OH	A	41	$12,974	$18 821 574	$13 630 165	$2,891,409	20.3%
OH		Cincinnati, OH to Petersburg, VA	A	278	$15,418	$143 022,670	$118,763 419	$24,258,852	20 4%
OH	8	Entire State of Ohio	A	902	$14 574	$374 825,395	$305,688,958	$69,136,397	22.6%
OH		Chicago to Cleveland, OH	A	211	$12,447	$68 134 571	$54,692 842	$13,441,729	24 6%
OH		Lorain County OH	A	77	$13,543	$9 503 037	$7,631 739	$1,931,802	25.3%
OH		Clark County OH	A	14	$13,373	$3 528,435	$2,758,361	$767,074	27 8%
OH		Franklin County OH	A	6	$13,503	$2,177 469	$1,686,374	$491,095	29 1%
OH		Fairfield County OH	A	30	$14 045	$14 178 672	$10,831 294	$3,368,389	31.9%
OH		Portage County, OH	A	58	$12,271	$ 7 388 953	$13,252,154	$4,128,801	31 1%
OH		Mahoning County OH	A	18	$17 019	$6 081 243	$4 589 773	$1,491,470	32.2%
OH		Williams County OH	A	22	$8 035	$4 049 978	$3 056,170	$1,040,808	34 1%
OH		Erie County OH	A	72	$16 307	$13 453 903	$8 970,543	$3,483,366	34 7%
OH		Marion County OH	A	19	$22,045	$6 11 634	$4 440,352	$1,821 482	39 1%
OH		Perry County OH	A	3	$13 180	$1 627,175	$1,102,181	$434,994	39 9%
OH		Athens County OH	A	19	$8 365	$4 133,445	$2,937,672	$1,195,773	40 7%
OH		Madison County OH	A	14	$11 678	$7 667,035	$4 889 435	$2,677,601	53 7%
OH		Delaware County OH	A	11	$21 705	$8,368,775	$3,874 733	$2,494,043	84 4%
OH		Ross County, OH	A	11	$5 630	$4 156 047	$1,508,987	$2,647,060	175.5%
OH		Greene County OH	C	6	$281,589	$10 670,778	$9 570 344	$300,434	3.2%
OH		Columbus, OH to Cleveland, OH	C	169	$ 39 106	$268 403,613	$232,552,446	$68,851,006	29.7%
OH	7	Route 7 - Detroit MI to Columbus OH	C	253	$ 83 159	$408,851 587	$282,585,788	$123,268,720	43 6%
OH		Montgomery County OH	C	46	$158 788	$38 700 630	$25 287 778	$11,808,854	45 8%
OH		Wood County OH	C	19	$51,025	$14 601 581	$9 882 2 5	$4,732,376	48 0%
OH		Franklin County OH	C	199	$259 453	$404 188,744	$254 436 224	$139,870,519	57 8%
OH		Cincinnati OH to Petersburg VA	C	492	$163,708	$880 319,380	$63 656 823	$389,460,357	64 7%
OH		Stark County OH	C	13	$158 088	$4 880,105	$3,055 734	$1,824 371	69 7%
OH		Butler County OH	C	120	$309 841	$500,884,083	$308,382,724	$192,491,808	62.4%
OH	8	Entire State of Ohio	C	857	$174 912	$1 753,483,558	$944 306,705	$849 056,852	89 9%
OH		Cuyahoga County OH	C	84	$306,854	$300,705 072	$147 014 413	$153,791,659	104 6%
OH		Putnam County OH	C	4	$118 648	$851,525	$454 319	$437,206	109 4%
OH		Chicago to Cleveland OH	C	202	$163 585	$469 958,014	$205 472,501	$263,486,513	127 9%
OH		Summit County OH	C	112	$301 854	$178 151 545	$78 860 904	$107,291,042	151 1%
OH		Delaware County OH	C	12	$130 042	$50 374 479	$18,420 378	$31,954,094	172.4%
OH		Lucas County OH	C	84	$308,824	$90,121,824	$33 256,825	$63,864,999	189 9%
OH		Route 5 - Bellevue to Pittsburgh	C	200	$102,074	$572,473,447	$195,166 687	$376,306,760	191 9%
OH		Fairfield County OH	C	48	$298,897	$135 107,089	$37,373,509	$97,734,130	261 5%
OH		Madison County OH	C	6	$227,880	$28,783,014	$6,741 005	$22,033,838	326.9%
OH	4	Chicago, IL to Bellevue OH	C	7	$ 88,678	$12 829 504	$2,814 384	$9,814,121	328.9%
OH		Lorain County OH	C	51	$238,908	$334 844,727	$70,938 622	$263,906,135	372 0%
OH		Portage County, OH	C	21	$ 68,676	$132,372,858	$28,503,526	$81,869,332	389.7%
OH		Clark County, OH	C	7	$249,978	$19 173,139	$ 1,884 402	$17,818,736	1039 8%

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State	Route	County	Land Use Type	Numb. of Sales	NS Estimate of Avg $/Acre	Estimated Sales Price Using NS Avg	Actual Sales Price	Difference NS Estimate vs. Actual	Over -Estimate of Actual Sales Price
OH		Delaware County OH	I	3	$115,520	$6,160,677	$6,297,718	($137,041)	2.2%
OH		Lucas County, OH	I	7	$84,512	$6,281,464	$5,973,821	$287,643	4.8%
OH	7	Route 7 - Detroit MI to Columbus OH	I	53	$98,655	$108,834,261	$74,924,543	$33,909,718	45.3%
OH		Franklin County OH	I	39	$103,692	$94,392,409	$62,105,619	$32,286,790	52.0%
OH		Columbus, OH to Chillicothe, OH	I	39	$103,692	$94,392,409	$62,105,619	$32,286,790	52.0%
OH		Montgomery County, OH	I	6	$34,133	$2,493,105	$1,581,497	$911,608	57.6%
OH		Summit County, OH	I	15	$66,640	$19,878,266	$12,333,721	$7,544,564	61.2%
OH		Sandusky County, OH	I	3	$7,126	$457,710	$272,656	$185,054	67.9%
OH	4	Chicago, IL to Bellevue, OH	I	3	$7,126	$457,710	$272,656	$185,054	67.9%
OH		Cuyahoga County OH	I	24	$108,281	$69,340,682	$38,255,182	$31,085,499	81.3%
OH		Chicago to Cleveland, OH	I	47	$101,573	$109,537,099	$55,725,467	$53,811,632	96.6%
OH		Warren County, OH	I	6	$83,458	$10,540,000	$4,997,855	$5,542,145	110.9%
OH		Route 5 - Bellevue to Pittsburgh	I	62	$60,161	$127,882,999	$57,033,276	$69,990,723	126.8%
OH	5	Entire State of Ohio	I	174	$88,280	$495,259,840	$220,214,731	$275,045,109	124.9%
OH		Cincinnati, OH to Petersburg, VA	I	88	$92,435	$314,873,332	$134,612,588	$180,060,744	133.8%
OH		Butler County OH	I	12	$81,715	$33,264,618	$12,271,368	$20,993,250	171.1%
OH		Portage County, OH	I	11	$51,506	$23,505,713	$7,979,428	$15,526,285	198.3%
OH		Lorain County, OH	I	12	$23,001	$30,857,654	$8,610,974	$22,246,730	258.4%

OH		Madison County, OH	R	3	$90,268	$1,770,170	$2,634,019	($863,848)	-32.8%
OH		Sandusky County OH	R	9	$2,742	$618,309	$532,003	$86,306	16.2%
OH		Columbiana County OH	R	7	$4,176	$61,930	$50,591	$12,340	17.7%
OH		Wood County, OH	R	6	$35,820	$1,396,293	$1,148,686	$248,607	21.6%
OH		Cuyahoga County, OH	R	24	$99,108	$31,374,545	$22,642,358	$8,732,187	38.6%
OH		Perry County, OH	R	3	$47,883	$151,633	$107,393	$44,240	41.2%
OH		Clark County OH	R	3	$43,117	$314,321	$210,188	$104,133	49.5%
OH		Portage County, OH	R	26	$35,359	$36,620,439	$25,638,028	$13,182,410	51.4%
OH		Delaware County, OH	R	7	$82,451	$1,842,779	$1,193,553	$649,217	54.4%
OH		Columbus, OH to Chillicothe, OH	R	66	$73,700	$288,634,132	$172,757,475	$95,876,657	55.5%
OH	7	Route 7 - Detroit MI to Columbus OH	R	119	$71,547	$289,214,150	$178,512,276	$110,701,873	62.0%
OH		Ross County OH	R	4	$23,805	$339,933	$182,761	$157,171	86.0%
OH		Summit County OH	R	33	$92,700	$78,017,270	$40,976,176	$37,051,094	90.4%
OH		Route 5 - Bellevue to Pittsburgh	R	150	$66,261	$302,076,525	$141,908,099	$160,167,825	112.9%
OH		Chicago to Cleveland, OH	R	121	$76,453	$175,118,657	$80,802,820	$94,315,837	116.7%
OH		Fairfield County, OH	R	40	$42,048	$60,973,601	$30,583,809	$30,389,893	119.0%
OH		Butler County, OH	R	73	$99,370	$222,205,326	$99,355,669	$122,849,656	123.6%
OH		Lorain County, OH	R	49	$73,793	$127,304,043	$51,929,758	$75,374,284	145.1%
OH		Franklin County, OH	R	127	$142,548	$538,872,814	$214,901,788	$323,971,026	150.8%
OH		Athens County, OH	R	58	$70,869	$9,651,256	$3,818,176	$5,833,079	152.8%
OH		Cincinnati, OH to Petersburg, VA	R	480	$104,515	$1,345,189,661	$526,231,086	$818,938,576	155.6%
OH		Stark County, OH	R	8	$123,498	$873,131	$328,935	$544,496	165.7%
OH	5	Entire State of Ohio	R	751	$105,189	$1,912,225,940	$716,770,492	$1,195,455,456	166.8%
OH		Greene County, OH	R	6	$44,252	$4,798,479	$1,595,539	$3,202,940	200.8%
OH		Montgomery County, OH	R	18	$88,407	$12,488,980	$3,770,805	$8,718,175	231.1%
OH	4	Chicago, IL to Bellevue, OH	R	25	$12,906	$3,932,436	$1,089,484	$2,842,952	260.9%
OH		Warren County, OH	R	69	$88,804	$324,118,684	$82,083,115	$242,053,549	295.0%
OH		Lucas County, OH	R	6	$115,893	$17,537,257	$4,014,673	$13,522,583	344.3%

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PA	3	Blair County	A	4	$2,445	$525.29*	$459 171	$66,121	14 4%
PA	6	Cumberland	A	44	$16,007	$26,282,375	$22 781 499	$3,500,876	15.4%
PA	6,8	York	A	45	$14 449	$20,-82,957	$17,333 407	$2,849,559	16.4%
PA	3	Indiana	A	7	$14 137	$1 979,434	$1,643 084	$336,370	20.5%
PA	5	Lancaster	A	311	$17,375	$241,160,575	$199,822 693	$41,337,881	20.7%
PA	6	Rt 6 Harrisb to Roanoke (Franklin)	A	158	$15,985	$81,697,714	$67 527 675	$14,170,039	21 0%
PA	5	Lehigh County	A	48	$24 605	$12 100,222	$9,935,050	$2,166,172	21 8%
PA	1	STATE (Beaver)	A	818	$16,573	$480,415 483	$373,784 690	$106,630,792	28.5%
PA	7	Dauphin	A	88	$15,699	$35,345,877	$27 412 868	$7,936,009	28.9%
PA	5	Lebanon County	A	3	$12 347	$2,720,561	$2,083,348	$637,213	30 6%
PA	3	Westmmeland	A	74	$16,075	$36,983,289	$26,940 111	$10,043,158	37 3%
PA	7	Northumberland	A	3	$11 266	$773,316	$544 629	$228,689	42.0%
PA	1, 2	Beaver PA	A	5	$14 982	$3,232 188	$2,224 411	$1,007,766	45.3%
PA	1, 2	Lawrence	A	10	$12,889	$3,308,*89	$2,239 580	$1,068,689	47 7%
PA	3, 4	Perry	A	108	$10,886	$43,321,729	$26,832 714	$14,689,015	51.3%
PA	3	Rt 3-Pittsburgh to Harrisburg	A	228	$13,071	$88,500,633	$64,872,589	$33,628,064	52.3%
PA	5	Lebanon County	C	4	$233,568	$3 003,887	$2,509 578	$494,108	19.7%
PA	6	York	C	11	$'89,508	$13,548,886	$10,050 624	$2,696,263	23.7%
PA	6	Lancaster	C	16	$201,807	$12,883,200	$7,471 186	$5,392,013	72.2%
PA	3	Westmmeland	C	9	$70,412	$5 688,991	$2,902,242	$2,787,749	96.1%
PA	5	Lehigh County	C	21	$467,117	$29,049 995	$14 210 592	$14,839,403	104 4%
PA	3	Rt 3-Pittsburgh to Harrisburg	C	172	$111,885	$140,078 214	$64 700,*65	$75,378,849	116.5%
PA	9	Bucks	C	53	$477,517	$214 778,188	$94,888,361	$119,887,827	126.3%
PA	9	Montgomery	C	97	$425,229	$432,084 567	$187 290,320	$245,794,247	137.6%
PA	2	Allegheny	C	198	$267 301	$251 211 819	$67 912 339	$183,249,480	269.6%
PA	6	Franklin	C	4	$148 245	$ 0 294 112	$2,503 942	$7,690,163	286.3%
PA	4	Dauphin	C	84	$347,369	$173,202,729	$38 484 423	$134,738,306	350.3%
PA	1, 2	Beaver, PA	C	8	$44 832	$827,135	$179,997	$747,136	415.1%
PA	3	Rt 3-Pittsburgh to Harrisburg	I	3	$44 099	$802,598	$1 013,118	($210,521)	-20 8%
PA	9	Bucks	I	27	$'07,188	$33,090,981	$27 725,149	$5,366,842	19.4%
PA	5	Lehigh County	I	20	$187,090	$12,850 232	$10,737,951	$2,112,281	19.7%
PA	5	Lancaster	I	5	$131,520	$6,424 358	$4 763,691	$1 660,666	34.9%
PA	1	STATE (Beaver & Allegheny)	I	178	$148,814	$348 757,338	$211,046,835	$137,710,503	65.3%
PA	9	Montgomery	I	55	$201 580	$126,156,737	$75,257,395	$50,899,342	67 6%
PA	6	Rt 6 Harrisb to Roanoke (Cumberland, Franklin)	I	15	$77,041	$31,801 412	$17,744 370	$14,057,042	79 2%
PA	5	Rt 5-Harrisburg to Bayway (Lebanon)	I	34	$123,348	$99 143,079	$43,690,381	$51,452,718	117.8%
PA	4 8	York	I	5	$92,504	$6,454,382	$2,969 465	$3,584,927	134 9%
PA	4	HARRISBURG (Dauphin)	I	10	$91,070	$29 093 606	$8,110,291	$20,983,314	258.7%
PA	1, 2	Beaver PA	R	3	$39 817	$2,420,581	$ 641 181	$779,421	47 8%
PA	9	Bucks	R	79	$94,048	$333,440,057	$194 306 094	$139,873,963	71 8%
PA	5	Lancaster	R	16	$99,489	$6,352,724	$3,599 948	$2,752,776	76.5%
PA	9	Montgomery	R	90	$185 257	$364 384 397	$195,555,012	$168,829,384	86.3%
PA	6	Franklin	R	6	$28 998	$18,438,016	$9,504 438	$8,843,578	92.2%
PA	2	Allegheny	R	9	$58,588	$14 430,827	$5,847,394	$8,583,433	146.8%
PA	5	Lehigh County	R	4	$73,008	$7,481,881	$2,824 887	$4,656,974	159.8%
PA	6	Cumberland	R	7	$94 055	$48,188,272	$17 003,200	$31,185,012	183.4%
PA	4 6,8	York	R	28	$'51,884	$25,984 244	$7,680,758	$18,103,487	239 7%
PA	3	Rt. 3-Pittsburgh to Harrisburg	R	16	$54 201	$30,599,311	$8,114 225	$22,485,086	351 1%
PA	4	Dauphin	R	5	$75,499	$14,895,003	$3,199,991	$11,696,043	366.6%
PA	5	Rt. 5-Harrisburg, PA to Bayway, NJ	R	26	$97,652	$59 456,027	$12 445,087	$47,011,940	377 8%
PA	4	Dauphin	R	5	$63,621	$27,999,184	$4 079,451	$23,919,713	587.8%

Comparable Land Sales Used by NS Appraiser

Test of NS Estimate of Value vs. Actual Sales Prices

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State	Route	County	Land Use Type	Numb. of Sales	NS Estimate of Avg $/Acre	Estimated Sales Price Using NS Avg	Actual Sales Price	Difference: NS Estimate vs Actual	Over -Estimate of Actual Sales Price
NY	1	Erie	A	23	$10,545	$7,954,321	$5,293,777	$1,660,544	26.4%
NY	2	Tioga	A	10	$8,776	$1,810,143	$1,428,994	$381,149	26.7%
NY	2	Broome	A	15	$10,553	$3,195,306	$2,460,834	$734,472	29.8%
NY	1	Rt.2-Buffalo to Harrisburg	A	67	$10,943	$19,861,819	$13,823,609	$6,038,210	43.7%
NY	2	Livingston (Agribusiness sales)	A	7	$12,079	$1,643,237	$1,036,195	$607,042	58.6%
NY	2	Wyoming	A	6	$10,184	$3,913,317	$2,203,792	$1,709,526	77.6%
NY	2	Chemung	C	6	$107,713	$1,328,287	$1,640,675	($312,589)	-19.1%
NY	1, 2	Erie	C	76	$154,405	$33,492,851	$17,355,400	$16,137,451	93.0%
NY	2	Rt.2-Buffalo to Harrisburg	C	113	$133,611	$45,735,883	$19,795,609	$25,940,274	131.0%
NY	2	Broome	C	10	$143,264	$5,405,485	$2,065,987	$3,339,498	161.6%
NY	2	Rt.2-Buffalo to Harrisburg	I	18	$52,302	$9,150,253	$3,513,643	$5,636,610	160.4%
NY	1, 2	Erie	I	18	$81,474	$14,311,027	$4,220,917	$10,090,109	239.1%
NY	1, 2	Erie	R	25	$80,543	$7,837,851	$7,815,549	$22,302	0.3%
NY	2	Rt.2-Buffalo to Harrisburg	R	26	$26,888	$10,696,758	$5,629,312	$5,067,446	89.9%

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NC	5	Route 5 Murphy Jc. NC to Waynesville NC	A	111	$20,300	$57,004 378	$54 956,097	$2,738,281	5.0%
NC	5	Route 5 Murphy Jc. NC to Waynesville NC	A	111	$20,300	$57,694 378	$54,956,097	$2,738,281	5.0%
NC	2	Gaston County	A	18	$15,773	$6,260,885	$5,430,379	$856,506	16.0%
NC	2	Cabarrus County	A	6	$18,140	$300,004	$328,104	$83,900	19 6%
NC	2	Route 2. Lynchburg VA to Atlanta GA	A	135	$13 857	$34 930,278	$28,135,516	$6,794,762	24 2%
NC	1	Route 1 Stokesland VA to Eden NC	A	6	$5,700	$2,650,501	$1,850,427	$809,074	43 7%
NC	2	Rockingham County	A	13	$5,720	$2,602,259	$1,787,318	$814,940	45 6%
NC	2	Rowan County	A	74	$12,545	$12,477,229	$7 800,391	$4,670,838	59.8%
NC	3	Rowan County	A	74	$12,545	$12,477,229	$7,800,391	$4,670,838	59.8%
NC	2	Gaston County	C	69	$141,121	$16,720,186	$14 293,008	$2,427,121	17 0%
NC	5	Buncombe (See Route Value)	C	45	$187 525	$37 881,943	$32 044 458	$5,837,486	18.2%
NC	5	Route 5 Murphy Jc. NC to Waynesville NC	C	31	$152,484	$16,251,747	$11 368,051	$4,882,796	42.9%
NC	2	Route 2. Lynchburg VA to Atlanta GA	C	424	$167,932	$578 779,540	$328,162 225	$250,037,315	76.7%
NC	2	Cabarrus County	C	30	$208 408	$150,684 787	$52 719 302	$97,965,488	186.8%
NC	2	Cleveland County	C	10	$102,177	$9,187,785	$2,560 236	$6,598,549	264.8%
NC	1	Route 1 Stokesland VA to Eden NC	C	14	$119,799	$10,338,891	$1,513,575	$8,825,116	583.1%
NC	2	Davidson County	C	12	$256,783	$42,797,972	$5,423,363	$37,374,609	689.1%
NC	2	Rowan County	C	7	$176,339	$44 495,831	$4 648,363	$39,847,288	857.2%
NC	3	Rowan County	C	7	$176,339	$44,495,831	$4,648,363	$39,847,288	857.2%
NC	2	Gaston County	I	3	$51,297	$1 456,842	$1,325,103	$130,938	9 9%
NC	2	Cabarrus County	I	8	$103,889	$16 270,045	$13 193,331	$3,076,713	23.3%
NC	2	Davidson County	I	3	$15,857	$3,057 137	$2 363,266	$693,871	29.4%
NC	2	Route 2. Lynchburg VA to Atlanta GA	I	148	$105,532	$154 732,337	$103 372 410	$51,359,920	49 7%
NC		NC - Entire State	I	151	$105,982	$157,933,926	$105,005,719	$52,838,206	50.3%
NC	1	Route 1 Stokesland VA to Eden NC	I	3	$114,625	$1,135,934	$692,573	$443,362	64 0%
NC	2	Rowan County	R	4	$21 570	$1,838,174	$2,120,245	($282,071)	-13.3%
NC	3	Rowan County	R	4	$21,570	$1,838,174	$2,120,245	($282,071)	-13.3%
NC	2	Cleveland County	R	4	$8,279	$546,713	$552,374	($5,660)	-1.0%
NC	2	Cabarrus County	R	18	$83,202	$60,020,840	$42,717,075	$17,302,885	40.5%
NC	2	Route 2. Lynchburg VA to Atlanta GA	R	889	$100,622	$805,772 485	$384 677,489	$300,894,977	78.2%
NC	1	Route 1 Stokesland VA to Eden NC	R	41	$13,444	$3,318,000	$1,568,672	$1,749,336	111 7%
NC	1	Rockingham County	R	44	$33,263	$3,528,474	$1,656,442	$1,872,032	113.0%
NC	2	Gaston County	R	9	$43,223	$16,523,079	$7,250,229	$9,272,850	127 9%
NC	2	Davidson County	R	4	$82,100	$12,937,275	$4,130,543	$8,806,732	213.2%
NC	5	Haywood	R	9	$25,415	$15,582,010	$4 553,833	$11,028,178	242.2%
NC	5	Buncombe	R	46	$157,713	$203,190,689	$20,652,385	$182,538,303	883.9%

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GA	5	Paulding	A	5	$19,306	$1,322,113	$1,538,330	($216,217)	-14.1%
GA	3	Henry	A	15	$23,991	$23,685,821	$27,412,291	($3,726,471)	-13.6%
GA	7, 13	Henry	A	15	$23,991	$23,685,821	$27,412,291	($3,726,471)	13.6%
GA	7	Route 7 McDonough GA to Macon GA (Monroe)	A	86	$10,784	$34,567,853	$37,346,614	($2,778,761)	-7.4%
GA	8	Houston	A	7	$11,885	$3,306,354	$3,373,872	$22,482	0.7%
GA	5	Stephens	A	11	$16,817	$5,763,847	$5,702,771	$61,176	1.1%
GA	8	Washington	A	4	$1 988	$1,008 258	$986,518	$21,740	2.2%
GA	5	Jenkins	A	20	$2,271	$5,648,117	$4 980,988	$668,129	13.4%
GA	8	Burke	A	22	$2,139	$4 885,144	$4 218,303	$676,841	16.0%
GA	8	Habersham	A	9	$17,502	$3,562,562	$3,058,0 0	$504 543	16.5%
GA	5	Gordon	A	64	$15 838	$30,802 002	$26 154 848	$4,447,752	17.0%
GA	10	Dade	A	21	$7,113	$1 8,810,688	$15,581 188	$3,258,488	21 0%
GA	5	Floyd	A	23	$8,858	$8,641,667	$7 042 587	$1,601,080	22.7%
GA	8	Hall	A	54	$22,205	$23,237,453	$1 8 188 340	$5,049,113	27 8%
GA	5	Route 5 Chattanooga TN to Atlanta GA	A	57	$13 419	$56,778,648	$43,837 119	$12,939,726	29.5%
GA	5	Polk	A	24	$8,348	$8,748,418	$6,647,734	$2,098,682	31 6%
GA	8	Jones	A	21	$4 670	$18,309,697	$14 590 928	$4,714,769	32.3%
GA	5	Whitfield	A	7	$15 858	$3,213,543	$2,415,321	$798,223	33.0%
GA	8 9	Bibb	A	14	$13,388	$5,052,748	$3,647 877	$1,404,869	38 5%
GA	7	Butts	A	22	$12,804	$8,714 852	$6 231 944	$2,482,108	39.8%
GA	8	Banks	A	31	$16,147	$20,807,181	$14 734 084	$6,073,096	41.2%
GA	12	Haralson	A	28	$8,823	$8,733,472	$6,217 449	$3,516,032	56 5%
GA	14	Route 14 Dremen GA to Yates GA- COWETA	A	58	$11,829	$25,083,781	$15,843 429	$9,243,371	58.4%
GA	8	Twiggs	A	6	$4 568	$1 612,679	$1 018,251	$594,428	58.4%
GA	12, 14	Carroll	A	31	$14 013	$15,290,582	$9,622,989	$5,667,592	58.9%
GA	8	Richmond	A	24	$12 758	$4 982,428	$2 810,696	$2,171,732	77.3%
GA	8	Jefferson	A	40	$4 374	$17,805,248	$8 402,897	$8,402,350	89 4%
GA	8	Route 8 Macon GA to Mehl AL-Peach-Muscogee	A	44	$10,281	$25,013,758	$12 988 333	$12,844,426	97 8%
GA	8	Talbot	A	3	$8 488	$100,121,957	$57 882 018	$42,239,940	73 0%
GA	9	Route 9 Macon GA to Greenwood GA	A	158	$5,943	$87,648,641	$41 971 453	$45,728,188	109 1%
GA	8	Crawford	A	4	$3 482	$889,613	$373,723	$359,890	119.2%
GA	8	Taylor	A	12	$5 710	$7,016 628	$3,211,949	$4,304,681	134 1%

GA	5	Habersham	C	4	$30 737	$2,027 488	$2,108,014	($81,527)	-3.9%
GA	5	Floyd	C	4	$180 388	$2,209 634	$1 823,628	$286,306	14 9%
GA	5	Whitfield	C	15	$89 830	$4,800,516	$3,269,215	$1,531,301	46.8%
GA	4	Clayton	C	79	$362,023	$178,228,818	$113,755,202	$64,473,615	56.7%
GA	1, 12	Cobb	C	360	$430,330	$814 775,536	$458,834 232	$355,941,303	76 7%
GA	2 6	Gwinnett	C	889	$488 118	$1 717 904 537	$944 748,588	$773,163,961	81 8%
GA	12	Douglas	C	62	$283,184	$133,778,052	$84,360,930	$49,417,122	107 9%
GA	10	ENTIRE State Route 10	C	1,089	$184 498	$4,580,295,824	$2,192,469 788	$2,387,816,034	108.9%
GA	10	Route 10 Birmingham to Chattanooga - STATE	C	1,089	$184 498	$4,580,295,824	$2,192,469 788	$2,387,816,034	108.9%
GA	8	Muscogee	C	19	$158 828	$28,141,517	$12,611,184	$15,530,333	123.1%
GA	5	Paulding	C	41	$309 227	$85,363,875	$41,401,315	$43,962,561	130.3%
GA	2	DeKalb	C	248	$815,430	$847,821 933	$361 732,514	$486,789,419	134.3%
GA	12, 14 15	Carroll	C	28	$172,181	$80 800,052	$42,273,898	$37,526,162	136 2%
GA	3	Henry	C	138	$281 295	$835,535,208	$240,489,375	$395,664,833	164.3%
GA	7, 13	Henry	C	138	$281,295	$835,535,208	$240 489 375	$395,664,833	164.3%
GA	13	Henry	C	138	$281,295	$835,535,208	$240 489,375	$395,664,833	164.3%
GA	8	Richmond	C	84	$219,154	$33,056,583	$11,520 434	$22,436,149	194 8%
GA	8	Route 8 Macon GA to Mehl AL-Peach	C	55	$152,724	$82,336,100	$28,039,096	$54,300,004	223.4%
GA	9	Route 9 Macon GA to Greenwood GA	C	72	$135,878	$78,114,601	$23,473 891	$55,640,710	237 8%
GA	7, 8	Bibb	C	25	$183,601	$53,899,078	$ 2,954 088	$40,944,990	316.1%
GA	8	Hall	C	177	$370,788	$888,222,706	$201 952,137	$686,270,529	339.8%
GA	14	Route 14 Dremen GA to Yates GA- HARALSON	C	50	$135,821	$363,098,723	$124 864 787	$428,228,936	343 0%
GA	4	Fulton	C	609	$827,273	$6,456,536,296	$1,359,989,967	$5,196,534,430	377.9%

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GA	14	Cowsta	I	4	$24 932	$14 952,736	$22,775 571	($7,812,833)	-34 3%
GA	14	Route 14 Bremen GA to Yorke GA- CARROLL-HARALSON	I	6	$22,680	$17,318,881	$25,893 718	($8,574 858)	-33.1%
GA	9	Bibb	I	3	$20,621	$683,401	$782 882	($119,481)	15.3%
GA	5	Paulding	I	5	$83 807	$1 857 156	$1 802 071	$55,085	3 1%
GA	8	Route 8 Macon GA to Mshrt AL - Bibb-Peach)	I	7	$83,836	$9,650 485	$8 200,720	$1,449,765	17 7%
GA	12	Douglas	I	18	$87,987	$49,585,896	$35 430 275	$10,155,421	28.7%
GA	5	Route 5- Chattanooga TN to Atlnta GA	I	58	$147 224	$83 057,057	$58 489,635	$24,567,223	42.0%
GA	4	Clayton	I	21	$112 057	$33,082,487	$20,571 935	$12,120,552	57 8%
GA	1, 12	Cobb	I	51	$197 723	$104 779 724	$66,300 110	$38,388,614	57 8%
GA	12	Route 12. Austell GA to Birmingham AL Carroll	I	67	$132,775	$150,237 657	$82,348,157	$68,889,500	71 3%
GA	8	Route 8 Lynchburg VA to Atlanta GA	I	127	$134,053	$312,332 548	$178,665 720	$133,666,827	76.8%
GA	9	Route 9 Macon GA to Gracewood GA	I	8	$20,655	$2,424,564	$1,361,358	$1,063,209	78 1%
GA	3	Henry	I	29	$112,318	$132,498 259	$73,761,892	$58,736,367	79 6%
GA	7 13	Henry	I	29	$112 318	$132,498 259	$73,761,892	$58,736 367	79 6%
GA	13	Henry	I	29	$112,318	$132,498 259	$73 761,892	$58,736,367	79 6%
GA	2, 6	Gwinnett	I	105	$230,646	$263 052,012	$153 751,696	$109,300,316	84 1%
GA	10	ENTIRE State - Route 10	I	391	$128 936	$1 142,823,170	$547,623,333	$595,199,837	108.7%
GA	10	Route 10 Birmingham to Chattanooga - STATE	I	391	$128,936	$1,142,823,170	$547,623,333	$595,199,837	108.7%
GA	2 3	Dekalb	I	61	$311 237	$124 084 184	$54 464 887	$69,629,297	127 9%
GA	8	Hall	I	40	$115,569	$139,256,203	$52,072,606	$86,234,598	165.6%
GA	2 3	Dekalb	I	98A LS	$277,426	$208,400,049	$80,288 155	$146,122,893	242.4%
GA	9	Richmond	I	3	$60,366	$2,017,186	$525,719	$1,491,447	283.7%
GA	2,4	Fulton	I	86	$373,053	$544 821,336	$126,119,095	$418,702,241	332.0%
GA	8	Muscogee	I	6	$544 406	$82,478,058	$8,932 045	$83,544,012	899 6%
GA	10	Dade	R	94	$30,025	$10 249 152	$8 067,569	$1,851,853	17.8%
GA	6	Gordon	R	127	$27,814	$8 014 218	$7 368 437	$2,615,782	34.0%
GA	5	Route 5. Chattanooga to Atlanta	R	365	$100,218	$660,123,197	$674,169 974	$285,953,222	42.4%
GA	9	Richmond	R	65	$24,699	$7,852,249	$5,370 164	$2,282,085	42.5%
GA	12	Douglas	R	80	$35,621	$167,881,055	$110,850,705	$57,230,350	51 7%
GA	5	Paulding	R	119	$54,905	$215,834 099	$134 511 155	$81,322,945	60.5%
GA	9	Jones	R	65	$14 482	$7,008,429	$4 316 7 2	$2,691,709	62.4%
GA	8	Muscogee	R	3	$30,668	$3,018 629	$1 8 5 699	$1,283,130	68.2%
GA	1 5, 12	Cobb	R	445	$237 787	$1 226,032,848	$725,508 670	$500,524,178	69 0%
GA	9	Burke	R	3	$15,500	$130,331	$74,667	$55,664	74.6%
GA	3, 4	Clayton	R	68	$87 152	$238,826,800	$139,908 003	$102,918,596	76.2%
GA	5	Whitfield	R	46	$33,378	$7 087,128	$3 717,341	$3,369,786	90.7%
GA	8	Route 8- Lynchburg VA to Atlanta GA	R	900	$84 413	$2 451 260,544	$1 272,702 706	$1 155,557,838	91.0%
GA	3	Henry	R	181	$83,431	$588,738,444	$304,847,356	$283,891,088	93.1%
GA	7, 13	Henry	R	181	$83,431	$588,738,444	$304,847,356	$283,891,088	93.1%
GA	7	Route 7 McDonough GA to Macon GA (Monroe)	R	182	$82,845	$601,826,585	$304 773 247	$297,053,341	97.5%
GA	5	Polk	R	6	$30,032	$1,136,780	$549,110	$587,670	107 0%
GA	12, 14 15	Carroll	R	31	$87,588	$42,221,243	$20 052,785	$22,168,458	110 6%
GA	2, 6	Gwinnett	R	579	$176 226	$1,084 899,519	$630,212 026	$1,064,687,491	113.4%
GA	9	Route 9 Macon GA to Gracewood GA	R	184	$28,053	$33,470,244	$ 5,646 458	$17,823,788	113.9%
GA	7,9	Bibb	R	5	$41,202	$10 003,024	$3 472,078	$6,530,946	188.1%
GA	9	Jenkins	R	5	$9,432	$285,791	$97 144	$188,647	228 0%
GA	8	Route 8 Macon GA to Mshrt AL-Peach	R		$33 367	$31 205,993	$8 419 733	$22,786,760	270 7%
GA	6	Hall	R	339	$118,564	$1 709,218 080	$413 625,322	$1,295,699,758	313.2%
GA	2	Dekalb	R	217	$514,861	$2,238,002,627	$451 138,070	$1 786,864,558	396.1%
GA	14	Haralson	R	9	$46,943	$43,842,370	$7,711,503	$36,330,876	468.9%

PART III-G

TAB 1

LAND INFLATION VALUES

In its Opening Evidence, DuPont relied upon historic average land values reported by independent third parties to develop estimated future rural and urban land values This approach is consistent with STB precedent, which states in the absence of an objective, non-litigation produced forecast, use of historical averages is the preferred method in estimating future values.[1] Moreover, the STB has also stated that, when developing historic averages, it is preferable to use a longer rather than a shorter period of historic data when forecasting future economic trends, such as an inflation rate for land values.[2]

NS asserts that DuPont's approach is flawed and that what happened in the past is not necessarily what will happen in the future. Because of this, NS asserts that DuPont's use of over 80 years of historic farm land values is improper and replaces DuPont's historic average with an unsupported figure developed by real estate consultants. In addition, NS claims that the urban land indexes DuPont used are unrepresentative of the land parcels along the DRR's urban corridors. In actuality, NS's claims are incorrect as explained below.

A. RURAL LAND VALUES

NS claims that DuPont improperly uses the average quarterly rate of farmland appreciation from 1930 to 2011 reported by the United States Department of Agriculture ("USDA") to index the average annual rate of appreciation of DRR rural land.[3] Instead, NS states that there is a direct link between U S. farm income and farm land values, and that projected declines in U.S farm exports and increases in farm operating costs and interest rates

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1 *See TMPA* p. 603 - "[w]e are reluctant to rely on forecasts prepared specifically for this litigation, " and *McCarty Farms*, p 473 - "[a]bsent an actual forecast of future growth trends, McCarty's method of projecting traffic growth based on historical traffic trends will be used "

2 *See AEPCO*, p. 139 - "[w]e reiterate that it is preferable to use a longer rather than a shorter period of historic data when forecasting future economic trends, such as an inflation rate for land values or the cost of equity."

3 *See* NS Reply, p III-G-6

LAND INFLATION VALUES

will lead to lower future farm income, and, therefore, lower future land values.[4] NS states that, at best, DRR rural land values will appreciate at a rate equal to the general rate of inflation through 2019 forecasted by the USDA.[5] NS asserts that this general rate of inflation is more consistent with projected farm income during the DCF period, and, thus, more reflective of future rural land values DuPont rejects NS's proposal because it fails to consider many important components that make up farmland value and ignores more current research that shows a delinking between farm land values and farm incomes. These components are discussed below.

For the first half of the twentieth century, agricultural economists believed that farm values and farm income were closely linked This belief extended from the belief that farmland values were derived from the expected stream of returns from the agricultural products produced However, as numerous studies have recently shown, the links between farm income and land values have dramatically declined. Current USDA research has found little correlation between land values and farm income [6] This lack of correlation is clearly evident in the Figure 1 below, which contains a graph of farmland values and farm income produced by the USDA.

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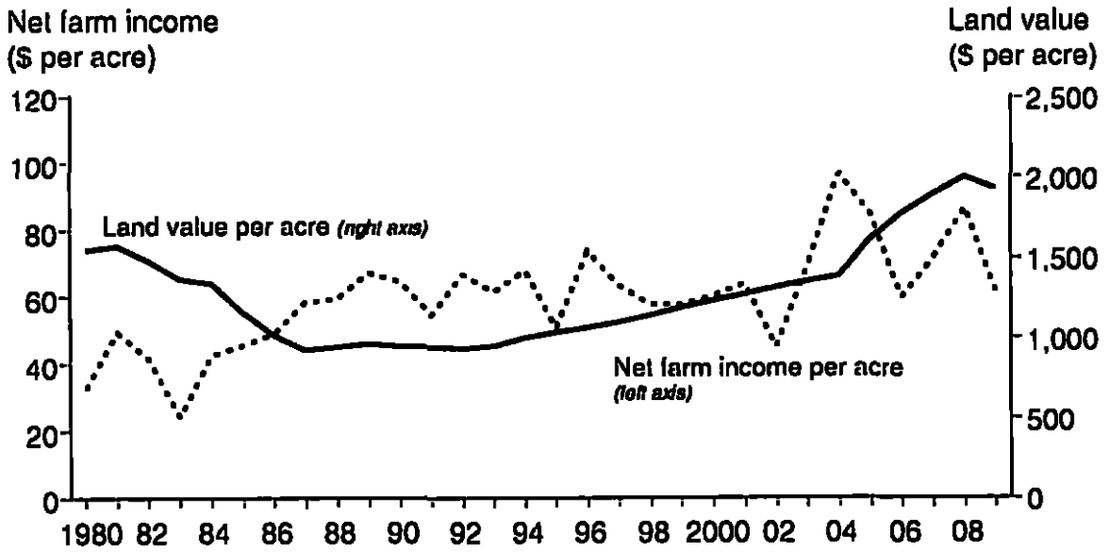
[4] *See* NS Reply e-workpaper "Inflation indices.docx," p. 1
[5] *Id*, p 4.
[6] *See* "Trends in U S Farmland Values and Ownership," USDA Economic Research Service. February 2012, p 5.

LAND INFLATION VALUES

Figure 1

Land values and farm sector net income, 1980-2009 (in 2005 $)



Source: USDA, ERS Farm Income Accounts data, available at http://www.ers.usda.gov/data/FarmIncome/Finfidmuxls.htm

As shown in Figure 1 above, in recent years there has been little correlation between land values and farm incomes.

Moreover, nonagricultural factors influence farmland value more now than they have historically. Factors, such as income from hunting leases and developers' potential returns from developing the farmland, make farmland more valuable even in the wake of declining farm incomes.[7] Research has shown that, in certain parts of the nation, including the state of Georgia, which includes significant amounts of DRR right of way, nonagricultural factors have a stronger influence on land values than cash rents from agricultural production [8]

NS also asserts that higher interest rates in the future will lead to lower future land values But, farmland markets tend to be extremely "thin," meaning less than approximately 0.5

[7] Cynthia Nickerson et al , *Farmland Values on the Rise· 2000-2010,* 10 USDA ERS (2012). http://www ers usda gov/amber-waves/2012-september/farmland-values.aspx# UVXdy2f0fdk.

[8] *Id,* p 7.

percent of farmland is sold each year, and sales are more often a result of the death or retirement of the farmer than changes in farmland affordability.[9] In fact, many farmers will not even sell when farmland is valuable and unaffordable. As a result, farms are not highly leveraged. Therefore, the effect of rising interest rates on farmland value would be minimal. In addition, the USDA projects that interest rates will remain low in the short to intermediate term and changes are likely to be gradual when they do increase in the long term. Historically, farmers have been slow to react to market changes; therefore, rising interest rates should not have an effect on farmland value during the DCF period

Finally, the lack of correlation between farmland value and farm income is most apparent when land value rises while farm income shrinks In 2005, farmland became more expensive despite farm income making it less affordable. Afterwards, farmland remained more expensive than farm income alone would have permitted it to be until 2008. Since the 1970s farmland has been more expensive than affordable more often than not[10] Clearly farm income is not the primary determinant of farmland value

Overall, NS's claim that, on average, future rural land values along the DRR will decline due to projected modest increases in exports versus the high increases experienced in the past, flat crop prices, increased production costs, and higher interest rates simply does not comport with current research. As summarized by the USDA:

> Yet, several macroeconomic measures indicate that over a longer horizon, farmland values are becoming less correlated with farm-related factors once thought to support those values Declining rent-to-value ratios indicate cash rents are increasingly smaller relative to farmland values, and the ratio is smallest for cropland close to urban areas. Also, the affordability of farmland has varied over

[9] *Id*
[10] *Id.*

> time While in 2009-2010 average income from farming has been more than sufficient to service farm real estate debt, during 2005-08 and during 1978-1985, this was not the case A lack of correlation with net farm incomes, declining rent-to-value ratios, and low levels of affordability all suggest that nonagricultural factors are increasingly important in determining farmland values.[11]

B. URBAN LAND VALUES

NS rejects DuPont's usage of the National Council of Real Estate Investment Fiduciaries ("NCREIF") commercial property index's average rate of appreciation as the average rate of return for DRR urban land. Instead, NS uses two transaction-based indices, Moody's Commercial Property Price Index ("MCPPI") and the CoStar Repeat Sale Indices ("CCRSI"), and a *MetroMonitor* article to support its claim that future land inflation will lag historic inflation Parallel to NS's conclusions about DRR rural land, NS concludes that it is reasonable to assume that the average annual rate of appreciation for DRR urban land will be equivalent to the USDA's forecasted general rate of inflation through 2019.[12] DuPont rejects NS's claim against the NCREIF index and proposal.

NS claims that the NCREIF index is not indicative of DRR urban land because the index: 1) focuses primarily on low risk, or "core," real estate; 2) has a different regional distribution than DRR urban land; and 3) is primarily made up of assets that are usually not located near railroads. Each claim is addressed below

First, NS asserts that the NCREIF index focuses on top-tier metropolitan areas. The assumption is based on the composition of the NCREIF index. The index consists of approximately 7,200 properties[13] that are owned by tax-exempt institutional investors, usually

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[11] *Id*, p 34.
[12] *See* NS Reply, p III.G-6
[13] According to NCREIF's *NCREIF Data and Products Guide*, the index included 7,276 properties in the 3rd Quarter of 2012

pension funds, which primarily invest in relatively low risk, or "core," real estate Core properties are usually located in top-tier metropolitan areas, where approximately 43 percent of DRR urban land value is located [14] However, NCREIF does not consider the index a "core" properties index, partially because a property's inclusion in the index is not based on its location. As a result, almost half of the properties included in the NCREIF index are not in top-tier metropolitan areas.[15]

Next, NS states that the regions where DRR urban land would be located are unrepresented by the NCREIF index. NS uses information from the University of Chicago,[16] instead of releases from NCREIF, which shows a low percentage of NCREIF market value in the Midwest and South, where more than 82 percent[17] of DRR urban real estate value would be. Contrary to NS's assertion about lack of representation, the NCREIF includes indexes for four distinct regions of the country including the South and the Midwest. Therefore, contrary to NS's claim, these regions are not unrepresented in the NCREIF index.[18]

Third, NS claims that the types of assets the index represents are not indicative of the DRR urban market. Again, NS uses data from the University of Chicago, which shows that more of the index's market value is in Class "A" and "B" offices, apartments and retail properties than industrial properties However, the University of Chicago's data does not show that the index includes more industrial properties than any other property type. In fact, for eight

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[14] *See* NS Reply, p III-G-6.

[15] Paul Fiorilla et al , *Size-Tiered Economic Geography: 2010 Update*, PREI (2010)

[16] *NS did not disclose what quarter or year the University of Chicago's data was reporting nor did they explain why they used the University's data instead of a NCREIF NPI Release*

[17] 45.38+36.57=81.95, therefore, almost 82 percent of DRR urban land value is located in these regions but not more than as NS claims.

[18] Not only was the Southern market represented in the NCREIF index, it was the top performing market in the *fourth quarter of 2012. NCREIF, NPI Press Release 4q12, January 25, 2013.*

consecutive quarters the index has been increasing the number of industrial properties it includes [19] Last quarter the index included 2,974 industrial properties followed by 1,514 apartments and 1,426 offices.[20] *In addition, the NCREIF index particularly focuses on industrial* properties in the Midwest and Atlanta, where over 45 percent of the urban land the DRR would purchase is located Pension funds invest in industrial properties in these regions because of the goods producing and trades oriented economies. Contrary to NS's claim, pension funds, such as those that make up the NCREIF index, do not prefer to invest in office properties in the Midwest where "offices represent the smallest portion of investments "[21]

Nevertheless, even if all of NS's claims were correct, which they are not, they would be irrelevant because there has not been much variance in market returns. Last quarter, NCREIF stated, "all property types and nearly all geographic regions report similar numbers."[22] Therefore, most markets included in the NCREIF index, which includes all of the DRR urban land markets, have approximately the same return.

To support its claim that DuPont's annual average rate of appreciation is too high, NS relies on short-term trends observed by two transaction-based subscription only indices, MCPPI and CCRSI DuPont rejects NS's use of these indices because NS does not use either index correctly nor is either index more indicative of DRR urban land than the NCREIF index

First, NS considers two transaction-based indices without considering an appraisal-based index, such as the NCREIF index. Transaction-based indices are solely based on the prices for which properties are sold, while appraisal-based indices are constructed from the valuation of

[19] NCREIF, *NCREIF-NAREIT Executive Summary Report Third Quarter 2012* (2012).
[20] NCREIF, *NPI Press Release 4q12, Supra*
[21] Fiorilla, *supra*
[22] NCREIF, *NPI Press Release 4q12, Supra.*

interval property appraisals. There are shortcomings to only considering transaction-based indices because they are only based on a sample of properties rather than census like appraisal-based indices. Due to this drawback, according to the creator of MCPPI, Massachusetts Institute of Technology ("MIT"), it is not appropriate to use transaction-based indices for benchmarking; however, it is appropriate to benchmark using an appraisal-based index.[23] Therefore, MIT instructs that transaction-based indices be used as a complement, not a substitute, for the NCREIF index.[24] Nevertheless, NS incorrectly fails to consider the NCREIF index or any other appraisal-based index.

Second, NS does not consider a wide enough timespan. NS uses the annual rate of appreciation reported in MCPPI and CCRSI for the period 2002 through 2011, and 2002 through March of 2012, respectively. By not considering longer term historical values, NS violates CoStar's intended use of CCRSI. CoStar criticizes the MCPPI for being based on only 10 years of historic data, saying that "the use of this index is limited by the lack of comprehensive data coverage."[25] Likewise, NS's consideration of 10 years of CCRSI data would also be considered limited by these standards. Even under normal circumstances, these are clearly not long enough periods upon which to base a forecast. However, to make matters worse, nearly half of the timespan NS considers was atypical because of the 2008 world financial crisis. Similar to all transaction-based indices, both indices were less reliable during the crisis because there were fewer transactions on which to base them. In comparison, the NCREIF index includes over 34 years of data. As reiterated by the STB in *AEPCO*, it is preferable to use a longer rather than a shorter period of historic data when forecasting future economic trends, such as an inflation rate

[23] David Geltner, *A Simplified Transaction Based Index (TBI) for NCREIF*, MIT (2011)
[24] *Id.*
[25] CoStar, *CoStar Commercial Repeat-Sale Indices Methodology*

for land values. NS's use of MCPPI and CCRSI is incorrect because NS does not consider the NCREIF index and a wide enough timespan.

Third, even if NS considered the NCREIF index, as MIT instructs users of MCPPI do, DuPont is dumbfounded by NS's usage of MCPPI because NS considers a draft of MCPPI rather than a finalized version of the index and the draft is less representative of the DRR urban land than the NCREIF index. In June 2012, when the release that NS cites was published, Moody's was releasing a draft of MCPPI that was made to replace the discontinued Moody's/REAL CPPI. In simple terms, NS relied on unfinished data NS also incorrectly claims that the perfunctory MCPPI that it did use is more indicative of DRR urban land.[26] However, the rate of return from the draft that NS considers does not include the Chicago area, where a significant amount of DRR urban land is located In addition, Moody's considers the index to be a "core" commercial property index [27] This is ironic because NS incorrectly criticizes the NCREIF for being just that.

Lastly, NS incorrectly uses information from *MetroMonitor* as evidence that DRR urban real estate will appreciate less quickly than DuPont proposes *MetroMonitor* is a subsection of the Brookings Institute that tracks the economy of the 100 largest metropolitan areas in the U.S. by tracking employment, output, and housing prices. Using this information, NS asserts that, during the DCF period, the majority of economic and real estate investment will be in dense, urban MSAs and suburban clusters, and not along urban areas along the DRR route, which tend to have less population density. DuPont rejects NS's claim about *MetroMonitor* because it reports on residential, not commercial, real estate Less residential real estate being bought in

[26] Contrary to NS's claim, MCPPI does not encompass 90 percent of transactions over $2 5 million because a property must be sold twice to be included in the index.

[27] Every property included in MCPPI, except apartments, is included in the Core Commercial Sub-Index of MCPPI.

LAND INFLATION VALUES

smaller urban communities does not indicate a slow rate of appreciation for the commercial real estate that makes up DRR urban land.

PART III-H

TAB 1

TABLE A: DRR ANNUAL COST OF CAPITAL

Year	Industry Cost of Capital	Industry Cost of Debt 1/	Industry Cost of Preferred Equity 2/	Industry Cost of Equity 3/	DRR 's Cost of Debt	DRR 's Cost of Preferred Equity	DRR 's Cost of Equity	Debt as a Percent of Total Investment	Preferred Equity as a Percent of Total Investment	Equity as a Percent of Total Investment	Composite Cost of Capital	1 + Cost of Capital	STB Prescribed Debt as a % of Capital 4/
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
2006	9 94%	5 97%	0 00%	11 13%	5.97%	0 00%	11 13%	23 05%	0 00%	76.95%	9.94%	1 0994	23 05%
2007	11 33%	6 15%	0.00%	12.68%	6 15%	0.00%	12 68%	20 68%	0 00%	79 32%	11 33%	1.1133	20 68%
2008	11.75%	6 57%	0 00%	13 17%	6.57%	0 00%	13 17%	21 54%	0 00%	78 46%	11 75%	1 1175	21.54%
2009	10 43%	5 72%	0.00%	12 37%	5.72%	0.00%	12 37%	29.10%	0 00%	70 90%	10 43%	1 1043	29 10%
2010	11.03%			12 99%	6 33%	0 00%	12 99%	22.12%	0 00%	77.88%	11.52%	1 1152	
2011	11 57%			13.57%	6 33%	0 00%	13 57%	22 12%	0.00%	77 88%	11 97%	1.1197	
2012					6 33%	0 00%	12 65%	22 12%	0 00%	77.88%	11 25%	1 1125	
2013					6 33%	0.00%	12.65%	22 12%	0.00%	77 88%	11 25%	1 1125	
2014					6 33%	0.00%	12 65%	22 12%	0 00%	77 88%	11 25%	1.1125	
2015					6 33%	0 00%	12.65%	22 12%	0 00%	77.88%	11 25%	1 1125	
2016					6 33%	0 00%	12 65%	22 12%	0 00%	77.88%	11.25%	1.1125	
2017					6 33%	0 00%	12 65%	22 12%	0 00%	77 88%	11 25%	1 1125	
2018					6.33%	0.00%	12 65%	22 12%	0 00%	77 88%	11.25%	1.1125	
2019					6 33%	0 00%	12 65%	22.12%	0 00%	77 88%	11.25%	1 1125	

1/ Cost of railroad industry debt from the STB Decision in Ex Parte No 558 (Sub-No. 10), Railroad Cost of Capital - 2006, decided April 14, 2008, STB Decision in Ex Parte No. 558 (Sub-No 11), Railroad Cost of Capital - 2007, decided September 24, 2008, STB Decision in Ex Parte No 558 (Sub-No 12), Railroad Cost of Capital - 2008, decided September 24, 2009, STB Decision in Ex Parte No 558 (Sub-No 13), Railroad Cost of Capital - 2009, decided October 28, 2010, STB Decision in Ex Parte No. 558 (Sub-No 15), Railroad Cost of Capital - 2011, decided September 13, 2012

2/ No preferred equity was issued in 2006 - 2010

3/ Cost of railroad industry cost of equity from the STB Decision in Ex Parte No 558 (Sub-No 10), Railroad Cost of Capital - 2006, decided April 14, 2008, STB Decision in Ex Parte No 558 (Sub-No 11),Railroad Cost of Capital - 2007, decided September 24, 2008, STB Decision in Ex Parte No 558 (Sub-No 12), Railroad Cost of Capital - 2008, decided September 24, 2009, STB Decision in Ex Parte No 558 (Sub-No 13), Railroad Cost of Capital - 2009, decided October 28, 2010, and STB Decision in Ex Parte No 558 (Sub-No 14), Railroad Cost of Capital - 2010, decided September 30, 2011, STB Decision in Ex Parte No 558 (Sub-No 15), Railroad Cost of Capital - 2011, decided September 13, 2012

4/ Capital structure from the STB Decision in Ex Parte No 558 (Sub-No 10), Railroad Cost of Capital - 2006, decided April 14, 2008, STB Decision in Ex Parte No. 558 (Sub-No. 11), Railroad Cost of Capital - 2007, decided September 24, 2008, STB Decision in Ex Parte No 558 (Sub-No 12), Railroad Cost of Capital - 2008, decided September 24, 2009, and STB Decision in Ex Parte No. 558 (Sub-No. 13), Railroad Cost of Capital - 2009, decided October 28, 2010

TABLE B: DRR INFLATION INDEXES

Period	Land 1/	Hybrid RCAF 2/	MW St xpnet 3/	Mat & Suppl 4/	Wages & Suppl 5/
(1)	(2)	(3)	(4)	(5)	(6)
4Q 2006	100.0		372 8	250 9	397.4
1Q 2007	102.7		381 7	256 9	407.0
2Q 2007	105.8		381 8	254 7	407.5
3Q 2007	108 7		387 7	265.2	412.3
4Q 2007	111.6		392.9	274.8	416.5
1Q 2008	113 1		397.6	276.2	421 9
2Q 2008	114 1		399.6	283 4	422.7
3Q 2008	114 9		410.0	285.6	434 9
4Q 2008	112.3		418 1	318 9	437 1
1Q 2009	109.0		423 9	319.5	444 1
2Q 2009	106.6	100.0	422.7	305.5	445.8
3Q 2009	105.0	110.3	425.8	312.5	448.0
4Q 2009	103 9	117 1	421 7	302 2	445 4
1Q 2010	104 2	122 1	451 4	311 2	479 7
2Q 2010	105 2	124.6	448.8	305.2	477.9
3Q 2010	106.7	125.5	448 1	304.5	477 1
4Q 2010	108.5	129 7	451 7	322.0	477.5
1Q 2011	110.3	128 4	453 9	314 7	481 9
2Q 2011	112 3	138 1	454 5	309 1	484 0
3Q 2011	114.3	141.5	460 7	329 4	486.8
4Q 2011	116.3	141.7	466.7	331.8	493.5
1Q 2012	118 4	137 1	466 4	331 4	493 2
2Q 2012	120.6	138 9	476.6	344.5	502 7
3Q 2012	122 7	137.2	477.5	346.6	503.3
4Q 2012	125 1	141 6	475.6	340.7	502 4
1Q 2013	127 1	141 1	475.0	337.3	501 4
2Q 2013	129 2	141.4	475 1	339.3	501 4
3Q 2013	131.3	140.9	480.5	341.7	507.9
4Q 2013	133 4	142 1	487.0	344 4	515.0
1Q 2014	135.6	142 5	492 4	347 5	521 2
2Q 2014	137.8	143 7	492.5	349.6	521 2
3Q 2014	140.0	143.8	498.2	352.8	527 5
4Q 2014	142.3	145 1	504.3	357.0	533 8
1Q 2015	144 6	145 4	509 2	359.3	539.0
2Q 2015	147 0	145.8	513 8	361.6	544 4
3Q 2015	149.4	146.2	518.5	363 9	549 7
4Q 2015	151 8	146.6	523.8	366.3	555 1
1Q 2016	154 3	148 0	527 8	368 2	559.5
2Q 2016	156.8	149 4	531 8	370.1	564.0
3Q 2016	159.4	150 7	535.9	372.0	568 4
4Q 2016	162.0	152 1	540 1	374.0	572 9
1Q 2017	164 7	153.3	544 4	376.5	577 9
2Q 2017	167.4	154.5	550.0	379.0	582.8
3Q 2017	170 1	155 7	554.3	381.5	587.9
4Q 2017	172 9	156.9	558 4	384.1	593.0
1Q 2018	175.8	158.2	563.6	387.0	598 4
2Q 2018	178 7	159 4	568.3	390.0	603.8
3Q 2018	181.6	160.7	573 1	393.0	609.3
4Q 2018	184.6	162.0	578 1	396.0	614 9
1Q 2019	187 7	163 1	583 4	398.9	620.5
2Q 2019	190.8	164.3	588 8	401 9	626.2
Annual Inflation Rate 6/	5.61%		3 26%	2 26%	3.41%

1/ Used to index Road Property Account 2. Based on hist.orie change in rural land prices as reported by the USDA and urban land prices as reported by the National Council of Real Estate Investment Fiduciaries

2/ Used to index expenses in Table K. Based on the RCAF-U and RCAF-A through 4Q12 then Global Insight forecast for remaining periods.

3/ Used to index Road Property Accounts 3, 5, 6, 13, 17, 19, 20, 26, 27, 37, and 39 Based on RCR indices - East Region through 4Q12 then Global Insight forecast.

4/ Used to index Road Property Accounts 8, 9, and 11 Based on RCR indexes - East Region through 4Q12 then Global Insight forecast for remaining periods.

5/ Used to index Road Property Accounts 1, 1A and 12 Based on RCR indexes - East Region through 4Q12 then Global Insight forecast for remaining periods

6/ [1Q2009 + 2Q2019]^(1/10.25) - 1 The Annual Rate is used to develop asset replacement values at the end of asset lives.

TABLE C: DRR PROPERTY INVESTMENT VALUES

Construction of the DRR occurs between December 1, 2006 and May 31 2009
Investments are assumed to be in June 2009 dollars

Property Account (1)	Property Component (2)	Service Life in Years 1/ (3)	Investment In 12/1/2006 Dollars 2/ (4)	Investment In 6/1/2007 Dollars 3/ (5)	Investment In 6/1/2008 Dollars 4/ (6)	Investment In 6/1/2009 Dollars 5/ (7)	2006 Investment Value 6/ (8)	2007 Investment Value 7/ (9)	2008 Investment Value 8/ (10)	2009 Investment Value 9/ (11)	Total Property Investment 2009 10/ (12)
1	Engineering	NA	$1,824,778,770	$1,871,155,885	$1,940,951,148	$2,047,021,580	$130,341,341	$1,603,817,902	$138,639,368	$0	$1,872,828,610
2	Land	NA	3,617,649,715	3,827,005,524	$4,126,820,216	$3,855,735,000	$0	$3,827,005,524	$0	$0	3,827,005,524
3	Grading	95	4,103,341,276	4,202,402,626	$4,398,323,964	$4,652,581,431	$0	$3,001,716,162	$1,256,663,990	$0	4,258,380,152
5	Tunnels	120	1,077,231,212	1,103,237,330	$1,154,671,653	$1,221,420,690	$0	$0	$1,058,449,015	$101,785,058	1,160,234,073
6	Bridges & Culverts	97	2,481,869,789	2,541,786,174	$2,660,287,467	$2,814,072,854	$0	$169,452,412	$2,128,229,974	$375,209,714	2,672,892,099
8	Ties	32	1,503,964,176	1,526,742,430	$1,698,778,189	$1,831,251,717	$0	$0	$1,415,648,491	$305,208,620	1,720,857,110
9	Rails and OTM	41	3,698,039,213	3,754,047,779	$4,177,059,837	$4,502,793,861	$0	$0	$3,480,883,197	$750,465,643	4,231,348,841
11	Ballast	39	1,043,991,096	1,059,802,839	$1,179,223,104	$1,271,180,869	$0	$0	$982,685,920	$211,863,478	1,194,549 398
12	Labor	38	1,486,510,061	1,524,290,010	$1,581,146,963	$1,667,554,568	$0	$0	$1,317,622,469	$277,925,761	1,595,548,230
13	Fences and Roadway Signs	95	16,243,164	16,635,300	$17,410,859	$18,417,343	$0	$0	$14,509,049	$3,069,557	17,578,606
17	Roadway Buildings	39	763,036,574	781,457,522	$817,890,062	$865,170,494	$0	$0	$817,890,062	$0	817,890,062
19	Fuel Stations	31	91,285,291	93,489,067	$97,847,646	$103,504,004	$0	$0	$97,847,646	$0	97,847,646
20	Shops and Enginehouses	50	185,620,564	190,101,717	$198,964,531	$210,466,235	$0	$0	$198,964,531	$0	198,964,531
26	Communications Systems	26	289,140,987	296,121,322	$309,926,874	$327,843,067	$0	$0	$154,963,437	$163,921,533	318,884,970
27	Signals and Interlockers	56	1,194,647,506	1,223,488,245	$1,280,528,818	$1,354,553,382	$0	$0	$640,264,409	$677,276,691	1,317,541,100
39	Public Improvements	38	160,603,959	164,481,201	$172,149,523	$182,101,109	$0	$0	$143,457,936	$30,350,185	173,808,120
	Total		$23,537,953,355	$24,176,245,001	$25,811,980,854	$26,925,668,202	$130,341,341	$8,602,021,999	$13,846,719,493	$2,897,076,240	$25,476,159,073

1/ 1 ÷ Depreciation Rate shown in Schedule 332 of NS' 2009 Annual Report R-1
2/ June 2009, indexed to 2006 dollars, 2Q09 Investment x Inflation Index from Table B, 4Q2006 ÷ 2Q2009
3/ June 2009, indexed to 2007 dollars, 2Q09 Investment x Inflation Index from Table B, 2Q2007 ÷ 2Q2009
4/ June 2009, indexed to 2008 dollars, 2Q09 Investment x Inflation Index from Table B, 2Q2008 ÷ 2Q2009
5/ June 2009, indexed to 2009 dollars, 2Q09 Investment x Inflation Index from Table B, 2Q2009 ÷ 2Q2009.
6/ Column (4) x Percent constructed in 2006
7/ Column (5) x Percent constructed in 2007.
8/ Column (6) x Percent constructed in 2008
9/ Column (7) x Percent constructed in 2009
10/ Sum of Columns (8) through (11).

TABLE D: INTEREST DURING CONSTRUCTION

Month of Installation (1)	Cost of Funds 1/ (2)	Timing of Account 1 Investment 2/ (3)	Timing of Account 2 Investment 2/ (4)	Timing of Accounts 3,5 and 6 Investment 2/ (5)	Timing of Accounts 8 Through 39 Investment 2/ (6)	Total Investment by Month 3/ (7)	Interest During Construction 4/ (8)	Cost of Debt 5/ (9)	Deductible Interest During Construction 6/ (10)
Dec-06	0.79%	$130,341,341	$0	$0	$0	$130,341,341	$0	0.48%	$0
Jan-07	0.90%	133,653,992		0	0	133,653,992	1,170,968	0.50%	149,797
Feb-07	0.90%	133,653,992		0	0	133,653,992	2,382,217	0.50%	304,747
Mar-07	0.90%	133,653,992		0	0	133,653,992	3,604,347	0.50%	461,089
Apr-07	0.90%	133,653,992	546,715,075	0	0	680,369,067	4,837,457	0.50%	618,835
May-07	0.90%	133,653,992	546,715,075	0	0	680,369,067	10,993,257	0.50%	1,406,320
Jun-07	0.90%	133,653,992	546,715,075	0	0	680,369,067	17,204,360	0.50%	1,974,585
Jul-07	0.90%	133,653,992	546,715,075	0	0	680,369,067	23,471,262	0.50%	2,693,853
Aug-07	0.90%	133,653,992	546,715,075	600,343,232	0	1,280,712,299	29,794,465	0.50%	3,419,582
Sep-07	0.90%	133,653,992	546,715,075	600,343,232	0	1,280,712,299	41,567,875	0.50%	4,770,844
Oct-07	0.90%	133,653,992	546,715,075	600,343,232	0	1,280,712,299	53,447,056	0.50%	6,134,246
Nov-07	0.90%	133,653,992	0	600,343,232	0	733,997,224	65,432,958	0.50%	7,509,896
Dec-07	0.90%	133,653,992	0	769,795,644	0	903,149,636	72,614,927	0.50%	8,334,188
Jan-08	0.93%	138,639,368	0	805,684,493		944,323,860	84,243,905	0.53%	9,960,258
Feb-08	0.93%	0	0	901,907,130	185,783,707	1,087,690,837	93,809,163	0.53%	11,091,170
Mar-08	0.93%	0	0	273,575,136	921,264,413	1,194,839,548	104,796,627	0.53%	12,390,231
Apr-08	0.93%	0	0	273,575,136	921,264,413	1,194,839,548	116,882,710	0.53%	13,819,183
May-08	0.93%	0	0	273,575,136	921,264,413	1,194,839,548	129,081,188	0.53%	15,261,424
Jun-08	0.93%	0	0	273,575,136	921,264,413	1,194,839,548	141,393,107	0.53%	17,112,275
Jul-08	0.93%	0	0	273,575,136	921,264,413	1,194,839,548	153,819,522	0.53%	18,942,563
Aug-08	0.93%	0	0	273,575,136	735,480,706	1,009,055,842	166,361,498	0.53%	20,487,081
Sep-08	0.93%	0	0	273,575,136	735,480,706	1,009,055,842	177,292,396	0.53%	21,833,199
Oct-08	0.93%	0	0	273,575,136	1,000,556,655	1,274,131,790	188,324,947	0.53%	23,191,836
Nov-08	0.93%	0	0	273,575,136	1,000,556,655	1,274,131,790	201,925,194	0.53%	24,866,679
Dec-08	0.93%	0	0	273,575,136	1,000,556,655	1,274,131,790	215,651,918	0.53%	26,557,097
Jan-09	0.83%	0	0	289,389,914	1,069,841,030	1,359,230,945	204,975,125	0.46%	24,698,108
Feb-09	0.83%	0	0	187,604,857	1,069,841,030	1,257,445,887	217,967,096	0.46%	26,263,514
Mar-09	0.83%	0	0	0	280,399,408	280,399,408	230,221,285	0.46%	27,740,058
Apr-09	0.83%	0	0	0	0	0	234,462,295	0.46%	28,251,070
May-09	0.83%	0	0	0	0	0	236,409,645	0.46%	28,485,712
Total		$1,872,828,610	$3,827,005,524	$8,091,506,323	$11,684,818,616	$25,476,159,073	$3,224,139,075		$389,029,441

1/ ((1 + Cost of Capital from Table A for the applicable year)^(1/12) - 1) x 100
2/ Applicable account value from Table C for the applicable investment period.
3/ Sum of Columns (3) through (6)
4/ January 2007 equals Column (2) x prior Column (7), all other periods equal Column (2) x ((Sum of Column (7) for all prior periods) + (Sum of Column (8) for all prior periods))
5/ ((1 + Cost of Debt from Table A for the applicable year)^(1/12) - 1) x 100
6/ January 2007 equals prior Column (7) x Column (9) x Table A, Column (9) for 2007, all other periods equal Column (9) x ((Sum of Column (7) for all prior periods) + (Sum of Column (8) for all prior periods)) x Table A, Column (9) for the applicable year

TABLE F. DRR INTEREST PAYMENTS FOR ASSETS PURCHASED WITH DEBT CAPITAL

INTEREST SCHEDULE FOR THE DRR 2006 ROAD PROPERTY INVESTMENT FOR THE 2Q2009 START-UP		INTEREST SCHEDULE FOR THE DRR 2007 ROAD PROPERTY INVESTMENT FOR THE 2Q2009 START-UP		INTEREST SCHEDULE FOR THE DRR 2008 ROAD PROPERTY INVESTMENT FOR THE 2Q2009 START-UP		INTEREST SCHEDULE FOR THE DRR 2009 ROAD PROPERTY INVESTMENT FOR THE 2Q2009 START-UP	
1. TOTAL INVESTMENT	$130,341,341 1/	1. TOTAL INVESTMENT	$8,602,021,999 1/	1. TOTAL INVESTMENT	$13,846,719,493 1/	1. TOTAL INVESTMENT	$2,897,076,240 1/
2. IDC	50 2/	2. IDC	$326,521,151 2/	2. IDC	$1 773,582,177 2/	2. IDC	$1,124,035,747 2/
3. PRINCIPAL	$30,043,679 3/	3. PRINCIPAL	$1,846,422,723 3/	3. PRINCIPAL	$3,364,612 980 3/	3. PRINCIPAL	$866,147,522 3/
4. INTEREST	5.97% 4/	4. INTEREST	6 15% 4/	4. INTEREST	6.57% 4/	4. INTEREST	5 72% 4/
5. TERM (QUARTERS)	80 5/	5. TERM (QUARTERS)	80 5/	5. TERM (QUARTERS)	80 5/	5. TERM (QUARTERS)	80 5/
6. QUARTERLY COUPON	$438,699 6/	6. QUARTERLY COUPON	$27,756,572 6/	6. QUARTERLY COUPON	$53,952,142 6/	6. QUARTERLY COUPON	$12,128,762 6/

Quarter (1)	Interest 7/ (2)	Quarter (3)	Interest 7/ (4)	Quarter (5)	Interest 7/ (6)	Quarter (7)	Interest 7/ (8)
1	$438,699	1	$27,756,572	1	$53,952,142	1	$12,128,762
2	438,699	2	27,756,572	2	53,952,142	2	$12,128,762
3	438,699	3	27,756,572	3	53,952,142	3	$12,128,762
4	438,699	4	27,756,572	4	53,952,142	4	$12,128 762
5	438,699	5	27,756,572	5	53,952,142	5	$12,128,762
6	438,699	6	27,756,572	6	53,952,142	6	$12,128,762
7	438,699	7	27,756,572	7	53,952,142	7	$12,128,762
8	438,699	8	27,756,572	8	53,952,142	8	$12,128,762
9	438,699	9	27,756,572	9	53,952,142	9	$12,128,762
10	438,699	10	27,756,572	10	53,952,142	10	$12,128,762
11	438,699	11	27,756,572	11	53,952,142	11	$12,128,762
12	438,699	12	27,756,572	12	53,952,142	12	$12,128,762
13	438,699	13	27,756,572	13	53,952,142	13	$12,128,762
14	438,699	14	27,756,572	14	53,952,142	14	$12,128,762
15	438,699	15	27,756,572	15	53,952,142	15	$12,128,762
16	438,699	16	27,756,572	16	53,952,142	16	$12,128,762
17	438,699	17	27,756,572	17	53,952,142	17	$12,128,762
18	438,699	18	27,756,572	18	53,952,142	18	$12,128,762
19	438,699	19	27,756,572	19	53,952,142	19	$12,128,762
20	438,699	20	27,756,572	20	53,952,142	20	$12,128,762
21	438,699	21	27,756,572	21	53,952,142	21	$12,128,762
22	438,699	22	27 756,572	22	53,952,142	22	$12,128,762
23	438,699	23	27,756,572	23	53,952,142	23	$12,128,762
24	438,699	24	27,756,572	24	53,952,142	24	$12,128,762
25	438,699	25	27,756,572	25	53,952,142	25	$12,128,762
26	438,699	26	27,756,572	26	53,952,142	26	$12,128,762
27	438,699	27	27,756,572	27	53,952,142	27	$12,128,762
28	438,699	28	27,756,572	28	53 952,142	28	$12,128,762
29	438,699	29	27,756,572	29	53,952,142	29	$12,128,762
30	438,699	30	27,756,572	30	53,952,142	30	$12,128,762
31	438,699	31	27,756,572	31	53,952,142	31	$12,128,762
32	438,699	32	27,756,572	32	53 952 142	32	$12,128,762
33	438,699	33	27,756,572	33	53,952,142	33	$12,128,762
34	438,699	34	27,756,572	34	53,952,142	34	$12,128,762
35	438,699	35	27,756,572	35	53,952,142	35	$12,128,762
36	438,699	36	27,756,572	36	53,952,142	36	$12,128,762
37	438,699	37	27,756,572	37	53,952,142	37	$12,128,762
38	438,699	38	27,756,572	38	53 952,142	38	$12,128,762
39	438,699	39	27,756,572	39	53,952,142	39	$12,128,762
40	438,699	40	27 756,572	40	53,952,142	40	$12 128,762

1/ From Table D, Column (7) for the applicable year investment
2/ From Table D, Column (8) for the applicable year investment
3/ (Total Investment - IDC) x (Proportion of Debt from Table A, Column (9)).
4/ From Table A, Column (6) for the applicable year investment.
5/ Based on Ex Parte No. 657 20-year payment period x 4
6/ {[(1 + Annual Interest Rate)$^{.25}$] -1} x Yearly Principal
7/ Less 6 coupon payment.

TABLE F. DRR INTEREST PAYMENTS FOR ASSETS PURCHASED WITH DEBT CAPITAL
(Continued)

INTEREST SCHEDULE FOR THE DRR 2006 ROAD PROPERTY INVESTMENT FOR THE 2Q2009 START-UP			INTEREST SCHEDULE FOR THE DRR 2007 ROAD PROPERTY INVESTMENT FOR THE 2Q2009 START-UP			INTEREST SCHEDULE FOR THE DRR 2008 ROAD PROPERTY INVESTMENT FOR THE 2Q2009 START-UP			INTEREST SCHEDULE FOR THE DRR 2009 ROAD PROPERTY INVESTMENT FOR THE 2Q2009 START UP		
1 TOTAL INVESTMENT	$130,341,341	1/	1. TOTAL INVESTMENT	$8,602,021,999	1/	1 TOTAL INVESTMENT	$13,846,719,493	1/	1. TOTAL INVESTMENT	$2,897,076,240	1/
2 IDC	$0	2/	2 IDC	$536,521,151	2/	2. IDC	$1,773,582,177	2/	2 IDC	$1,124,035,747	2/
3 PRINCIPAL	$30,043,679	3/	3 PRINCIPAL	$1,846,422,723	3/	3 PRINCIPAL	$3,364,612,980	3/	3 PRINCIPAL	$866,147,522	3/
4 INTEREST	5 97%	4/	4 INTEREST	6 15%	4/	4 INTEREST	6 57%	4/	4 INTEREST	5 72%	4/
5 TERM (QUARTERS)	80	5/	5 TERM (QUARTERS)	80	5/	5 TERM (QUARTERS)	80	5/	5 TERM (QUARTERS)	80	5/
6. QUARTERLY COUPON	$438,699	6/	6. QUARTERLY COUPON	$27,756,572	6/	6 QUARTERLY COUPON	$53,952,142	6/	6. QUARTERLY COUPON	$12,128,762	6/

Quarter (1)	Interest 7/ (2)	Quarter (3)	Interest 7/ (4)	Quarter (5)	Interest 7/ (6)	Quarter (7)	Interest 7/ (8)
41	$438,699	41	$27,756,572	41	$53,952,142	41	$12,128,762
42	438,699	42	27,756,572	42	$3,952,142	42	$12,128,762
43	438,699	43	27,756,572	43	$3,952,142	43	$12,128,762
44	438,699	44	27 756,572	44	$3,952,142	44	$12,128,762
45	438,699	45	27,756,572	45	$3,952,142	45	$12,128,762
46	438,699	46	27,756,572	46	$3,952,142	46	$12,128,762
47	438,699	47	27 756,572	47	$3,952,142	47	$12,128,762
48	438,699	48	27,756,572	48	$3,952,142	48	$12,128,762
49	438,699	49	27,756,572	49	$3,952,142	49	$12,128,762
50	438,699	50	27,756,572	50	$3,952,142	50	$12,128,762
51	438,699	51	27,756,572	51	$3,952,142	51	$12,128,762
52	438,699	52	27,756,572	52	$3,952,142	52	$12,128,762
53	438,699	53	27,756,572	53	$3,952,142	53	$12,128,762
54	438,699	54	27,756,572	54	$3,952,142	54	$12,128,762
55	438,699	55	27,756,572	55	$3,952,142	55	$12,128,762
56	438,699	56	27,756,572	56	$3,952 142	56	$12,128,762
57	438,699	57	27,756,572	57	$3,952,142	57	$12,128,762
58	438,699	58	27,756,572	58	$3,952,142	58	$12,128,762
59	438,699	59	27,756,572	59	$3,952,142	59	$12,128,762
60	438,699	60	27,756,572	60	$3,952,142	60	$12,128,762
61	438,699	61	27,756,572	61	$3,952,142	61	$12,128,762
62	438,699	62	27,756,572	62	$3,952,142	62	$12,128,762
63	438,699	63	27,756,572	63	$3,952,142	63	$12,128,762
64	438,699	64	27,756,572	64	$3,952,142	64	$12,128,762
65	438,699	65	27 756,572	65	$3,952,142	65	$12,128,762
66	438,699	66	27,756,572	66	$3,952,142	66	$12,128,762
67	438,699	67	27,756,572	67	$3,952,142	67	$12,128,762
68	438,699	68	27,756,572	68	$3,952,142	68	$12,128,762
69	438,699	69	27,756,572	69	$3,952,142	69	$12,128 762
70	438,699	70	27,756,572	70	$3,952,142	70	$12,128,762
71	438,699	71	27 756,572	71	$3,952,142	71	$12,128,762
72	438,699	72	27,756,572	72	$3,952,142	72	$12,128,762
73	438,699	73	27,756,572	73	$3,952,142	73	$12,128,762
74	438,699	74	27,756,572	74	$3,952,142	74	$12,128,762
75	438,699	75	27,756,572	75	$3,952,142	75	$12 128,762
76	438,699	76	27,756,572	76	$3,952,142	76	$12 128,762
77	438,699	77	27,756,572	77	$3,952,142	77	$12,128,762
78	438,699	78	27,756,572	78	$3 952,142	78	$12,128,762
79	438,699	79	27,756,572	79	$3,952,142	79	$12,128,762
80	438,699	80	27,756,572	80	$3,952,142	80	$12,128,762

1/ From Table D, Column (7) for the applicable year investment.
2/ From Table D, Column (8) for the applicable year investment.
3/ (Total Investment - IDC) x (Proportion of Debt from Table A, Column (9)).
4/ From Table A, Column (6) for the applicable year investment.
5/ Based on Ex Parte No. 657 20-year payment period x 4
6/ {[(1 + Annual Interest Rate)$^{.25}$]-1} x Yearly Principal
7/ Line 6 coupon payment.

TABLE F. DRR PRESENT VALUE OF REPLACEMENT COST

Property Account (1)	Property Component (2)	Service Life In Years 1/ (3)	Investment 2/ (4)	Salvage 3/ (5)	Replacement Year Asset Net Cost 4/ (6)	Replacement Cost Adjusted To Reflect An Infinite Life 5/ (7)	Present Value Of Replacement Cost Adjusted To Reflect An Infinite Life (2009 Dollars) 6/ (8)
3	Grading	95	$108,318,772,811	$0	$92,254,878,277	$92,455,300,571	$4,427,309
5	Tunnels	120	66,329,242,674	0	56,492,480,946	56,516,584,074	193,811
6	Bridges & Culverts	97	72,144,822,460	0	53,343,189,976	53,446,039,399	2,109,813
8	Ties	32	4,211,381,253	0	2,797,901,211	3,207,649,938	114,039,541
9	Rails and OTM	41	12,624,788,816	840,754,212	7,861,249,604	8,472,627,781	119,310,507
11	Ballast	39	3,427,102,831	0	2,276,852,791	2,476,962,927	41,891,876
12	Labor	38	6,926,715,489	0	4,601,878,693	5,025,945,519	91,205,666
13	Fences and Roadway Signs	95	447,140,229	0	330,611,198	331,329,446	15,866
16	Stations and Office Buildings	35	0	0	0	0	0
17	Roadway Buildings	39	3,431,697,983	0	2,537,364,584	2,760,370,820	46,685,040
19	Wastewater Treatment	31	319,536,017	0	236,261,867	272,700,841	10,429,289
20	Shops and Enginehouses	50	1,185,693,289	0	876,690,249	913,161,884	4,927,844
26	Communications Systems	26	881,130,749	0	585,393,875	719,936,760	47,435,253
27	Signals and Interlockers	56	9,573,224,543	282,539,737	6,196,837,853	6,367,653,291	18,021,357
39	Public Improvements	38	705,341,044	0	521,522,405	570,833,044	10,761,612
	Total		$290,526,590,187	$1,123,293,949	$230,913,113,529	$233,537,096,295	$511,454,784

1/ From Table C, Column (3)

2/ (Table C, Column (10) after allocation of Engineering) x (Table B, 1 0 − Annual Inflation Index)^(Column (3))

3/ [(Column (4) x Salvage %) - (Table C, Column (10) after allocation of Engineering x Salvage %)] x (1 - Current Federal Tax Rate) (Table C, Column (10) after allocation of Engineering x Salvage %)

4/ Column (4) - (Present Value of the remaining tax deductions for depreciation, interest expense and the Present Value of any salvage)

5/ Column (6) − [(Column (6) / ((1 + Real Cost of Capital)^Column (3) - 1)]

6/ Column (7) / ((1 − Average Nominal Cost of Capital from Table A Column (2))^Column (3))

TABLE G: DRR TAX DEPRECIATION SCHEDULES

Depreciation of Start-up investment for tax purposes using
accounting lives from Modified Accelerated Cost Recovery System (MACRS) 1/

Road Property Account (1)	Road Property Component (2)	Asset Lives Per MACRS 2/ (3)	Total 2Q 2009 Investment (4)	Depreciable Base (5)
1	Engineering	5	$1,872,828,610	$1,872,828,610
2	Land	N/A	3,827,005,524	0
3	Grading	50	4,258,380,152	4,258,380,152
5	Tunnels	50	1,160,234 073	1,160,231,073
6	Bridges & Culverts	15	2,672,892,099	2,672,892,099
8	Ties	7	1,720,857,110	1,720,857,110
9	Rails and OTM	7	4,231,348,841	4,231,348,841
11	Ballast	7	1,194,549,398	1,194,549,398
12	Labor	7	1,595,548,230	1,595,548,230
13	Fences and Roadway Signs	15	17,578,606	17,578,606
16	Stations and Office Buildings	15	0	0
17	Roadway Buildings	15	817,890,062	817,890,062
19	Fuel Stations	15	97,847,646	97,847,646
20	Shops and Enginehouses	15	198,964,531	198,964,531
26	Communications Systems	7	318,884,970	318,884,970
27	Signals and Interlockers	7	1,317,541,100	1,317,541,100
39	Public Improvements	15	173,808,120	173,808,120
	Total		$25,476,159,073	$21,649,153,549

1/ Applicable Depreciation Method 200 or 150 percent
Declining Balance Switching to Straight Line
Applicable Recovery Periods 7, 15 and 50 a/ years
Applicable Convention Mid-quarter(property placed in service in second quarter)

The Depreciation Rates are as follows for the corresponding
Recovery Period and Recovery year

Recovery Year	5-Year	7-year	15-year	50-year
1	20 00%	17 85%	6 250%	2 00%
2	20 00%	23 47%	9 380%	2 00%
3	20 00%	16 76%	8 440%	2.00%
4	20 00%	11 97%	7 590%	2 00%
5	20 00%	8 87%	6 830%	2 00%
6		8 87%	6 150%	2 00%
7		8 87%	5 910%	2 00%
8		3 34%	5 90%	2 00%
9		0 00%	5 910%	2 00%

Recovery Year	7-year	15-year	50-year
10	0 00%	5 900%	2 00%
11	0 00%	5 910%	2 00%
12	0 00%	5 900%	2 00%
13	0 00%	5 910%	2 00%
14	0 00%	5 900%	2 00%
15	0 00%	5 910%	2 00%
16	0 00%	2 460%	2 00%
17	0 00%	0 000%	2 00%
18	0 00%	0 000%	2 00%
19-50	0 00%	0 000%	2 00%

a/ 50 year property uses the Straight Line Method for all time periods

2/ Bonus Depreciation Per the Economic Stimulus Act of 2008, and the American Recovery & Reinvestment Act for the following depreciable assets

MACRS Lives (1)	Bonus Depreciation (2)
7	$5,189,364,825
15	$1,901,764,327

TABLE G. DRR TAX DEPRECIATION SCHEDULES
(Continued)

	Amortization - 5 Years			Road Property Depreciation - MACRS 7 Years			Depreciation - MACRS 15 Years			Depreciation - MACRS 50 Years			
Year	Unamortized Investment 1/	Rate 2/	Annual Amort. 3/	Undepreciated Investment 4/	Rate 2/	Annual Amount 5/	Undepreciated Investment 6/	Rate 2/	Annual Amount 7/	Unamortized Investment 8/	Rate 2/	Annual Amount 9/	Total Annual Depreciation 10/
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1	$1,872,828,610	20 00%	$374,565,722	$5,189,364,825	17 85%	$926,301,621	$2,074,216,738	6 25%	$129,638,546	$5,418,614,224	2%	$108,372,284	$8,633,007,326
2	1,498,262,888	20 00%	374,565,722	4,263,063,204	23 47%	1,217,943,924	1,944,578,192	9.38%	194,561 530	5,310,241,940	2%	108,372,284	1,895,443,461
3	1,123,697,166	20 00%	374,565,722	3,045,119,279	16 76%	869,737,545	1,750,016,662	8 44%	175,063,893	5,201,869,655	2%	108,372,284	1,527,739,444
4	749,131,444	20 00%	374,565,722	2,175,381,735	11 97%	621,166,970	1,574,952,769	7 59%	157,433,050	5,093,497,371	2%	108,372,284	1,261,538,026
5	374,565,722	20.00%	374,565,722	1,554,214,765	8 87%	460,296,660	1 417,519,719	6 83%	141,669,003	4,985,125,086	2%	108,372,284	1,084,903,670
6				1,093,918,105	8.87%	460,296,660	1,275,850,716	6 15%	127,564,329	4,876,752,802	2%	108,372,284	696 233,274
7				633,621,445	8 87%	460,296,660	1.148,286,386	5 91%	122,586,209	4,768,380,517	2%	108,372,284	691,255,154
8				173,324,785	3 34%	173,324,785	1,025,700,177	5 90%	122,378,788	4,660,008,233	2%	108,372,284	404,075,857
9							903,321,390	5 91%	122,586 209	4,551,635,948	2%	108,372,284	230,958,494
10					100 00%		780,735,180	5 90%	122,378,788	4,443,263,664	2%	108,372,284	230,751,072
11							658,356,393	5.91%	122,586,209	4,334,891,379	2%	108,372,284	230,958,494
12							535,770,184	5.90%	122,378,788	1,226,519,095	2%	108,372,284	230,751,072
13							413,391,396	5.91%	122,586,209	4,118,146,810	2%	108,372,284	230,958,494
14							290,805,187	5.90%	122,378,788	4,009,774,526	2%	108,372,284	230,751,072
15							168,426,399	5 91%	122,586,209	3,901,402,242	2%	108,372,284	230,958,494
16							45,810,190	2 21%	45,840,190	3,793,029,957	2%	108,372,284	154,212,471
17										3,684,657,673	2%	108,372,284	108,372,284
18								100 00%		3,576,285,388	2%	108,372,281	108,372,284
19										3,467,913,104	2%	108,372,284	108,372,284
20										3,359,540,819	2%	108,372,284	108,372,284
21										3,251,168,535	2%	108,372,284	108,372,284

1/ From Table G, Page 8, Column (5), Road Property Accounts 1
2/ From Table G, Footnote 1/, Page 8
3/ Column (2), Year 1 x Column (3).
4/ From Table G, Page 8 Column (5), Road Property Accounts 8, 9, 11, 12, 26 and 27 minus Page 10 7-Year Bonus Depreciation
5/ Column (5), Year 1 x Column (6)
6/ From Table G, Page 8 Column (5), Road Property Accounts 6, 13 16, 17, 19, 20 and 39 minus Page 8 15-Year Bonus Depreciation
7/ Column (8), Year 1 x Column (9)
8/ From Table G Page 8, Column (5), Road Property Accounts 3 and 5.
9/ Column (11), Year 1 x Column (12)
10/ Column (4) Column (7) + Column (10) - Column (13) plus Page 8, 7 & 15 Year Bonus Depreciation

TABLE H: DRR AVERAGE ANNUAL INFLATION IN ASSET PRICES

Development of average annual inflation factors for all capital assets

1.	2Q2009 Land value	$3,827,005,524 1/
2	2Q2009 Property asset value accounts 3, 5, 6, 13, 17, 26, 27, 39 and 52	$11,034,021,360 1/
3	2Q2009 Road Property asset value accounts 8, 9, and 11	$7,146,755,349 1/
4	2Q2009 Road Property asset value accounts 1 and 12	$3,468,376,840 1/

Period	Quarter	Inflation Index For Land 2/	Inflation Index For Line 2 Property Assets 3/	Inflation Index For Line 3 Road Property Assets 4/	Inflation Index For Line 4 Road Property Assets 5/	Land Value 6/	Road Property Value 7/	2Q2009 Inflation Index 8/
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
0		1 000	1 000	1 000	1 000	$3,827,005,524	$21,649,153,549	1.000
1	June 1-June 30 09	0 977	0 997	0 956	1 004	3,740,874,370	21,318,034,792	0 984
2	2009 3 Qtr	0.963	1.004	0.978	1.009	3,685,628,521	21,572,488,803	0 991
3	2009 4 Qtr	0.953	0.995	0 946	1.003	3,647,298,315	21,215,064,805	0 976
4	2010 1 Qtr	0 956	1.065	0 974	1.080	3,657,737,206	22,457,345,746	1.025
5	2010 2 Qtr	0.965	1.059	0 955	1.076	3,694,086,528	22,241,399,143	1 018
6	2010 3 Qtr	0 979	1 057	0 953	1 074	3,746,578,417	22,201,272,388	1 019
7	2010 4 Qtr	0 995	1 066	1 008	1.075	3,807,528,652	22,689,553,359	1 040
8	2011 1 Qtr	1 012	1.071	0 985	1.085	3,871,784,485	22,617,891,928	1 040
9	2011 2 Qtr	1 030	1 072	0 967	1 090	3,943,107,037	22,524,646,640	1.039
10	2011 3 Qtr	1 049	1 087	1 031	1 096	4,012,763,135	23,161,980,758	1 067
11	2011 4 Qtr	1 067	1 101	1 038	1 111	4,083,374,383	23,424,170,285	1 080
12	2012 1 Qtr	1 086	1 100	1 037	1 111	4,157,200,892	23,405,070,958	1 082
13	2012 2 Qtr	1.106	1.124	1 078	1.132	4,232,712,064	24,037,796,866	1 110
14	2012 3 Qtr	1 126	1 126	1 085	1 133	4,308,241,613	24,112,883,582	1.116
15	2012 4 Qtr	1.147	1 122	1 066	1 131	4,390,470,278	23,924,423,588	1.111
16	2013 1 Qtr	1.166	1 121	1 056	1 129	4,461,540,545	23,825,772,046	1 110
17	2013 2 Qtr	1 185	1 121	1 062	1 129	4,533,825,535	23,873,262,515	1 115
18	2013 3 Qtr	1.204	1 134	1 069	1 144	4,607,347,184	24,117,710,948	1.128
19	2013 4 Qtr	1.223	1.149	1 078	1 160	4,682,127,841	24,404,083,400	1.142
20	2014 1 Qtr	1 243	1 162	1 088	1 174	4,758,190,285	24,662,066,795	1.155

1/ Table C, Page 3, Column (12).
2/ Previous Column (3) x (1 + Quarterly Inflation Rate Change from Table B).
3/ Previous Column (4) x (1 + Quarterly Inflation Rate Change from Table B)
4/ Previous Column (5) x (1 + Quarterly Inflation Rate Change from Table B)
5/ Previous Column (6) x (1 + Quarterly Inflation Rate Change from Table B)
6/ Line 1 x Column (3) for applicable quarter
7/ (Line 2 x Column (4) for applicable quarter) - (Line 3 x Column (5) for applicable quarter) - (Line 4 x Column (6) for applicable quarter)
8/ (Column (7) - Column (8)) + (Period 0, (Column (7) - Column (8))).
9/ Annual weighted inflation using the last two quarters, used to calculate real cost of capital

TABLE H: DRR AVERAGE ANNUAL INFLATION IN ASSET PRICES
(Continued)

Development of average annual inflation factors for all capital assets

1.	2Q2009 Land value	$3,827,005,524 1/
2.	2Q2009 Property asset value accounts 3, 5, 6, 13, 17, 26, 27, 39 and 52	$11,034,021,360 1/
3	2Q2009 Road Property asset value accounts 8, 9, and 11	$7,146,755,349 1/
4.	2Q2009 Road Property asset value accounts 1 and 12	$3,468,376,840 1/

Period	Quarter	Inflation Index For Land 2/	Inflation Index For Line 2 Property Assets 3/	Inflation Index For Line 3 Road Property Assets 4/	Inflation Index For Line 4 Road Property Assets 5/	Land Value 6/	Road Property Value 7/	2Q2009 Inflation Index 8/
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
21	2014 2 Qtr	1 264	1 162	1 094	1 174	$4,835,557,726	$24,710,196,792	1 160
22	2014 3 Qtr	1.284	1 175	1 104	1 188	4,914,253,818	24,977,970,338	1.173
23	2014 4 Qtr	1.305	1.190	1 117	1 202	4,994,302,666	25,280,243,585	1.188
24	2015 1 Qtr	1.326	1 201	1 125	1 214	5,075,728,835	25,501,055,967	1 200
25	2015 2 Qtr	1.348	1 212	1 132	1 226	5,158,557,361	25,714,144,395	1 212
26	2015 3 Qtr	1 370	1 223	1 139	1 238	5,242,813,759	25,930,903,646	1 224
27	2015 4 Qtr	1 392	1.236	1.146	1.250	5,328,524,032	26,162,353,067	1 236
28	2016 1 Qtr	1 415	1 245	1 152	1.260	5,415,714,681	26,343,190,771	1.247
29	2016 2 Qtr	1 438	1 255	1.158	1 270	5,504,412,718	26,525,316,214	1 257
30	2016 3 Qtr	1 462	1 264	1.164	1 280	5,594,645,671	26,711,417,747	1 268
31	2016 4 Qtr	1 486	1 274	1.170	1.290	5,686,441,598	26,897,488,148	1 279
32	2017 1 Qtr	1 510	1.284	1.178	1.301	5,779,829,099	27,104,619,778	1 291
33	2017 2 Qtr	1 535	1 297	1 186	1 312	5,874,837,321	27,344,355,656	1 304
34	2017 3 Qtr	1 560	1 308	1.194	1 324	5,971,495,976	27,553,072,411	1 316
35	2017 4 Qtr	1 586	1 317	1 202	1 335	6,069,835,347	27,757,573,028	1 328
36	2018 1 Qtr	1 612	1 330	1 211	1 347	6,169,886,303	27,999,786,494	1 341
37	2018 2 Qtr	1.639	1.341	1.221	1.360	6,271,680,309	28,231,703,903	1.354
38	2018 3 Qtr	1 666	1.352	1.230	1.372	6,375,249,439	28,465,158,202	1.368
39	2018 4 Qtr	1 693	1 364	1 239	1 385	6,480,626,387	28,708,584,662	1 381
40	2019 1 Qtr	1 721	1 376	1 249	1 397	6,587,844,481	28,955,314,269	1 395
41	April 1-May 31 '19	1 750	1 389	1 258	1 410	6,696,937,695	29,206,177,212	1 409
Annual Average 9/								4 08%

1/ Table C, Page 3, Column (12)
2/ Previous Column (3) x (1 + Quarterly Inflation Rate Change from Table B).
3/ Previous Column (4) x (1 + Quarterly Inflation Rate Change from Table B).
4/ Previous Column (5) x (1 + Quarterly Inflation Rate Change from Table B).
5/ Previous Column (6) x (1 + Quarterly Inflation Rate Change from Table B).
6/ Line 1 x Column (3) for applicable quarter.
7/ (Line 2 x Column (4) for applicable quarter) + (Line 3 x Column (5)for applicable quarter) + (Line 4 x Column (6) for applicable quarter)
8/ (Column (7) ÷ Column (8)) ÷ (Period 0, (Column (7) ÷ Column (8))).
9/ Annual weighted inflation using the last two quarters, used to calculate real cost of capital

TABLE I. DRR DISCOUNTED CASH FLOW
(Road Property)

Discounted Cash Flow
Present Value of the Cash Flow Discounted at the Cost of Capital in Table A
Inflation In Asset Values From Table H

1. 2Q2009 Road Property Investment	$25,522,957,504 1/		
2 Interest During Construction (2Q2009 Invest)	$3,224,139,075 2/		
3. Total 2Q2009 Investment	$28,747,096,579 3/	Federal Tax Rate	35.0%
4 Present Value Of Replacement Cost for the DRR	$511,454,784 4/	Route Mile Weighted Average State Tax Rate	6 5% 6/
5. Total Cost Recovered From Quarterly Revenue Flow	$29,258,551,363 5/		

Period (1)	Quarter (2)	Quarterly Levelized Capital Carrying Charge Requirement 7/ (3)	Interest on Investment Financed With Debt 8/ (4)	Tax Depreciation 9/ (5)	Actual Federal Tax Payments 10/ (6)	Actual State Tax Payments 11/ (7)	Cash Flow 12/ (8)	Present Value Cash Flow 13/ (9)	Cumulative Present Value 14/ (10)
1	June 1 to June 30	$91,084,270	$31,080,058	$1,210,234,672	$0	$0	$91,084,270	$89,961,174	$89,961,174
2	2009 3 Qtr	654,899,584	94,276,176	3,711,386,327	0	0	654,899,584	629,435,894	719,397,067
3	2009 4 Qtr	644,638,358	94,276,176	3,711,386,327	0	0	644,638,358	602,917,642	1,322,314,709
4	2010 1 Qtr	677,119,231	94,276,176	473,860,865	0	0	677,119,231	616,271,459	1,938,586,168
5	2010 2 Qtr	672,462,582	94,276,176	473,860,865	0	0	672,462,582	595,579,977	2,534,166,145
6	2010 3 Qtr	672,783,188	94,276,176	473,860,865	0	0	672,783,188	579,552,386	3,113,718,531
7	2010 4 Qtr	687,023,810	94,276,176	473,860,865	0	0	687,023,810	575,327,989	3,689,046,520
8	2011 1 Qtr	686,831,796	94,276,176	381,934,861	0	0	686,831,796	559,139,602	4,248,186,121
9	2011 2 Qtr	686,263,377	94,276,176	381,934,861	0	0	686,263,377	543,108,789	4,791,294,910
10	2011 3 Qtr	704,594,418	94,276,176	381,934,861	0	0	704,594,418	542,511,858	5,333,806,768
11	2011 4 Qtr	713,223,371	94,276,176	381,934,861	0	0	713,223,371	534,709,025	5,868,515,793
12	2012 1 Qtr	714,642,352	94,276,176	315,384,507	0	0	714,642,352	521,678,106	6,390,193,900
13	2012 2 Qtr	733,005,723	94,276,176	315,384,507	0	0	733,005,723	521,006,495	6,911,200,395
14	2012 3 Qtr	736,910,944	94,276,176	315,384,507	0	0	736,910,944	510,002,952	7,421,203,347
15	2012 4 Qtr	734,156,548	94,276,176	315,384,507	0	0	734,156,548	494,730,029	7,915,933,376
16	2013 1 Qtr	733,441,413	94,276,176	271,225,917	0	0	733,441,413	481,245,781	8,397,179,157
17	2013 2 Qtr	736,546,985	94,276,176	271,225,917	0	0	736,546,985	470,569,608	8,867,748,765
18	2013 3 Qtr	744,791,403	94,276,176	271,225,917	0	0	744,791,403	463,318,866	9,331,067,631
19	2013 4 Qtr	754,155,482	94,276,176	271,225,917	0	0	754,155,482	456,802 145	9,787,869,776
20	2014 1 Qtr	762,816,717	94,276,176	174,058,318	0	0	762,816,717	449,893,124	10,237,762,899
21	2014 2 Qtr	766,070,650	94,276,176	174,058,318	0	0	766,070,650	439,926,262	10,677,689,162
22	2014 3 Qtr	775,054,012	94,276,176	174,058,318	0	0	775,054,012	433,376,089	11,111,065,250
23	2014 4 Qtr	784,966,967	94,276,176	174,058,318	0	0	784,966,967	427,372,201	11,538,437,452
24	2015 1 Qtr	792,803,494	94,276,176	172,813,788	0	0	792,803,494	420,283,515	11,958,720,966
25	2015 2 Qtr	800,476,112	94,276,176	172,813,788	0	0	800,476,112	413,187,417	12,371,908,384

TABLE J. DRR DISCOUNTED CASH FLOW
(Road Property Continued)

Period	Quarter	Quarterly Levelized Capital Carrying Charge Requirement 7/	Interest on Investment Financed With Debt 8/	Tax Depreciation 9/	Actual Federal Tax Payments 10/	Actual State Tax Payments 11/	Cash Flow 12/	Present Value Cash Flow 13/	Cumulative Present Value 14/
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
26	2015 3 Qtr	$808,280,930	$94,276,176	$172,813,788	$0	$0	$808,280,930	$406,240,255	$12,778,148,639
27	2015 4 Qtr	816,504,336	94,276,176	172,813,788	138,743,183	27,728,527	650,032,626	318,110,270	13,096,258,908
28	2016 1 Qtr	823,453,851	94,276,176	101,018,964	205,482,217	41,066,661	576,904,973	274,896,195	13,371,155,104
29	2016 2 Qtr	830,475,839	94,276,176	101,018,964	207,779,238	41,525,732	581,170,868	269,643,649	13,640,798,752
30	2016 3 Qtr	837,640,717	94,276,176	101,018,964	210,123,001	41,994,145	585,523,571	264,516,430	13,905,315,182
31	2016 4 Qtr	844,845,314	94,276,176	101,018,964	212,479,756	42,465,155	589,900,403	259,482,978	14,164,798,161
32	2017 1 Qtr	852,637,258	94,276,176	57,739,623	229,186,109	45,804,004	577,647,145	247,408,562	14,412,206,722
33	2017 2 Qtr	861,316,598	94,276,176	57,739,623	232,025,280	46,371,426	582,919,891	243,098,836	14,655,305,559
34	2017 3 Qtr	869,234,457	94,276,176	57,739,623	234,615,357	46,889,066	587,730,034	238,656,793	14,893,962,352
35	2017 4 Qtr	877,086,578	94,276,176	57,739,623	237,183,929	47,402,409	592,500,240	234,264,434	15,128,226,786
36	2018 1 Qtr	885,960,906	94,276,176	57,687,768	240,103,848	47,985,969	597,871,090	230,169,245	15,358,396,031
37	2018 2 Qtr	894,613,470	94,276,176	57,687,768	242,934,260	48,551,641	603,127,569	226,084,522	15,584,480,553
38	2018 3 Qtr	903,351,908	94,276,176	57,687,768	245,792,763	49,122,927	608,436,218	222,074,463	15,806,555,016
39	2018 4 Qtr	912,395,781	94,276,176	57,687,768	248,751,179	49,714,182	613,930,420	218,184,868	16,024,739,885
40	2019 1 Qtr	921,573,037	94,276,176	57,739,623	251,736,265	50,310,766	619,526,006	214,381,314	16,239,121,198
41	April 1-May 31 '19	624,013,967	63,196,118	38,704,583	170,792,811	34,133,807	419,087,349	143,101,074	16,382,222,272
	Future	57,349,256,885	5,807,963,607	1,503,655,908	16,368,227,497	3,271,273,093	37,709,756,294	12,876,329,091	29,258,551,363

1/ From Table C, Column (12) – Maintenance of Way Capital Costs
2/ From Table D, Column (8)
3/ Line 1 + Line 2
4/ Table F Column (8)
5/ Line 3 – Line 4
6/ DRR route mile weighted average state tax rates for the DRR states.
7/ Carrying costs needed to recover the total investment over 1 month, 39 quarters and 2 months after consideration of the applicable interest payments, tax depreciation and tax liability. The Future value is an estimate of a perpetual income stream for the DRR and is calculated by taking the Period 41, Column (3) value and dividing it by the DRR 's estimated quarterly Real Cost of Capital
8/ Value from Table E, except for Future. Future equals Period 40, Column (4) value and dividing it by the DRR 's estimated quarterly Real Cost of Capital.
9/ Value from Table G, Page 9, Column (14) divided by 4 quarters
10/ Table J Part 1 Page 14 of 18.
11/ Table J Part 2 Page 15 of 18.
12/ (Column (3) - Column (6) - Column (7)).
13/ Column (8) discounted by the fourth root of the annual Cost of Capital adjusted to midquarter dollars from Table A
14/ Cumulauve total of Column (9).

TABLE J - PART 1 COMPUTATION OF FEDERAL TAX LIABILITY - TAXABLE INCOME
(Road Property)

Time Period	Taxable Income B/4 NOL's DRR 1/	Net Operating Losses Generated 2/	NOL's Generated Plus Carryforward 3/	Carryforward Utilized 4/	Carryforward Remaining 5/	Carryback Available 6/	Carryback Utilized 7/	Carryback Remaining 8/	Annual Taxable Income 9/	Annual Tax Liability 10/
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
2007	($37,777,982)	($37,777,982)	($37,777,982)	$0	($37,777,982)	($37,777,982)	$0	($37 777 982)	$0	$0
2008	(215,812 996)	(215,812,996)	(253,590,978)	0	(253,590,978)	(253,590 978)	0	(253,590,978)	0	0
Jan 1-May 31 09	(135,438,463)	(135,438,463)	(389,029,441)	0	(389,029,441)	(389,029,441)	0	(389,029,441)	0	0
June 1-June 30 09	(1 150,230,460)	(1,150,230,460)	(1,539,259,901)	0	(1,539,259,901)	(1,539,259,901)	0	(1,539,259,901)	0	0
2009 3 Qtr	(3,150,762 919)	(3,150,762,919)	(4,690,022,819)	0	(4,690,022,819)	(4 690,022 819)	0	(4 690,022,819)	0	0
2009 4 Qtr	(3 161,024,145)	(3,161,024,145)	(7,851,046,964)	0	(7 851,046,964)	(7,851,046,964)	0	(7,851,046,964)	0	0
2010 1 Qtr	108,982.189	0	(7,851,046,964)	108,982,189	(7 742,064 775)	(7,742,064 775)	0	(7,742,064,775)	0	0
2010 2 Qtr	104,325,540	0	(7,742,064,775)	104,325,540	(7 637,739,234)	(7,637,739 234)	0	(7,637,739,234)	0	0
2010 3 Qtr	104,646,147	0	(7,637,739,234)	104,646,147	(7,533,093,087)	(7,533,093,087)	0	(7 533,093,087)	0	0
2010 4 Qtr	118 886,769	0	(7,533,093,087)	118,886,769	(7,414,206,319)	(7,414,206,319)	0	(7 414,206,319)	0	0
2011 1 Qtr	210,620 758	0	(7 414,206,319)	210,620,758	(7,203,585,560)	(7,203,585,560)	0	(7,203,585 560)	0	0
2011 2 Qtr	210 052,340	0	(7 203,585,560)	210,052,340	(6,993,533,221)	(6,993,533,221)	0	(6,993,533 221)	0	0
2011 3 Qtr	228,383,381	0	(6,993,533,221)	228,383,381	(6,765,149,840)	(6,765,149,840)	0	(6,765 149 840)	0	0
2011 4 Qtr	237,012,333	0	(6,765,149,840)	237,012,333	(6,528,137,506)	(6,528,137,506)	0	(6,528 137 506)	0	0
2012 1 Qtr	304 981,670	0	(6,528,137,506)	304,981,670	(6,223,155,837)	(6,223,155,837)	0	(6,223,155 837)	0	0
2012 2 Qtr	323,345,040	0	(6,223 155,837)	323,345,040	(5,899,810,796)	(5,899,810,796)	0	(5 899,810,796)	0	0
2012 3 Qtr	327,250,261	0	(5 899 810,796)	327 250,261	(5,572,560,535)	(5,572,560,535)	0	(5,572,560,535)	0	0
2012 4 Qtr	324 495 865	0	(5,572,560,535)	324,495,865	(5,248,064,670)	(5,248,064,670)	0	(5,248,064,670)	0	0
2013 1 Qtr	367,939 319	0	(5,248,064 670)	367,939,319	(4,880,125,351)	(4,880,125,351)	0	(4,880,125,351)	0	0
2013 2 Qtr	371,044,891	0	(4,880 125 351)	371,044,891	(4,509,080,459)	(4,509,080,459)	0	(4,509,080,459)	0	0
2013 3 Qtr	379,289,309	0	(4 509,080,459)	379,289,309	(4,129,791,150)	(4,129,791,150)	0	(4,129 791,150)	0	0
2013 4 Qtr	388,653,389	0	(4 129 791 150)	388,653,389	(3,741,137,761)	(3,741,137,761)	0	(3,741 137,761)	0	0
2014 1 Qtr	494 482,222	0	(3 741 137 761)	494,482,222	(3,246,655,539)	(3,246,655,539)	0	(3,246,655,539)	0	0
2014 2 Qtr	497,736,155	0	(3 246,655,539)	497,736,155	(2 748,919,384)	(2,748,919,384)	0	(2,748 919 384)	0	0
2014 3 Qtr	506,719 518	0	(2 748 919,384)	506,719,518	(2,242,199,866)	(2,242,199,866)	0	(2,242,199,866)	0	0
2014 4 Qtr	516,632,473	0	(2 242,199,866)	516,632,473	(1,725,567,393)	(1,725,567,393)	0	(1,725,567 393)	0	0
2015 1 Qtr	525,713,529	0	(1 725,567,393)	525,713,529	(1,199,853,864)	(1,199,853,864)	0	(1,199,853 864)	0	0
2015 2 Qtr	533,386,147	0	(1 199 853,864)	533,386,147	(666,467,717)	(666,467,717)	0	(666,467 717)	0	0
2015 3 Qtr	541,190,966	0	(666,467 717)	541,190,966	(125,276,751)	(125,276,751)	0	(125,276,751)	0	0
2015 4 Qtr	521,685,845	0	(125 276,751)	125,276,751	0	0	0	0	396,409,094	138 743 183
2016 1 Qtr	587,092,050	0	0	0	0	0	0	0	587,092,050	205,482,217
2016 2 Qtr	593,654,966	0	0	0	0	0	0	0	593,654,966	207,779,238
2016 3 Qtr	600,351,432	0	0	0	0	0	0	0	600,351,432	210,123,001
2016 4 Qtr	607,085,019	0	0	0	0	0	0	0	607,085,019	212,479,756
2017 1 Qtr	654,817,455	0	0	0	0	0	0	0	654,817,455	229,186,109
2017 2 Qtr	662 929,372	0	0	0	0	0	0	0	662,929,372	232,025,280
2017 3 Qtr	670,329,591	0	0	0	0	0	0	0	670,329,591	234,615,357
2017 4 Qtr	677,668,370	0	0	0	0	0	0	0	677,668,370	237,183,929
2018 1 Qtr	686,010,993	0	0	0	0	0	0	0	686,010,993	240,103,848
2018 2 Qtr	694,097,885	0	0	0	0	0	0	0	694,097,885	242,934,260
2018 3 Qtr	702,265,037	0	0	0	0	0	0	0	702,265,037	245,792,763
2018 4 Qtr	710,717,655	0	0	0	0	0	0	0	710,717,655	248,751,179
2019 1 Qtr	719,246,471	0	0	0	0	0	0	0	719,246,471	251,736,265
April 1-May 31 '19	487,979,459	0	0	0	0	0	0	0	487,979,459	170,792.811
Future	46,766,364,277	0	0	0	0	0	0	0	46,766,364,277	16,368,227,497

1/ Table I, Page 13 Column (3) - Table E, Page 5, Columns (2) (4), (6) & (8) - Table G Column (14) / 4 - Table J Part 2 Page 15, Column (11).
Values for 2007-May 31 2009 from Table D, Sum of Column (10).
2/ Column (2) if less than zero, otherwise zero.
3/ Cumulative total of Column (2).
4/ If Column (2) is greater than zero, and (Column (2) + Column (4) is less than zero, then Column (2), otherwise Column (4).
5/ Column (4) + Column (5) - Column (8).
6/ Previous period Column (9) + current period Column (3) - current period Column (5).
7/ If previous Column (10) is greater than zero, and previous Column (10) is less than current Column (7), then previous Column (10), otherwise zero.
8/ Column (7) Column (8).
9/ If Column (2) is greater than zero, then Column (2) - Column (5) Column (8), otherwise zero.
10/ Column (10) times applicable Federal Statutory Tax Rate.

TABLE J - PART 2. COMPUTATION OF STATE TAX LIABILITY - TAXABLE INCOME
(Road Property)

Time Period	Taxable Income B/4 NOL's DRR 1/	Net Operating Losses Generated 2/	NOL's Generated Plus Carryforward 3/	Carryforward Utilized 4/	Carryforward Remaining 5/	Carryback Available 6/	Carryback Utilized 7/	Carryback Remaining 8/	Annual Taxable Income 9/	Annual Tax Liability 10/
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
2007	($37,777,982)	($37,777,982)	($37,777,982)	$0	($37,777,982)	($37,777,982)	$0	($37,777,982)	$0	$0
2008	(215,812,996)	(215,812,996)	(253,590,978)	0	(253,590,978)	(253,590,978)	0	(253,590,978)	0	0
Jan. 1-May 31 09	(135,438,463)	(135,438,463)	(389,029,441)	0	(389,029,441)	(389,029,441)	0	(389,029,441)	0	0
June 1-June 30 09	(1,150,230,460)	(1,150,230,460)	(1,539,259,901)	0	(1,539,259,901)	(1,539,259,901)	0	(1,539,259,901)	0	0
2009 3 Qtr	(3,150,762,919)	(3,150,762,919)	(4,690,022,819)	0	(4,690,022,819)	(4,690,022,819)	0	(4,690,022,819)	0	0
2009 4 Qtr	(3,161,024,145)	(3,161,024,145)	(7,851,046,964)	0	(7,851,046,964)	(7,851,046,964)	0	(7,851,046,964)	0	0
2010 1 Qtr	108,982,189	0	(7,851,046,964)	108,982,189	(7,742,064,775)	(7,742,064,775)	0	(7,742,064,775)	0	0
2010 2 Qtr	104,325,540	0	(7,742,064,775)	104,325,540	(7,637,739,234)	(7,637,739,234)	0	(7,637,739,234)	0	0
2010 3 Qtr	104,646,147	0	(7,637,739,234)	104,646,147	(7,533,093,087)	(7,533,093,087)	0	(7,533,093,087)	0	0
2010 4 Qtr	118,886,769	0	(7,533,093,087)	118,886,769	(7,414,206,319)	(7,414,206,319)	0	(7,414,206,319)	0	0
2011 1 Qtr	210,620,758	0	(7,414,206,319)	210,620,758	(7,203,585,560)	(7,203,585,560)	0	(7,203,585,560)	0	0
2011 2 Qtr	210,052,340	0	(7,203,585,560)	210,052,340	(6,993,533,221)	(6,993,533,221)	0	(6,993,533,221)	0	0
2011 3 Qtr	228,383,381	0	(6,993,533,221)	228,383,381	(6,765,149,840)	(6,765,149,840)	0	(6,765,149,840)	0	0
2011 4 Qtr	237,012,333	0	(6,765,149,840)	237,012,333	(6,528,137,506)	(6,528,137,506)	0	(6,528,137,506)	0	0
2012 1 Qtr	304,981,670	0	(6,528,137,506)	304,981,670	(6,223,155,837)	(6,223,155,837)	0	(6,223,155,837)	0	0
2012 2 Qtr	323,345,040	0	(6,223,155,837)	323,345,040	(5,899,810,796)	(5,899,810,796)	0	(5,899,810,796)	0	0
2012 3 Qtr	327,250,261	0	(5,899,810,796)	327,250,261	(5,572,560,535)	(5,572,560,535)	0	(5,572,560,535)	0	0
2012 4 Qtr	324,495,865	0	(5,572,560,535)	324,495,865	(5,248,064,670)	(5,248,064,670)	0	(5,248,064,670)	0	0
2013 1 Qtr	367,939,319	0	(5,248,064,670)	367,939,319	(4,880,125,351)	(4,880,125,351)	0	(4,880,125,351)	0	0
2013 2 Qtr	371,044,891	0	(4,880,125,351)	371,044,891	(4,509,080,459)	(4,509,080,459)	0	(4,509,080,459)	0	0
2013 3 Qtr	379,289,309	0	(4,509,080,459)	379,289,309	(4,129,791,150)	(4,129,791,150)	0	(4,129,791,150)	0	0
2013 4 Qtr	388,653,389	0	(4,129,791,150)	388,653,389	(3,741,137,761)	(3,741,137,761)	0	(3,741,137,761)	0	0
2014 1 Qtr	494,482,222	0	(3,741,137,761)	494,482,222	(3,246,655,539)	(3,246,655,539)	0	(3,246,655,539)	0	0
2014 2 Qtr	497,736,155	0	(3,246,655,539)	497,736,155	(2,748,919,384)	(2,748,919,384)	0	(2,748,919,384)	0	0
2014 3 Qtr	506,719,518	0	(2,748,919,384)	506,719,518	(2,242,199,866)	(2,242,199,866)	0	(2,242,199,866)	0	0
2014 4 Qtr	516,632,473	0	(2,242,199,866)	516,632,473	(1,725,567,393)	(1,725,567,393)	0	(1,725,567,393)	0	0
2015 1 Qtr	525,713,529	0	(1,725,567,393)	525,713,529	(1,199,853,864)	(1,199,853,864)	0	(1,199,853,864)	0	0
2015 2 Qtr	533,386,147	0	(1,199,853,864)	533,386,147	(666,467,717)	(666,467,717)	0	(666,467,717)	0	0
2015 3 Qtr	541,190,966	0	(666,467,717)	541,190,966	(125,276,751)	(125,276,751)	0	(125,276,751)	0	0
2015 4 Qtr	549,414,372	0	(125,276,751)	125,276,751	0	0	0	0	424,137,621	27,728,527
2016 1 Qtr	*628,158,711*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*628,158,711*	*41,066,661*
2016 2 Qtr	635,180,698	0	0	0	0	0	0	0	635,180,698	41,525,732
2016 3 Qtr	642,345,577	0	0	0	0	0	0	0	642,345,577	41,994,145
2016 4 Qtr	649,550,173	0	0	0	0	0	0	0	649,550,173	42,465,155
2017 1 Qtr	700,621,459	0	0	0	0	0	0	0	700,621,459	45,804,004
2017 2 Qtr	709,300,798	0	0	0	0	0	0	0	709,300,798	46,371,426
2017 3 Qtr	717,218,658	0	0	0	0	0	0	0	717,218,658	46,889,066
2017 4 Qtr	725,070,778	0	0	0	0	0	0	0	725,070,778	47,402,409
2018 1 Qtr	733,996,962	0	0	0	0	0	0	0	733,996,962	47,985,969
2018 2 Qtr	742,649,526	0	0	0	0	0	0	0	742,649,526	48,551,641
2018 3 Qtr	751,387,964	0	0	0	0	0	0	0	751,387,964	49,122,927
2018 4 Qtr	760,431,837	0	0	0	0	0	0	0	760,431,837	49,714,182
2019 1 Qtr	769,557,238	0	0	0	0	0	0	0	769,557,238	50,310,766
April 1-May 31 '19	522,113,266	0	0	0	0	0	0	0	522,113,266	34,133,807
Future	50,037,637,370	0	0	0	0	0	0	0	50,037,637,370	3,271,273,093

1/ Table I, Page 13, Column (3) - Table E, Page 5, Columns (2), (4), (6) & (8) Table G, Column (14) / 4
Values for 2007-May 31, 2009 from Table D, Sum of Column (10).
2/ Column (2) if less than zero, otherwise zero.
3/ Cumulative sum. of Column (2).
4/ If Column (2) is greater than zero, and (Column (2) + Column (4)) is less than zero, then Column (2), otherwise Column (4).
5/ Column (4) + Column (5) + Column (8).
6/ Previous period Column (9) current period Column (3) - current period Column (5).
7/ If previous Column (10) is greater than zero, and previous Column (10) is less than current Column (7), then previous Column (10), otherwise zero.
8/ Column (7) - Column (8)
9/ If Column (2) is greater than zero, then Column (2) Column (5) - Column (8), otherwise zero.
10/ Column (10) times applicable route mile weighted State Statutory Tax Rates.

TABLE K. DRR OPERATING EXPENSES

Item (1)		2009 (2)	2010 (3)	2011 (4)	2012 (5)	2013 (7)	2014 (8)	2015 (9)	2016 (10)	2017 (11)	2018 (12)	2019 (13)
1 Train & Engine Personnel		$338,778,410	$372,387,574	$386,236,713	$390,762,460	$404,661,708	$419,405,235	$430,027,208	$450,772,922	$472,800,214	$496,197,542	$521,059,857
2 Locomotive Lease Expense		$80,591,399	$88,586,624	$91,881,172	$92,957,794	$96,264,261	$99,771,573	$102,298,415	$107,233,577	$112,473,610	$118,039,560	$123,954,012
3. Locomotive Maintenance Expense		$156,374,715	$171,888,169	$178,280,711	$180,369,724	$186,785,395	$193,590,772	$198,493,705	$208,069,597	$218,237,043	$229,036,877	$240,512,926
4 Locomotive Operating Expense		$435,778,549	$479,010,799	$496,825,268	$502,646,842	$520,525,768	$539,490,709	$553,154,000	$579,839,695	$608,173,912	$638,270,440	$670,251,415
5 Railcar Lease Expense		$356,187,065	$391,523,289	$406,084,087	$410,842,397	$425,455,879	$440,957,025	$452,124,825	$473,936,590	$497,095,788	$521,695,424	$547,835,329
6. Material & Supply Operating		$4,550,358	$4,550,358	$4,550,358	$4,550,358	$4,550,358	$4,550,358	$4,550,358	$4,550,358	$4,550,358	$4,550,358	$4,550,358
7 Ad Valorem Tax		$56,874,230	$56,874,230	$56,874,230	$56,874,230	$56,874,230	$56,874,230	$56,874,230	$56,874,230	$56,874,230	$56,874,230	$56,874,230
8 Operating Managers		$63,558,425	$63,558,425	$63,558,425	$63,558,425	$63,558,425	$63,558,425	$63,558,425	$63,558,425	$63,558,425	$63,558,425	$63,558,425
9. General & Administration		$198,994,166	$79,541,983	$79,541,983	$79,541,983	$79,541,983	$79,541,983	$79,541,983	$79,541,983	$79,541,983	$79,541,983	$79,541,983
10. Loss and Damage		$12,855,629	$14,130,997	$14,656,530	$14,828,269	$15,355,704	$15,915,177	$16,318,249	$17,105,487	$17,941,357	$18,829,215	$19,772,666
11 Trackage Rights		$56,937,355	$64,784,349	$67,193,687	$67,981,032	$70,399,087	$72,964,022	$74,811,929	$78,421,066	$82,253,158	$86,323,597	$90,648 899
12 Intermodal Lift Costs		$108 004,501	$118,719,295	$123,134,480	$124,577,314	$129,008,474	$133,708,795	$137,095,141	$143,708,994	$150,731,421	$158,190,623	$166,116,872
13 Multi-Level Loading Costs		$6,917,145	$7,603,374	$7,886,144	$7,978 551	$8 262,344	$8,563,376	$8,780,255	$9 203,839	$9 653,590	$10,131,314	$10,638,951
14 Insurance	1.96%	$39,884,986	$40,566,128	$41,811,406	$42,218,349	$43,468,132	$44,793,830	$45,748,929	$47,614,328	$49,594,963	$51,698,788	$53,934,340
15. Maintenance of Way		$156,859,065	$156,859,065	$156,859,065	$156,859,065	$156,859,065	$156,859,065	$156,859,065	$156,859,065	$156,859,065	$156,859,065	$156,859,065
16. Total Operating Expenses		$2,075,145,997	$2,110,584,659	$2,175,374,259	$2,196,546,790	$2,261,570,814	$2,330,544,574	$2,380,236,716	$2,477,290,155	$2,580,339,116	$2,689,797,440	$2,806,109,328
17. Expense Per Quarter		$518,786,499	$527,646,165	$543,843,565	$549,136,698	$565,392,703	$582,636,144	$595,059,179	$619,322,539	$645,084,779	$672,449,360	$701,527,332

TABLE K: DRR OPERATING EXPENSES, INDEXED
(Continued)

Period (1)	Quarter (2)	Hybrid Index 1/ (3)	Operating Expense Indexed For Inflation 2/ (4)	Period (5)	Quarter (6)	Hybrid Index 1/ (7)	Operating Expense Indexed For Inflation 2/ (8)
1	June 1 to June 30	100 000	$171,001,049 3/	27	2015 4 Qtr	146.606	$872,395,418
2	2009 3 Qtr	110 339	572,700,509 4/	28	2016 1 Qtr	147.976	916,449,779
3	2009 4 Qtr	117.144	608,022,544 4/	29	2016 2 Qtr	149 359	925,011,728
4	2010 1 Qtr	122.071	644,103,397	30	2016 3 Qtr	150 743	933,586,155
5	2010 2 Qtr	124.633	657,621,680	31	2016 4 Qtr	152 140	942,240,064
6	2010 3 Qtr	125 532	662,364,277	32	2017 1 Qtr	153 321	989,048,327
7	2010 4 Qtr	129 733	684,532,684	33	2017 2 Qtr	154 510	996,720,865
8	2011 1 Qtr	128 412	698,362,256	34	2017 3 Qtr	155 692	1,004,343,290
9	2011 2 Qtr	138 110	751,099,876	35	2017 4 Qtr	156 882	1,012,024,006
10	2011 3 Qtr	141 540	769,756,108	36	2018 1 Qtr	158.159	1,063,537,148
11	2011 4 Qtr	141 700	770,624,946	37	2018 2 Qtr	159.445	1,072,189,929
12	2012 1 Qtr	137.054	752,611,239	38	2018 3 Qtr	160 725	1,080,795,345
13	2012 2 Qtr	138.888	762,684,826	39	2018 4 Qtr	162 015	1,089,469,827
14	2012 3 Qtr	137 201	753,422,946	40	2019 1 Qtr	163.137	1,144,450,755
15	2012 4 Qtr	141 619	777,682,060	41	April 1-May 31 '19	164 267	772,471,463
16	2013 1 Qtr	141 138	797,981,266				
17	2013 2 Qtr	141 363	799,258,036				
18	2013 3 Qtr	140 869	796,460,632				
19	2013 4 Qtr	142 101	803,429,663				
20	2014 1 Qtr	142 456	830,002,626				
21	2014 2 Qtr	143 703	837,265,148				
22	2014 3 Qtr	143 804	837,851,234				
23	2014 4 Qtr	145 055	845,140,540				
24	2015 1 Qtr	145 445	865,481,612				
25	2015 2 Qtr	145 836	867,808,739				
26	2015 3 Qtr	146 221	870,099,057				

1/ 2Q09 equals 100 0, all other quarters equal Quarterly Inflation Indexes for the Hybrid Index from Table B)

2/ (Quarterly expense from Table K, Page 16, for the applicable time period x Column (3) or Column (7) ÷ Period 1 June 1 to June 30, 2009

3/ (Quarterly 2009 expense excluding start-up costs from Table K, Page 16 x 30/92) + (Annual start-up expense from Table K, Page 16 x 30/365)

4/ (Quarterly 2009 expense excluding start-up costs from Table K, Page 16 x Column (3) ÷ Period 1 June 1 to June 30, 2009) +
(Annual start-up expense from Table K, Page 16 x 92/365 x Column (3) ÷ Period 1, June 1 to June 30, 2009)

TABLE 1. DRR - Stand-Alone Costs and Revenues

Quarterly Revenue Requirements to Cover Total Stand-Alone Costs

Period (1)	Quarter (2)	Quarterly Capital Requirement Road Property (3)	Quarterly Operating Expense (4)	Annual Stand Alone Requirement (5)	Annual Stand Alone Revenues (6)	Overpayments Or Shortfalls In Revenues (7)	PV Difference (8)	Cumulative PV Difference (9)
1	June 1-June 30 09	$91.084.270	$171.001.049					
2	2009 3 Qu	654 899.584	572.700.509					
3	2009 4 Qtr	644,638.358	608,022.544	$2,742,346,315	$3.109 690.106	$367.343,792	$358.340,725	$358.340.725
4	2010 1 Qtr	677,119,231	644 103.397					
5	2010 2 Qtr	672,462.582	657.621.680					
6	2010 3 Qtr	672,783,188	662.364,277					
7	2010 4 Qtr	687,023,810	684,532.684	5,358,010,849	6.152,778,976	794,768 127	693,530,768	1.051 871.493
8	2011 1 Qtr	686.831.796	698,362.256					
9	2011 2 Qtr	686,263.377	751,099,876					
10	2011 3 Qtr	704 594,418	769 756,108					
11	2011 4 Qtr	713,223,371	770,624,946	5,780,756,147	6,718 224,146	937,467 998	726,928 629	1 778.800.122
12	2012 1 Qtr	714,642,352	752,611 239					
13	2012 2 Qtr	733.005,723	762,684,826					
14	2012 3 Qtr	736,910,944	753,422,946					
15	2012 4 Qtr	734,156,548	777,682,060	5 965,116,638	7.238,075.004	1,272,958,365	900,117 180	2.678,917.302
16	2013 1 Qtr	733,441,413	797,981 266					
17	2013 2 Qtr	736,546,985	799,258,036					
18	2013 3 Qtr	744 791,403	796,460 632					
19	2013 4 Qtr	754,155,482	803, 29,663	6,166,064,880	7.721.755,748	1.555,690 869	988,771,182	3.667,688,484
20	2014 1 Qtr	762,816,717	830.002,626					
21	2014 2 Qtr	766,070,650	837,265 148					
22	2014 3 Qtr	775,054,012	837,851 234					
23	2014 4 Qtr	784,966,967	845,140 540	6,439,167 895	8,349,743,103	1,910,575,208	1,091 501,363	4,759,189,847
24	2015 1 Qtr	792,803,494	865,481,612					
25	2015 2 Qtr	800,476,112	867,808,739					
26	2015 3 Qtr	808,280,930	870,099,057					
27	2015 4 Qtr	816,504 336	872,395 418	6,693 849,699	8 916,451,018	2,222,601,319	1,141,325,075	5,900 514,922
28	2016 1 Qtr	823,453 851	916,449,779					
29	2016 2 Qtr	830,475 839	925,011 728					
30	2016 3 Qtr	837,640 717	933,586,155					
31	2016 4 Qtr	844 845,314	942,240,064	7,053,703,446	9,713 197,858	2,659,494,412	1,227,536 797	7,128,051,719
32	2017 1 Qtr	852,637,258	989,048,327					
33	2017 2 Qtr	861,316,598	996,720,865					
34	2017 3 Qtr	869,234,457	1,004,343,290					
35	2017 4 Qtr	877,086,578	1,012,024,006	7,462 411,379	10,642,274,884	3,179,863,505	1,319,263,547	8,447 315 266
36	2018 1 Qtr	885,960,906	1,063,537 148					
37	2018 2 Qtr	894,613 470	1,072 189 929					
38	2018 3 Qtr	903,351,908	1,080,795,345					
39	2018 4 Qtr	912,395,781	1,089,469,827	7,902,314,315	11,660,518,735	3,758,204 420	1,401,493,635	9,848,808,901
40	2019 1 Qtr	921,573,037	1,144 450,755					
41	April 1-May 31 '19	624,013,967	772,471,463	3,462 509 222	5 320,077 711	1,857 568 488	656,748,953	10,505,557,854

TAB 2

DRR Rebuttal Maximum Markup Methodology Results

	Year	Stand-Alone Costs 1/	DRR Revenues 1/	Maximum Markup 2/
	(1)	(2)	(3)	(4)
1	2009	$2,742,346,315	$3,109,690,106	195 8%
2	2010	5,358,010,849	6,152,778,976	172.5%
3.	2011	5,780,756,147	6,718,224,146	167.1%
4	2012	5,965,116,638	7,238,075,004	151.7%
5.	2013	6,166.064,880	7,721,755,748	141.4%
6	2014	6,439,167,895	8,349,743,103	136.3%
7.	2015	6;693,849,699	8,916,451,018	133.2%
8.	2016	7,053,703,446	9,713,197,858	126.6%
9	2017	7,462.411,379	10,642,274,884	121.6%
10	2018	7,902.314,315	11,660,518,735	117.4%
11	2019	3,462,509,222	5,320,077,711	112.7%

1/ Source Rebuttal Exhibit III-H-1
2/ Source *See* e-workpaper "MaximumMarkup Rebuttal.accdb."

TAB 3

Comparison of NS Tariff Rates and Maximum Rates Per Car for DuPont Movements - 2009

Origin City (1)	ST	Destination City (2)	ST	Railroad(s) (3)	Commodity (4)	2Q2009 Tariff Rate 1/ (5)	Phase III Cost 1/ (6)	Jurisdictional Threshold 1/ (7)	SAC Rate 2/ (8)	STB Maximum Rate 3/ (9)
Exhibit A - Local Moves										
1. Removed										
2 Bayway	NJ	Waynesville	NC	NS	2819315	xxx	$2,242	$4,035	xxx	xxx
3 Belle	WV	Danville	IL	NS	2813980	xxx	$1,634	$2 942	xxx	xxx
4 Removed										
5 Removed										
6. Removed										
7 Removed										
8 Removed										
9 Belle	WV	Wyandotte	MI	NS	2813934	xxx	$1,222	$2,199	xxx	xxx
10 Charleston	IN	Edgemoor	DE	NS	2812815	xxx	$2,223	$4,001	xxx	xxx
11. Edgemoor	DE	Chicago	IL	NS	2816130	xxx	$2,221	$3,998	xxx	xxx
12 Edgemoor	DE	Chillicothe	OH	NS	2816130	xxx	$2,163	$3,894	xxx	xxx
13. Edgemoor	DE	Mahrt	AL	NS	2816130	xxx	$2,857	$5,142	xxx	xxx
14 Edgemoor	DE	Riverwood Intl	GA	NS	2816130	xxx	$2,592	$4 666	xxx	xxx
15. Edgemoor	DE	Wabash	IN	NS	2816130	xxx	$2,274	$4,092	xxx	xxx
16 Lemoyne	AL	Grant	SC	NS	4810560	xxx	$2,332	$4,197	xxx	xxx
17. Loudon	TN	Braithwaite	LA	NS	2818512	xxx	$1 900	$3,421	xxx	xxx
18. Louisville	KY	Decatur	IL	NS	2819450	xxx	$1,222	$2 199	xxx	xxx
19 Louisville	KY	Lafayette	IN	NS	2819450	xxx	$1,528	$2,750	xxx	xxx
20 Removed										
21 Removed										
22 McIntosh	AL	Lemoyne	AL	NS	2812220	xxx	$487	$877	xxx	xxx
23 Reybold	DE	Detroit	MI	NS	2819315	xxx	$1,780	$3,204	xxx	xxx
24 Reybold	DE	Fort Mill	SC	NS	2819315	xxx	$1,781	$3,212	xxx	xxx
25 Reybold	DE	Morrisville	PA	NS	2819315	xxx	$564	$1,016	xxx	xxx
Exhibit B - Joint Moves										
1 Belle	WV	Anaheim	CA	NS-CHGO UP	2813980	$7,715	$1,525	$2,746	$2,987	$2,987
2 Belle	WV	Baypan	TX	NS-ESTL-UP	2818620	$4,537	$1,914	$3 446	$3,748	$3,748
3 Removed										
4 Belle	WV	Brownsville	TX	NS-ESTL-UP	2818221	$4,537	$1,895	$3 410	$3,710	$3,710
5 Belle	WV	Burley	ID	NS-CHGO-UP	2813934	$7,715	$1 525	$2,746	$2,987	$2,987
6 Belle	WV	Cadet	MO	NS-KCITY-UP	2813934	$9 563	$2 371	$4,268	$4 642	$4,642
7 Removed										
8 Belle	WV	Channelview	TX	NS-ESTL-UP	2818130	$4,537	$1,756	$3,160	$3,437	$3,437
9 Belle	WV	City of Commerce	CA	NS STRTR-BNSF	2818221	$8,561	$1,654	$2 978	$3,239	$3,239
10 Belle	WV	Conroe	TX	NS-ESTL-BNSF	2813934	$8,093	$1,890	$3,402	$3 700	$3,700
11 Belle	WV	Corsicana	TX	NS-ESTL-UP	2813934	$8,093	$1 795	$3,231	$3 515	$3,515
12 Removed										
13 Belle	WV	East Billings	MT	NS-CHGO-BNSF	2818130	$5,132	$1,506	$2,710	$2,948	$2,948
14 Belle	WV	Ethyl	AR	NS ESTL-UP-MCNFL-LNW	2813934	$8,093	$1,810	$3,258	$3,544	$3 544
15 Belle	WV	Finley	WA	NS-CHGO-BNSF	2813934	$7,715	$1,526	$2 746	$2 987	$2,987
16. Removed										
17 Belle	WV	Freeport	TX	NS-ESTL-UP	2818130	$4,537	$1,671	$3,008	$3,272	$3,272
18 Belle	WV	Garyville	LA	NS-NEWOR-CN	2813934	$10,560	$2,719	$4,894	$5,324	$5,324
19 Belle	WV	Geismar	LA	NS-NEWOR CN	2813934	$10,560	$2,490	$4,481	$4,875	$4,875
20 Belle	WV	Janesville	WI	NS CHGO UP	2818131	$7,715	$1,498	$2,696	$2 933	$2,933
21 Belle	WV	Laredo	TX	NS-ESTL-UP	2818221	$4,537	$1,895	$3,410	$3 710	$3,710
22. Belle	WV	Laredo	TX	NS-ESTL-UP	2818131	$8,093	$1,895	$3,410	$3,710	$3,710
23 Belle	WV	Lorenzo	IL	NS-CHGO-BNSF	2813980	$7,715	$1,509	$2,716	$2,955	$2,955
24 Belle	WV	Los Angeles	CA	NS-STRTR-BNSF	2813934	$6,649	$1,699	$3,059	$3,327	$3,327
25 Belle	WV	Los Angeles	CA	NS-CHGO UP	2818130	$5,132	$1,515	$2,727	$2,966	$2,966
26 Removed										
27. Belle	WV	Milldale	IL	NS-CHGO CN	2818131	$7,715	$1 500	$2,699	$2 936	$2,936
28. Removed										
29 Belle	WV	Saint Paul	MN	NS-CHGO BNSF	2818221	$5,132	$1,659	$2,986	$3,248	$3,248
30 Belle	WV	San Dimas	CA	NS-CHGO UP	2813980	$7,715	$1,631	$2,935	$3 193	$3,193
31 Removed										
32 Belle	WV	St Gabriel	LA	NS-NEWOR CN	2813934	$10,560	$2,702	$4,864	$5,291	$5,291
33 Belle	WV	St Joseph	MO	NS-KCITY-UP	2818130	$6,465	$2,365	$4,256	$4,630	$4,630
34 Removed										
35. Belle	WV	Strang	TX	NS-ESTL-UP	2818221	$4,537	$1,966	$3,539	$3,849	$3,849
36. Belle	WV	Strang	TX	NS-ESTL-BNSF	2813934	$8,093	$1,622	$2,919	$3,175	$3 175
37 Belle	WV	Strang	TX	NS-ESTL-UP	2819183	$4,157	$1 741	$3,134	$3,409	$3 409
38 Removed										
39 Belle	WV	Texas City	TX	NS-ESTL-UP	2813934	$8,093	$1,810	$3,257	$3 543	$3,543
40 Belle	WV	Vernon	MO	NS ESTL-BNSF	2813934	$8,093	$1,877	$3,378	$3,675	$3,675
41 Belle	WV	West Memphis	AR	NS-KCITY-UP	2813934	$9,563	$2,363	$4,253	$4,626	$4,626
42 Belle	WV	Winford Spur	LA	NS-MERID KCS	2813980	$8,939	$2,286	$4,114	$4,475	$4,475
43 Belle	WV	Wichita	KS	NS ESTL-BNSF	2813934	$8,093	$1,916	$3 448	$3 751	$3,751

Comparison of NS Tariff Rates and
Maximum Rates Per Car for DuPont Movements - 2Q09

	Origin		Destination				2Q2009				
	City	ST	City	ST	Railroad(s)	Commodity	Tariff Rate 1/	Phase III Cost 1/	Jurisdictional Threshold 1/	SAC Rate 2/	STB Maximum Rate 3/
	(1)		(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)
44	Bloomington	TX	Greenville	SC	UP-NLWOR-NS	2821142	$5,713	$1,636	$2,944	$3,203	$3,203
45	Bloomington	TX	Washington, Warren	NJ	UP-LSTL-NS	2821142	$9 013	$2,276	$4,097	$4,456	$4,456
46	Removed										
47	Charleston, Bradley	TN	Woodstock	TN	NS-MEMPH CN	2812220	$1,911	$1,045	$1,880	$2,045	$2,045
48	Cresap	WV	Edgemoor	DE	CSXT-HAGTN-NS	2991315	$2 341	$639	$1,149	$1,250	$1,250
49	Dowling	TX	Fort Mill	SC	KCS-MERID-NS	2815112	$4,450	$1,727	$3,108	$3,381	$3,381
50	Edgemoor	DE	Garland	TX	NS-MERID-KCS	2816130	$6,246	$2,787	$5,016	$5,457	$5,457
51	Edgemoor	DE	Gross	MI	NS-CHGO-CN	2816130	$5,689	$2,129	$3,832	$4,169	$4,169
52	Edgemoor	DE	Laredo	TX	NS LSTL-UP	2816130	$6,093	$2,468	$4,413	$4,833	$4,833
53	Edgemoor	DE	Madawaska	ME	NS ROUP1 CN	2816130	$3,530	$1,273	$2,292	$2,493	$2,493
54	Edgemoor	DE	Pasadena	TX	NS LSTL-UP	2819971	$10,747	$2,418	$4,352	$4,734	$4,734
55	Edgemoor	DE	Port Huron	MI	NS BUFT-CN	2816130	$4,880	$1,657	$2,982	$3,244	$3,241
56	Edgemoor	DE	Portland	ME	NS-MCV-PAS-AYER M-ST	2816130	$3,149	$1,270	$2,287	$2,487	$2,487
57	Edgemoor	DE	Portland	OR	NS CHGO BNSF	2816130	$5,689	$2,151	$3,872	$4,211	$4,211
58	Edgemoor	DE	Quinnesec	MI	NS CHGO-CN	2816130	$5,689	$2,129	$3,832	$4,169	$4,169
59	Edgemoor	DE	Raleys	MI	NS-MCV-PAS AYER M-ST	2816130	$3,149	$1,274	$2,294	$2 495	$2,495
60	Edgemoor	DE	Rumford	ME	NS-MCV-PAS-AYER M-ST	2816130	$3,149	$1,270	$2,286	$2 487	$2,487
61	Removed										
62	Edgemoor	DE	Shawmut	ME	NS-MCV-PAS-AYER M-ST	2816130	$3,149	$1,272	$2 289	$2 490	$2,490
63	Edgemoor	DE	Snoboy	CA	NS-CHGO-UP	2816130	$5,689	$2,155	$3,879	$4,219	$4,219
64	Edgemoor	DE	Snoboy	CA	NS-STR TR-BNSF	2816130	$5,101	$2,318	$4,173	$4,540	$4,540
65	Edgemoor	DE	St Paul	MN	NS CHGO-UP	2816130	$5,689	$2,152	$3,874	$4,214	$4,214
66	Removed										
67	Edgemoor	DE	West Monroe	LA	NS-MERID-KCS	2816130	$6,246	$2,793	$5,027	$5 469	$5,469
68	Edgemoor	DE	Wheeling	IL	NS-CHGO-CN	2816130	$5,689	$2 142	$3,855	$4,194	$4,194
69	Enid	OK	Edgemoor	DE	BNSF-ESTL-NS	2991315	$5,364	$2 119	$4,408	$4,795	$4,795
70	Removed										
71	Gregory	TX	Dugan	MS	UP-NLWOR-NS	2813984	$2,373	$491	$888	$966	$966
72	Removed										
73	Gregory	TX	Royce	NJ	UP-ESTL-NS	2813984	$10,123	$2,604	$4,687	$5,098	$5 098
74	Removed										
75	Lemont	IL	Edgemoor	DE	BNSF CHGO-NS	2991315	$4,608	$2,054	$3,697	$4,021	$4,021
76	Lemoyne	AL	Artesia	MS	NS MERID KCS	4810560	$1,550	$1,225	$2,205	$2 398	$2,398
77	McIntosh	AL	Burnside	LA	NS-MOBIL-CN	2819330	$1,092	$312	$561	$610	$610
78	McIntosh	AL	Delisle	MS	NS-MOBIL-CN-HATBG-KCS	2812815	$2,184	$315	$568	$617	$617
79	McIntosh	AL	Delisle	MS	NS-MOBIL-CN-HATBG-KCS	2812220	$1,993	$321	$577	$628	$628
80	McIntosh	AL	Orange	TX	NS NLWOR-UP	2812220	$3,658	$1,546	$2,784	$3,028	$3 028
81	McIntosh	AL	Woodstock	TN	NS MOBIL-CN	2812220	$1,993	$320	$576	$627	$627
82	Orange	TX	Greenville	SC	UP-NLWOR-NS	2821142	$5,713	$1 998	$3,596	$3,911	$3,911
83	Orange	TX	Washington, Warren	NJ	UP-LSTL-NS	2821142	$9 013	$2,130	$3,834	$4,171	$4 171
84	Pascagoula	MS	Fort Mill	SC	MSB-MOBIL-NS	2815112	$4,068	$2,013	$3,623	$3,941	$3 941
85	Pascagoula	MS	Lemoyne	AL	MSB-MOBIL-NS	2815112	$1 092	$273	$491	$534	$534
86	Strang	TX	Lemoyne	AL	UP NLWOR NS	2812350	$4,003	$1,719	$3,095	$3,366	$3,366
87	Beauharnois	PQ	Edgemoor	DE	CSXT-BUFT-NS	2812815	xxx	$1,391	$2,503	xxx	xxx
88	Removed										
89	Belle	WV	Gainesville	GA	NS CINTI-CSXT	2813980	xxx	$1 399	$2,519	xxx	xxx
90	Belle	WV	Port Bienville	MS	NS-ATLA-CSXT-ANSLEY-PBVR	2813934	xxx	$2,353	$4,235	xxx	xxx
91	Belle	WV	Theodore	AL	NS CINTI CSXT	2813934	xxx	$1,391	$2,503	xxx	xxx
92	Bellwood	VA	Dallas	GA	CSXT-PTRSB-NS	2819315	xxx	$2,176	$3,917	xxx	xxx
93	Bellwood	VA	Fort Mill	SC	CSXT-CHLTE-NS	2819315	xxx	$555	$1,000	xxx	xxx
94	Bellwood	VA	Rockwell	NC	CSXT-PTRSB-NS	2819315	xxx	$932	$1,677	xxx	xxx
95	Removed										
96	Danville	VA	Ampthill	VA	NS-PTRSB CSXT	3274110	xxx	$617	$1,111	xxx	xxx
97	Edgemoor	DE	New Johnsonville	TN	NS-CINTI-CSXT	2816130	xxx	$2,039	$3,670	xxx	xxx
98	Enid	OK	Edgemoor	DE	BNSF-ESTL-NS	2991315	xxx	$3,002	$5,404	xxx	xxx
99	Loudon	TN	Grangers	NC	NS-CHATT-CSXT	2818512	xxx	$555	$999	xxx	xxx
100	Loudon	TN	Grangers	NC	NS-CHATT-CSXT	2818512	xxx	$425	$765	xxx	xxx
101	Miami Fort	OH	Dallas	GA	CSXT-CINTI-NS	2819315	xxx	$1,479	$2,662	xxx	xxx
102	Miami Fort	OH	Gracewood	GA	CSXT CHATT-NS	2819325	xxx	$1,335	$2,403	xxx	xxx
103	Miami Fort	OH	McIntosh	AL	CSXT CHATT-NS	2819340	xxx	$942	$1,696	xxx	xxx
104	Removed										
105	Removed										
106	Miami Fort	OH	Pepper	VA	CSXT-CINTI-NS	2819345	xxx	$1,979	$3,562	xxx	xxx
107	Natrium	WV	Belle	WV	CSXT-CINTI-NS	2812220	xxx	$1,433	$2,579	xxx	xxx
108	Natrium	WV	Danville	VA	CSXT-LYNCH NS	2812220	xxx	$370	$665	xxx	xxx
109	New Johnsonville	TN	Chapman	PA	CSXT-CINTI-NS	2816130	xxx	$2,023	$3,642	xxx	xxx
110	Removed										
111	New Johnsonville	TN	Morrow	GA	CSXT-CHATT-NS	2816130	xxx	$649	$1,167	xxx	xxx
112	Niagara Falls	NY	Belle	WV	CSXT-CLMBO NS	2812220	xxx	$717	$1,291	xxx	xxx

Comparison of NS Tariff Rates and
Maximum Rates Per Car for DuPont Movements - 2Q09

	Origin City (1)	ST	Destination City (2)	ST	Railroad(s) (3)	Commodity (4)	2Q2009 Tariff Rate 1/ (5)	2Q2009 Phase III Cost 1/ (6)	2Q2009 Jurisdictional Threshold 1/ (7)	2Q2009 SAC Rate 2/ (8)	2Q2009 STB Maximum Rate 3/ (9)
113	Niagara Falls	NY	Edgemoor	DE	CSXT-BLLF-NS	2812815	xxx	$1,403	$2,526	xxx	xxx
114	Niagara Falls	NY	Edgemoor	DE	CSXT-BLLF-NS	2812220	xxx	$1,429	$2,573	xxx	xxx
115	Pascagoula	MS	Fort Mill	SC	CSXT-ATLA-NS	2815112	xxx	$1,152	$2,073	xxx	xxx
116.	Starke	FL	Huntsville	AL	CSXT-DCTUR-NS	1441325	xxx	$278	$500	xxx	xxx
117	Starke	FL	Huntsville	AL	CSXT-DCTUR-NS	1441325	xxx	$453	$815	xxx	xxx
118	Wurtland	KY	Fort Mill	SC	CSXT-CHLTE-NS	2819315	xxx	$558	$1,004	xxx	xxx
119	Wurtland	KY	Melrose	AL	CSXT-BHAM-NS	2819315	xxx	$754	$1,358	xxx	xxx
120	Belle	WV	Divine	IL	NS-PINL-CN	2813980	xxx	$1,436	$2,586	xxx	xxx
121	Belle	WV	Mapleton	IL	NS-LOGPT-IPW	2813934	xxx	$1,277	$2,299	xxx	xxx
122.	Burnside	LA	Gracewood	GA	CN-NLWOR-NS	2819325	xxx	$1,849	$3,328	xxx	xxx
123	Lemont	IL	Edgemoor	DE	BNSF-CHGO-NS	2991315	xxx	$2,569	$4,625	xxx	xxx
124	New Johnsonville	TN	McDonough	GA	CSXT-CHATT-NS	2816130	$2,951	$909	$1,636	$1,780	$1,780
125.	Charleston	TN	Woodstock	TN	NS-MEMPH-CN	2812410	xxx	$1,031	$1,856	xxx	xxx
126.	Reybold	DE	Albuquerque	NM	NS-STRTR-BNSF	2819315	xxx	$2,218	$3,993	xxx	xxx
127	Reybold	DE	Baltimore	MD	NS-BALBV-CSXT	2819315	xxx	$378	$680	xxx	xxx
128	Reybold	DE	Blair	NE	NS-CHGO-UP	2819315	xxx	$2,059	$3,706	xxx	xxx
129	Reybold	DE	Brewton	AL	NS-BHAM-CSXT	2819315	xxx	$2,327	$4,188	xxx	xxx
130	Reybold	DE	Castle Hayne	NC	NS-CHLTE-CSXT	2819315	xxx	$1,614	$2,906	xxx	xxx
131	Reybold	DE	Clifton	AZ	NS-KCITY-UP	2819315	xxx	$2,960	$5,328	xxx	xxx
132.	Reybold	DE	Corson	SD	NS-CHGO-BNSF	2819315	xxx	$2,058	$3,705	xxx	xxx
133	Removed										
134	Reybold	DE	Ferguson	MS	NS-MEMPHIS-CN	2819315	xxx	$2,688	$4,838	xxx	xxx
135	Reybold	DE	Hastings	NE	NS-CHGO-BNSF	2819315	xxx	$2,058	$3,705	xxx	xxx
136	Reybold	DE	Indianapolis	IN	NS-CINTI-CSXT	2819315	xxx	$1,856	$3,340	xxx	xxx
137	Reybold	DE	Omaha	NE	NS-CHGO-UP	2819315	xxx	$2,059	$3,706	xxx	xxx
138	Reybold	DE	Orange	TX	NS-LSTL-BNSF	2819315	xxx	$2,458	$4,424	xxx	xxx
139	Reybold	DE	Phoenix	AZ	NS-STRTR-BNSF	2819315	xxx	$2,218	$3,992	xxx	xxx
140	Reybold	DE	Sioux City	IA	NS-CHGO-BNSF	2819315	xxx	$2,058	$3,705	xxx	xxx
141	Reybold	DE	Toledo	OH	NS-TOLED-CSXT	2819315	xxx	$2,006	$3,610	xxx	xxx
142.	Reybold	DE	Washington	WV	NS-HAGTN-CSXT	2819315	xxx	$620	$1,117	xxx	xxx

1/ From Rebuttal Exhibit II-A-1
2/ MMM Ratio from Rebuttal Exhibit III-H-2 x Column (6)
3/ Greater of Column (7) or Column (8)

TAB 4

Comparison of NS Tariff Rates and Maximum Rates Per Car for DuPont Movements - 3Q09

	Origin City (1)	ST	Destination City (2)	ST	Railroad(s) (3)	Commodity (4)	3Q2009 Tariff Rate 1/ (5)	Phase III Cost 1/ (6)	Jurisdictional Threshold 1/ (7)	SAC Rate 2/ (8)	STB Maximum Rate 3/ (9)
Exhibit A - Local Moves											
1	Removed										
2	Bayway	NJ	Waynesville	NC	NS	2819315	xxx	$2,289	$4,121	xxx	xxx
3	Belle	WV	Danville	IL	NS	2813980	xxx	$1,669	$3,004	xxx	xxx
4	Removed										
5	Removed										
6.	Removed										
7	Removed										
8	Removed										
9	Belle	WV	Wyandotte	MI	NS	2813934	xxx	$1,248	$2,246	xxx	xxx
10	Charleston	IN	Edgemoor	DE	NS	2812815	xxx	$2,270	$4,086	xxx	xxx
11.	Edgemoor	DE	Chicago	IL	NS	2816130	xxx	$2,268	$4,083	xxx	xxx
12	Edgemoor	DE	Chillicothe	OH	NS	2816130	xxx	$2,209	$3,976	xxx	xxx
13	Edgemoor	DE	Mabrt	AL	NS	2816130	xxx	$2,917	$5,251	xxx	xxx
14.	Edgemoor	DE	Riverwood Intl	GA	NS	2816130	xxx	$2,647	$4,765	xxx	xxx
15	Edgemoor	DE	Wabash	IN	NS	2816130	xxx	$2,322	$4,179	xxx	xxx
16	Lemoyne	AL	Giant	SC	NS	4810560	xxx	$2,381	$4,286	xxx	xxx
17	Loudon	TN	Braithwaite	LA	NS	2818512	xxx	$1,941	$3,493	xxx	xxx
18	Louisville	KY	Decatur	IL	NS	2819450	xxx	$1,248	$2,246	xxx	xxx
19	Louisville	KY	Lafayette	IN	NS	2819450	xxx	$1,560	$2,808	xxx	xxx
20	Removed										
21	Removed										
22	McIntosh	AL	Lemoyne	AL	NS	2812220	xxx	$498	$896	xxx	xxx
23	Reybold	DE	Detroit	MI	NS	2819315	xxx	$1,818	$3,272	xxx	xxx
24	Reybold	DE	Fort Mill	SC	NS	2819315	xxx	$1,822	$3,280	xxx	xxx
25	Reybold	DE	Morrisville	PA	NS	2819315	xxx	$576	$1,037	xxx	xxx
Exhibit B - Joint Moves											
1.	Belle	WV	Anaheim	CA	NS-CHGO-UP	2813980	$7,715	$1,558	$2,804	$3,050	$3,050
2.	Belle	WV	Bayport	TX	NS-LSTL-UP	2818620	$4,851	$1,955	$3,519	$3,828	$3,828
3	Removed										
4	Belle	WV	Brownsville	TX	NS-LSTL-UP	2818221	$4,851	$1,935	$3,483	$3,788	$3,788
5	Belle	WV	Burley	ID	NS CHGO-UP	2813934	$7,715	$1,558	$2,804	$3,050	$3,050
6	Belle	WV	Cadet	MO	NS KCITY-UP	2813934	$8,086	$2,421	$4,358	$4,741	$4,741
7	Removed										
8	Belle	WV	Channelview	TX	NS-LSTL-UP	2818130	$5,019	$1,793	$3,227	$3,510	$3,510
9	Belle	WV	City of Commerce	CA	NS-STR TR-BNSF	2818221	$8,561	$1,689	$3,041	$3,308	$3,308
10	Belle	WV	Conroe	TX	NS-LSTL-BNSF	2813934	$8,093	$1,930	$3,474	$3,779	$3,779
11.	Belle	WV	Corsicana	TX	NS-LSTL-UP	2813934	$8,093	$1,833	$3,300	$3,589	$3,589
12	Removed										
13.	Belle	WV	East Billings	MT	NS-CHGO-BNSF	2818130	$5,516	$1,538	$2,768	$3,010	$3,010
14	Belle	WV	Ethyl	AR	NS-LSTL-UP-MCNL-LNW	2813934	$8,093	$1,848	$3,327	$3,619	$3,619
15	Belle	WV	Finley	WA	NS-CHGO-BNSF	2813934	$7,715	$1,558	$2,805	$3,051	$3,051
16.	Removed										
17	Belle	WV	Freeport	TX	NS-LSTL-UP	2818130	$4,851	$1,707	$3,072	$3,342	$3,342
18	Belle	WV	Garyville	LA	NS-NEWOR-CN	2813934	$10,560	$2,777	$4,998	$5,437	$5,437
19.	Belle	WV	Geismar	LA	NS-NEWOR-CN	2813934	$10,560	$2,542	$4,576	$4,978	$4,978
20	Belle	WV	Janesville	WI	NS-CHGO-UP	2818131	$7,715	$1,530	$2,753	$2,995	$2,995
21	Belle	WV	Laredo	TX	NS-LSTL-UP	2818221	$4,851	$1,935	$3,483	$3,788	$3,788
22	Belle	WV	Laredo	TX	NS-LSTL-UP	2818131	$8,093	$1,935	$3,483	$3,788	$3,788
23	Belle	WV	Lorenzo	IL	NS CHGO BNSF	2813980	$7,715	$1,541	$2,774	$3,018	$3,018
24	Belle	WV	Los Angeles	CA	NS STR TR-BNSF	2813931	$6,649	$1,735	$3,124	$3,398	$3,398
25.	Belle	WV	Los Angeles	CA	NS-CHGO UP	2818130	$5,324	$1,547	$2,785	$3,029	$3,029
26.	Removed										
27	Belle	WV	Millsdale	IL	NS-CHGO-CN	2818131	$7,715	$1,531	$2,757	$2,999	$2,999
28	Removed										
29	Belle	WV	Saint Paul	MN	NS-CHGO BNSF	2818221	$5,411	$1,694	$3,049	$3,317	$3,317
30	Belle	WV	San Dimas	CA	NS CHGO UP	2813980	$7,715	$1,665	$2,997	$3,261	$3,261
31	Removed										
32	Belle	WV	St Gabriel	LA	NS-NEWOR-CN	2813934	$10,560	$2,760	$4,968	$5,404	$5,404
33	Belle	WV	St Joseph	MO	NS KCITY-UP	2818130	$6,465	$2,415	$4,347	$4,728	$4,728
34	Removed										
35	Belle	WV	Strang	TX	NS-LSTL-UP	2818221	$4,778	$2,008	$3,614	$3,931	$3,931
36	Belle	WV	Strang	TX	NS-LSTL-BNSF	2813934	$8,093	$1,656	$2,981	$3,243	$3,243
37	Belle	WV	Strang	TX	NS-LSTL-UP	2819183	$4,157	$1,778	$3,200	$3,481	$3,481
38	Removed										
39	Belle	WV	Texas City	TX	NS-LSTL-UP	2813934	$8,093	$1,848	$3,327	$3,619	$3,619
40	Belle	WV	Verona	MO	NS LSTL-BNSF	2813934	$8,093	$1,917	$3,450	$3,753	$3,753
41.	Belle	WV	West Memphis	AR	NS-KCITY-UP	2813934	$7,875	$2,413	$4,343	$4,724	$4,724
42	Belle	WV	Winford Spur	LA	NS-MERID-KCS	2813980	$8,939	$2,334	$4,201	$4,570	$4,570
43	Belle	WV	Wichita	KS	NS-LSTL-BNSF	2813934	$8,093	$1,956	$3,521	$3,831	$3,831
44	Bloomington	TX	Greenville	SC	UP-NEWOR-NS	2821142	$5,713	$1,670	$3,007	$3,271	$3,271
45	Bloomington	TX	Washington, Warren	NJ	UP-LSTL-NS	2821142	$9,013	$2,324	$4,184	$4,551	$4,551
46	Removed										

Comparison of NS Tariff Rates and
Maximum Rates Per Car for DuPont Movements - 3Q09

	Origin		Destination					3Q2009				
	City	ST	City	ST	Railroad(s)	Commodity	Tariff Rate 1/	Phase III Cost 1/	Jurisdictional Threshold 1/	SAC Rate 2/	STB Maximum Rate 3/
	(1)		(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)
47	Charleston, Bradley	IN	Woodstock	IN	NS MEMPH-CN	2812220	$1,911	$1,067	$1,920	$2 089	$2,089
48	Cresap	WV	Edgemoor	DE	CSXT-HAGTN-NS	2991315	$2,341	$652	$1,174	$1,277	$1,277
49	Dowling	TX	Fort Mill	SC	KCS-MERID-NS	2815112	$4,450	$1,763	$3,174	$3,452	$3,452
50.	Edgemoor	DE	Garland	TX	NS-MERID-KCS	2816130	$7,028	$2,846	$5,123	$5,573	$5,573
51	Edgemoor	DE	Groos	MI	NS-CHGO-CN	2816130	$5,814	$2,171	$3,914	$4,257	$4,257
52	Edgemoor	DE	Laredo	TX	NS-LSTL-UP	2816130	$6,093	$2,521	$4,538	$4,936	$4,936
53	Edgemoor	DE	Madawaska	ME	NS-ROUP1-CN	2816130	$3,677	$1,300	$2,340	$2,546	$2,546
54	Edgemoor	DE	Pasadena	TX	NS-LSTL-UP	2819971	$11,817	$2,469	$4,445	$4,835	$4,835
55	Edgemoor	DE	Port Huron	MI	NS-BUFF-CN	2816130	$4,880	$1,692	$3,046	$3,313	$3,313
56.	Edgemoor	DE	Portland	ME	NS-MCV-PAS AYERM-SI	2816130	$3,392	$1,297	$2,335	$2,540	$2,540
57	Edgemoor	DE	Portland	OR	NS CHGO-BNSF	2816130	$5,779	$2,196	$3,954	$4,301	$4,301
58	Edgemoor	DE	Quinnesec	MI	NS-CHGO-CN	2816130	$6,095	$2,174	$3,914	$4,257	$4,257
59	Edgemoor	DE	Riley	ME	NS-MCV-PAS AYERM-SI	2816130	$3,162	$1,301	$2,342	$2,548	$2,548
60	Edgemoor	DE	Rumford	ME	NS-MCV-PAS AYERM-SI	2816130	$3,433	$1,297	$2,335	$2,540	$2,540
61	Removed										
62	Edgemoor	DE	Shawmut	ME	NS MCV-PAS-AYERM-SI	2816130	$3,514	$1,299	$2,338	$2,543	$2,543
63	Edgemoor	DE	Snoboy	CA	NS-CHGO-UP	2816130	$5,824	$2,201	$3,961	$4,309	$4,309
64	Edgemoor	DE	Snoboy	CA	NS-STRTR-BNSF	2816130	$5,101	$2,368	$4,262	$4 636	$4,636
65.	Edgemoor	DE	St Paul	MN	NS CHGO-UP	2816130	$5,993	$2,198	$3,956	$4,304	$4,304
66	Removed										
67.	Edgemoor	DE	West Monroe	LA	NS-MERID KCS	2816130	$6,863	$2,852	$5,134	$5,585	$5,585
68.	Edgemoor	DE	Wheeling	IL	NS-CHGO-CN	2816130	$6,037	$2 187	$3 937	$4,283	$4,283
69	Enid	OK	Edgemoor	DE	BNSF-LSTL-NS	2991315	$5,364	$2,501	$4,502	$4,897	$4,897
70	Removed										
71	Gregory	TX	Dugan	MS	UP-NEWOR-NS	2813984	$2,373	$504	$907	$986	$986
72	Removed										
73	Gregory	TX	Royce	NJ	UP-ESTL-NS	2813984	$10,123	$2,659	$4,786	$5,206	$5,206
74.	Removed										
75.	Lemont	IL	Edgemoor	DE	BNSF-CHGO-NS	2991315	$4,659	$2,097	$3,775	$4,106	$4,106
76	Lemoyne	AL	Artesia	MS	NS-MERID-KCS	4810560	$3,958	$1,251	$2,251	$2,449	$2,449
77	McIntosh	AL	Burnside	LA	NS-MOBIL-CN	2819330	$1,296	$318	$573	$623	$623
78.	McIntosh	AL	Delisle	MS	NS-MOBIL-CN-HATBG-KCS	2812815	$1 982	$322	$580	$631	$631
79	McIntosh	AL	Delisle	MS	NS-MOBIL-CN-HATBG-KCS	2812220	$1 993	$327	$589	$641	$641
80.	McIntosh	AL	Orange	TX	NS-NEWOR-UP	2812220	$4,096	$1,579	$2,843	$3,092	$3,092
81.	McIntosh	AL	Woodstock	IN	NS-MOBIL-CN	2812220	$1,993	$327	$589	$640	$640
82	Orange	TX	Greenville	SC	UP-NEWOR-NS	2821142	$5,713	$2,040	$3,672	$3,994	$3,994
83	Orange	TX	Washington, Warren	NJ	UP-LSTL-NS	2821142	$9 013	$2,175	$3 915	$4,259	$4,259
84	Pascagoula	MS	Fort Mill	SC	MSE-MOBIL-NS	2815112	$4,698	$2,055	$3,700	$4,025	$4,025
85	Pascagoula	MS	Lemoyne	AL	MSE-MOBIL-NS	2815112	$1,092	$278	$501	$545	$545
86	Strang	TX	Lemoyne	AL	UP-NEWOR-NS	2812350	$4 328	$1,756	$3,160	$3,438	$3,438
87.	Beauharnois	PQ	Edgemoor	DE	CSXT-BUFF-NS	2812815	xxx	$1,420	$2 556	xxx	xxx
88	Removed										
89	Belle	WV	Gainesville	GA	NS CINTI CSXT	2813980	xxx	$1,429	$2 572	xxx	xxx
90	Belle	WV	Port Bienville	MS	NS-ATLA-CSXT-ANSLE-PBVR	2813934	xxx	$2,403	$4,325	xxx	xxx
91.	Belle	WV	Theodore	AL	NS-CINTI-CSXT	2813934	xxx	$1,420	$2 556	xxx	xxx
92	Bellwood	VA	Dallas	GA	CSXT-PTRSB-NS	2819315	xxx	$2,222	$4,000	xxx	xxx
93	Bellwood	VA	Fort Mill	SC	CSXT-CHLTE-NS	2819315	xxx	$567	$1,021	xxx	xxx
94	Bellwood	VA	Rockwell	NC	CSXT-PTRSB-NS	2819315	xxx	$951	$1,712	xxx	xxx
95	Removed										
96	Danville	VA	Amphill	VA	NS PTRSB CSXT	3274110	xxx	$630	$1,135	xxx	xxx
97	Edgemoor	DE	New Johnsonville	TN	NS CINTI CSXT	2816130	xxx	$2,082	$3,748	xxx	xxx
98	Enid	OK	Edgemoor	DE	BNSF-ESTL-NS	2991315	xxx	$3,066	$5,519	xxx	xxx
99	Loudon	TN	Grainger	NC	NS CHATT-CSXT	2818512	xxx	$567	$1,021	xxx	xxx
100	Loudon	TN	Grainger	NC	NS-CHATT-CSXT	2818512	xxx	$434	$781	xxx	xxx
101.	Miami Fort	OH	Dallas	GA	CSXT-CINTI-NS	2819315	xxx	$1,510	$2 719	xxx	xxx
102	Miami Fort	OH	Gracewood	GA	CSXT-CHATT-NS	2819325	xxx	$1,363	$2,454	xxx	xxx
103	Miami Fort	OH	McIntosh	AL	CSXT-CHATT-NS	2819340	xxx	$962	$1,732	xxx	xxx
104	Removed										
105	Removed										
106	Miami Fort	OH	Pepper	VA	CSXT-CINTI NS	2819345	xxx	$2,021	$3,638	xxx	xxx
107.	Natrium	WV	Belle	WV	CSXT-CINTI-NS	2812220	xxx	$1,463	$2,634	xxx	xxx
108	Natrium	WV	Danville	VA	CSXT-LYNCH-NS	2812220	xxx	$377	$679	xxx	xxx
109	New Johnsonville	TN	Chapman	PA	CSXT-CINTI-NS	2816130	xxx	$2,066	$3 719	xxx	xxx
110	Removed										
111	New Johnsonville	TN	Morrow	GA	CSXT CHATT-NS	2816130	xxx	$662	$1,192	xxx	xxx
112	Niagara Falls	NY	Belle	WV	CSXT-CLMBO NS	2812220	xxx	$732	$1 318	xxx	xxx
113	Niagara Falls	NY	Edgemoor	DE	CSXT-BUFF-NS	2812815	xxx	$1,433	$2,579	xxx	xxx
114	Niagara Falls	NY	Edgemoor	DE	CSXT-BUFF-NS	2812220	xxx	$1,460	$2,627	xxx	xxx
115	Pascagoula	MS	Fort Mill	SC	CSXT-ATLA-NS	2815112	xxx	$1,176	$2 117	xxx	xxx

Comparison of NS Tariff Rates and
Maximum Rates Per Car for DuPont Movements - 3Q09

	Origin City (1)	ST	Destination City (2)	ST	Railroad(s) (3)	Commodity (4)	3Q2009 Tariff Rate 1/ (5)	Phase III Cost 1/ (6)	Jurisdictional Threshold 1/ (7)	SAC Rate 2/ (8)	STB Maximum Rate 3/ (9)
116	Starke	FL	Huntsville	AL	CSXT-DCTUR-NS	1441325	xxx	$283	$510	xxx	xxx
117	Starke	FL	Huntsville	AL	CSXT DCTUR-NS	1441325	xxx	$463	$833	xxx	xxx
118	Wurtland	KY	Fort Mill	SC	CSXT-CHLTE-NS	2819315	xxx	$570	$1,026	xxx	xxx
119	Wurtland	KY	McIntosh	AL	CSXT-BHAM-NS	2819315	xxx	$770	$1,387	xxx	xxx
120.	Belle	WV	Divine	IL	NS-PINE-CN	2813980	$7,502	$1,467	$2,640	$2,872	$2,872
121	Belle	WV	Mapleton	IL	NS-LOGPT-UPW	2813934	$5,843	$1,304	$2,348	$2,554	$2,554
122	Burnside	LA	Gracewood	GA	CN-NLWOR-NS	2819325	$4,200	$1,888	$3,399	$3,697	$3,697
123	Lemont	IL	Edgemoor	DE	BNSF-CHGO-NS	2991315	xxx	$2,624	$4,723	xxx	xxx
124	New Johnsonville	TN	McDonough	GA	CSXT-CHATT-NS	2816130	$2,951	$928	$1,671	$1,818	$1,818
125	Charleston	IN	Woodstock	IN	NS-MEMPH CN	2812410	xxx	$1,053	$1,895	xxx	xxx
126	Reybold	DE	Albuquerque	NM	NS-STRTR-BNSF	2819315	xxx	$2,265	$4,077	xxx	xxx
127	Reybold	DE	Baltimore	MD	NS BALBV CSXT	2819315	xxx	$386	$694	xxx	xxx
128.	Reybold	DE	Blair	NE	NS-CHGO-UP	2819315	xxx	$2,102	$3,784	xxx	xxx
129	Reybold	DE	Brewton	AL	NS-BHAM CSXT	2819315	xxx	$2,376	$4,277	xxx	xxx
130	Reybold	DE	Castle Hayne	NC	NS CHLTE-CSXT	2819315	xxx	$1,649	$2,968	xxx	xxx
131.	Reybold	DE	Chino	AZ	NS-KCITY-UP	2819315	xxx	$3,023	$5,441	xxx	xxx
132	Reybold	DE	Corson	SD	NS CHGO-BNSF	2819315	xxx	$2,102	$3,784	xxx	xxx
133	Removed										
134.	Reybold	DE	Ferguson	MS	NS-MEMPHS CN	2819315	xxx	$2,745	$4,941	xxx	xxx
135	Reybold	DE	Hastings	NE	NS CHGO-BNSF	2819315	xxx	$2,102	$3,784	xxx	xxx
136	Reybold	DE	Indianapolis	IN	NS-CINTI CSXT	2819315	xxx	$1,895	$3,411	xxx	xxx
137	Reybold	DE	Omaha	NE	NS CHGO-UP	2819315	xxx	$2,102	$3,784	xxx	xxx
138	Reybold	DE	Orange	TX	NS ESTL-BNSF	2819315	xxx	$2,510	$4,517	xxx	xxx
139	Reybold	DE	Phoenix	AZ	NS STRTR-BNSF	2819315	xxx	$2,265	$4,077	xxx	xxx
140	Reybold	DE	Sioux City	IA	NS-CHGO-BNSF	2819315	xxx	$2,102	$3,784	xxx	xxx
141	Reybold	DE	Toledo	OH	NS-TOLED CSXT	2819315	xxx	$2,048	$3,687	xxx	xxx
142	Reybold	DE	Washington	WV	NS-HAGTN CSXT	2819315	xxx	$634	$1,140	xxx	xxx

1/ From Rebuttal Exhibit II-A-2
2/ MMM Ratio from Rebuttal Exhibit III-II-2 x Column (6)
3/ Greater of Column (7) or Column (8)

TAB 5

Comparison of NS Tariff Rates and
Maximum Rates Per Car for DuPont Movements - 4Q09

	Origin		Destination					4Q2009				
	City	ST	City	ST	Railroad(s)	Commodity	Tariff Rate 1/	Phase III Cost 1/	Jurisdictional Threshold 1/	SAC Rate 2/	STB Maximum Rate 3/
	(1)		(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)
Exhibit A - Local Moves											
1	Removed										
2	Bayway	NJ	Waynesville	NC	NS	2819315	xxx	$2,317	$4,171	xxx	xxx
3	Belle	WV	Danville	IL	NS	2813990	xxx	$1,689	$3,041	xxx	xxx
4	Removed										
5	Removed										
6.	Removed										
7	Removed										
8	Removed										
9	Belle	WV	Wyandotte	MI	NS	2813934	xxx	$1,263	$2,273	xxx	xxx
10	Charleston	IN	Edgemoor	DE	NS	2812815	xxx	$2,298	$4,136	xxx	xxx
11	Edgemoor	DL	Chicago	IL	NS	2816130	xxx	$2,296	$4,133	xxx	xxx
12	Edgemoor	DE	Chillicothe	OH	NS	2816130	xxx	$2,236	$4,025	xxx	xxx
13	Edgemoor	DE	Mahrt	AL	NS	2816130	xxx	$2,953	$5,315	xxx	xxx
14	Edgemoor	DE	Riverwood Intl	GA	NS	2816130	xxx	$2,679	$4,822	xxx	xxx
15	Edgemoor	DI	Wabash	IN	NS	2816130	xxx	$2,350	$4,230	xxx	xxx
16	Lemoyne	AL	Grant	SC	NS	4810560	xxx	$2,410	$4 338	xxx	xxx
17	Loudon	IN	Braithwaite	LA	NS	2818512	xxx	$1 964	$3,536	xxx	xxx
18	Louisville	KY	Decatur	IL	NS	2819450	xxx	$1 263	$2 273	xxx	xxx
19	*Louisville*	KY	*Lafayette*	IN	NS	*2819450*	xxx	$1,579	$2,842	xxx	xxx
20.	Removed										
21	Removed										
22.	McIntosh	AL	Lemoyne	AL	NS	2812220	xxx	$504	$906	xxx	xxx
23	Reybold	DE	Detroit	MI	NS	2819315	xxx	$1,840	$3,312	xxx	xxx
24	Reybold	DL	Fort Mill	SC	NS	2819315	xxx	$1,844	$3,320	xxx	xxx
25	Reybold	DL	Morrisville	PA	NS	2819315	xxx	$583	$1,050	xxx	xxx
Exhibit B - Joint Moves											
1	Belle	WV	Anaheim	CA	NS-CHGO-UP	2813980	$7,715	$1,577	$2,838	$3,087	$3,087
2.	Belle	WV	Baypon	TX	NS-ESTL-UP	2818620	$5,500	$1,979	$3,562	$3,874	$3,874
3	Removed										
4	Belle	WV	Brownsville	TX	NS-ESTL-UP	2818221	$5 500	$1,958	$3,525	$3,834	$3,834
5	Belle	WV	Burley	ID	NS-CHGO UP	2813934	$7,715	$1,577	$2,838	$3,087	$3,087
6	Belle	WV	Cadet	MO	NS-KCITY-UP	2813934	$7,875	$2,451	$4,411	$4,798	$4,798
7.	Removed										
8	Belle	WV	Channelview	TX	NS-ESTL-UP	2818130	$5,500	$1,815	$3,266	$3,553	$3,553
9	Belle	WV	City of Commerce	CA	NS-STRTR-BNSF	2818221	$8,561	$1,710	$3,078	$3,348	$3,348
10	Belle	WV	Conroe	TX	NS-ESTL-BNSF	2813934	$8,093	$1,957	$3,516	$3,824	$3 824
11	Belle	WV	Corsicana	TX	NS ESTL-UP	2813934	$8,093	$1,855	$3,340	$3,633	$3,633
12.	Removed										
13	Belle	WV	East Billings	MT	NS-CHGO-BNSF	2818130	$5,900	$1,556	$2,801	$3,047	$3,047
14	Belle	WV	Ethyl	AR	NS-ESTL-UP-MCNTT-LNW	2813934	$8,093	$1,871	$3,367	$3,663	$3,663
15.	Belle	WV	Finley	WA	NS-CHGO-BNSF	2813934	$7,715	$1,577	$2,839	$3,088	$3,088
16	Removed										
17	Belle	WV	Freeport	TX	NS-ESTL-UP	2818130	$5,500	$1,727	$3,109	$3,382	$3,382
18.	Belle	WV	Garyville	LA	NS-NLWOR CN	2813934	$10 560	$2 810	$5,058	$5,502	$5,502
19	Belle	WV	Geismar	LA	NS-NLWOR CN	2813934	$10,560	$2,573	$4,632	$5,038	$5,038
20.	Belle	WV	Janesville	WI	NS-CHGO-UP	2818131	$7,715	$1,548	$2,787	$3,031	$3 031
21.	Belle	WV	Laredo	TX	NS-ESTL-UP	2818221	$5,500	$1,958	$3,525	$3,834	$3,834
22	Belle	WV	Laredo	TX	NS-ESTL-UP	2818131	$8,093	$1,958	$3,525	$3,834	$3,834
23	Belle	WV	Lorenzo	IL	NS CHGO-BNSF	2813980	$7,715	$1,560	$2,808	$3,054	$3,054
24	Belle	WV	Los Angeles	CA	NS-STRTR-BNSF	2813934	$6,649	$1,756	$3,161	$3,439	$3,439
25	Belle	WV	Los Angeles	CA	NS-CHGO-UP	2818130	$5 900	$1,566	$2,818	$3,066	$3,066
26	Removed										
27.	Belle	WV	Midlothian	IL	NS CHGO CN	2818131	$7,715	$1,550	$2,790	$3,035	$3,035
28	Removed										
29	Belle	WV	Saint Paul	MN	NS CHGO BNSF	2818221	$5,900	$1,715	$3 086	$3,357	$3,357
30	Belle	WV	San Dimas	CA	NS CHGO-UP	2813980	$7,715	$1,685	$3,034	$3,300	$3,300
31	Removed										
32	Belle	WV	St Gabriel	LA	NS-NLWOR-CN	2813934	$10,560	$2 793	$5,028	$5,469	$5,469
33	Belle	WV	St Joseph	MO	NS-KCITY-UP	2818130	$6,165	$2 114	$4,399	$4,785	$4,785
34	Removed										
35	Belle	WV	Strang	TX	NS-ESTL-UP	2818221	$5,500	$2,032	$3,658	$3,979	$3,979
36	Belle	WV	Strang	TX	NS ESTL-BNSF	2813934	$8,093	$1,676	$3,017	$3,282	$3,282
37	Belle	WV	Strang	TX	NS-ESTL-UP	2819183	$4,157	$1,800	$3,239	$3,524	$3,524
38	Removed										
39	Belle	WV	Texas City	TX	NS-ESTL-UP	2813934	$8,093	$1,870	$3,367	$3,662	$3,662
40	Belle	WV	Vernon	MO	NS-ESTL-BNSF	2813934	$8,093	$1,940	$3,492	$3,798	$3,798
41	Belle	WV	West Memphis	AR	NS-KCITY-UP	2813933	$7,875	$2,442	$4,395	$4,781	$4,781
42.	Belle	WV	Winford Spur	LA	NS-MI RID-KCS	2813980	$8,939	$2,362	$4,252	$4,625	$4,625
43	Belle	WV	Wichita	KS	NS ESTL-BNSF	2813934	$8,093	$1,980	$3,564	$3,877	$3,877
44	Bloomington	TX	Greenville	SC	UP-NI WOR-NS	2821142	$5,713	$1,691	$3,043	$3,310	$3,310
45	Bloomington	TX	Washington; Warren	NJ	UP-ESTL-NS	2821142	$9,013	$2,352	$4,234	$4,606	$4,606

Comparison of NS Tariff Rates and Maximum Rates Per Car for DuPont Movements - 4Q09

	Origin City (1)	ST	Destination City (2)	ST	Railroad(s) (3)	Commodity (4)	4Q2009 Tariff Rate 1/ (5)	Phase III Cost 1/ (6)	Jurisdictional Threshold 1/ (7)	SAC Rate 2/ (8)	STB Maximum Rate 3/ (9)
46	Removed										
47	Charleston, Bradley	IN	Woodstock	TN	NS-MLMPH-CN	2812220	$1,911	$1,080	$1,943	$2,114	$2,114
48	Cresap	WV	Edgemoor	DE	CSXT-HAGTN-NS	2991315	$2,341	$660	$1,188	$1,292	$1,292
49	Dowling	TX	Fort Mill	SC	KCS-MERID-NS	2815112	$4,450	$1,785	$3,212	$3,494	$3,494
50	Edgemoor	DE	Garland	TX	NS-MERID-KCS	2816130	$8,200	$2,881	$5,185	$5,640	$5,640
51	Edgemoor	DE	Gross	MI	NS CHGO CN	2816130	$6,500	$2,201	$3,961	$4,309	$4,309
52	Edgemoor	DE	Laredo	TX	NS-LSTL-UP	2816130	$6,093	$2,551	$4,592	$4,996	$4,996
53	Edgemoor	DE	Madawaska	ME	NS-ROUP1-CN	2816130	$4,000	$1,316	$2,369	$2,577	$2,577
54	Edgemoor	DE	Pasadena	TX	NS-LSTL-UP	2819971	$13,600	$2,499	$4,499	$4,893	$4,893
55	Edgemoor	DE	Port Huron	MI	NS-BUFF-CN	2816130	$4,880	$1,713	$3,083	$3,353	$3,353
56	Edgemoor	DE	Portland	ME	NS MCV PAS AYERM-ST	2816130	$4,000	$1,313	$2,364	$2,571	$2,571
57	Edgemoor	DE	Portland	OR	NS-CHGO-BNSF	2816130	$6,500	$2,223	$4,002	$4,353	$4,353
58	Edgemoor	DE	Quinnesec	MI	NS CHGO CN	2816130	$6,500	$2,201	$3,961	$4,309	$4,309
59	Edgemoor	DE	Riley's	ME	NS MCV-PAS AYERM-ST	2816130	$4,000	$1,317	$2,371	$2,579	$2,579
60	*Edgemoor*	*DE*	*Rumford*	*ME*	*NS MCV PAS AYERM-ST*	*2816130*	*$4,000*	*$1,313*	$2,363	$2,571	$2,571
61	Removed										
62.	Edgemoor	DE	Shawmut	ME	NS-MCV-PAS-AYERM-ST	2816130	$4,000	$1,314	$2,366	$2,574	$2,574
63	Edgemoor	DE	Smoky	CA	NS CHGO-UP	2816130	$6,500	$2,227	$4,009	$4,361	$4,361
64	Edgemoor	DE	Smoky	CA	NS-STRTR-BNSF	2816130	$5,101	$2,396	$4,313	$4,692	$4,692
65	Edgemoor	DE	St Paul	MN	NS CHGO-UP	2816130	$6,500	$2,225	$4,004	$4,356	$4,356
66	Removed										
67	Edgemoor	DE	West Monroe	LA	NS-MERID-KCS	2816130	$8,200	$2,887	$5,196	$5,652	$5,652
68	Edgemoor	DE	Wheeling	IL	NS-CHGO-CN	2816130	$6,500	$2,214	$3,985	$4,334	$4,334
69	Enid	OK	Edgemoor	DE	BNSF-LSTL-NS	2991315	$5,364	$2,531	$4,556	$4,956	$4,956
70	Removed										
71.	Gregory	TX	Dragon	MS	UP NEWOR-NS	2813984	$2,173	$510	$917	$998	$998
72.	Removed										
73	Gregory	TX	Royce	NJ	UP-ESTL-NS	2813984	$10,123	$2,691	$4,844	$5,269	$5,269
74	Removed										
75.	Lemont	IL	Edgemoor	DE	BNSF-CHGO-NS	2991315	$4,905	$2,123	$3,821	$4,156	$4,156
76	Lemoyne	AL	Artesia	MS	NS MERID KCS	1810560	$4,800	$1,266	$2,279	$2,479	$2,479
77	McIntosh	AL	Burnside	LA	NS MOBIL-CN	2819330	$1,603	$322	$580	$630	$630
78	McIntosh	AL	Delisle	MS	NS-MOBIL-CN-HATBG-KCS	2812815	$1,700	$326	$587	$638	$638
79	McIntosh	AL	Delisle	MS	NS-MOBIL-CN-HATBG-KCS	2812220	$1,500	$331	$597	$649	$649
80	McIntosh	AL	Orange	TX	NS-NEWOR-UP	2812220	$5,000	$1,598	$2,877	$3,130	$3,130
81.	McIntosh	AL	Woodstock	TN	NS MOBIL-CN	2812220	$1,500	$331	$596	$648	$648
82	Orange	TX	Greenville	SC	UP-NEWOR-NS	2821142	$5,713	$2,065	$3,717	$4,043	$4,043
83	Orange	TX	Washington; Warren	NJ	UP-ESTL-NS	2821142	$9,013	$2,202	$3,963	$4,311	$4,311
84	Pascagoula	MS	Fort Mill	SC	MSE-MOBIL-NS	2815112	$6,000	$2,080	$3,745	$4,073	$4,073
85.	Pascagoula	MS	Lemoyne	AL	MSE-MOBIL-NS	2815112	$1,092	$282	$507	$552	$552
86	Spring	TX	Lemoyne	AL	UP-NEWOR-NS	2812350	$5,000	$1,777	$3,199	$3,479	$3,479
87	Beauharnois	PQ	Edgemoor	DE	CSXT-BUFF-NS	2812815	xxx	$1,437	$2,587	xxx	xxx
88.	Removed										
89	Belle	WV	Gainesville	GA	NS CINTI-CSXT	2813980	xxx	$1,446	$2,603	xxx	xxx
90	Belle	WV	Port Bienville	MS	NS-ATLA CSXT-ANSLB-PBVR	2813934	xxx	$2,432	$4,377	xxx	xxx
91	Belle	WV	Theodore	AL	NS CINTI CSXT	2813934	xxx	$1,437	$2,587	xxx	xxx
92	Bellwood	VA	Dallas	GA	CSXT-PIRSB-NS	2819315	xxx	$2,249	$4,048	xxx	xxx
93	Bellwood	VA	Fort Mill	SC	CSXT-CHLTL-NS	2819315	xxx	$574	$1,033	xxx	xxx
94	Bellwood	VA	Rockwell	NC	CSXT-PIRSB-NS	2819315	xxx	$963	$1,733	xxx	xxx
95	Removed										
96	Danville	VA	Ampthill	VA	NS PIRSB CSXT	3274110	xxx	$638	$1,149	xxx	xxx
97	Edgemoor	DE	New Johnsonville	TN	NS-CINTI CSXT	2816130	xxx	$2,107	$3,793	xxx	xxx
98	Enid	OK	Edgemoor	DE	BNSF-LSTL-NS	2991315	xxx	$3,103	$5,586	xxx	xxx
99	Loudon	TN	Graingers	NC	NS CHATT-CSXT	2818512	xxx	$574	$1,033	xxx	xxx
100	Loudon	TN	Graingers	NC	NS CHATT-CSXT	2818512	xxx	$439	$791	xxx	xxx
101	Miami Fort	OH	Dallas	GA	CSXT-CINTI-NS	2819315	xxx	$1,529	$2,752	xxx	xxx
102	Miami Fort	OH	Gracewood	GA	CSXT-CHATT-NS	2819325	xxx	$1,380	$2,484	xxx	xxx
103	Miami Fort	OH	McIntosh	AL	CSXT CHATT-NS	2819340	xxx	$974	$1,753	xxx	xxx
104	Removed										
105.	Removed										
106	Miami Fort	OH	Pepper	VA	CSXT-CINTI-NS	2819345	xxx	$2,046	$3,682	xxx	xxx
107	Natrium	WV	Belle	WV	CSXT-CINTI-NS	2812220	xxx	$1,481	$2,666	xxx	xxx
108.	Natrium	WV	Danville	VA	CSXT-LYNCH-NS	2812220	xxx	$382	$688	xxx	xxx
109	New Johnsonville	TN	Chapman	PA	CSXT CINTI NS	2816130	xxx	$2,091	$3,764	xxx	xxx
110	Removed										
111.	New Johnsonville	TN	Morrow	GA	CSXT-CHATT-NS	2816130	xxx	$670	$1,207	xxx	xxx
112	Niagara Falls	NY	Belle	WV	CSXT CLMBO NS	2812220	xxx	$741	$1,334	xxx	xxx
113	Niagara Falls	NY	Edgemoor	DE	CSXT-BUFF-NS	2812815	xxx	$1,450	$2,610	xxx	xxx
114	Niagara Falls	NY	Edgemoor	DE	CSXT-BUFT-NS	2812220	xxx	$1,477	$2,659	xxx	xxx

Comparison of NS Tariff Rates and Maximum Rates Per Car for DuPont Movements - 4Q09

	Origin City (1)	ST	Destination City (2)	ST	Railroad(s) (3)	Commodity (4)	4Q2009 Tariff Rate 1/ (5)	Phase III Cost 1/ (6)	Jurisdictional Threshold 1/ (7)	SAC Rate 2/ (8)	STB Maximum Rate 3/ (9)
115	Pascagoula	MS	Fort Mill	SC	CSXT-ATLA-NS	2815112	xxx	$1,191	$2,143	xxx	xxx
116	Starke	FL	Huntsville	AL	CSXT-DCTUR-NS	1441325	xxx	$287	$516	xxx	xxx
117	Starke	FL	Huntsville	AL	CSXT-DCTUR-NS	1441325	xxx	$468	$843	xxx	xxx
118	Wurtland	KY	Fort Mill	SC	CSXT-CHLTE-NS	2819315	xxx	$577	$1 038	xxx	xxx
119	Wurtland	KY	McIntosh	AL	CSXT-BHAM-NS	2819315	xxx	$780	$1,403	xxx	xxx
120	Belle	WV	Divine	IL	NS-PINE-CN	2813980	$7,502	$1,485	$2,672	$2 907	$2,907
121	Belle	WV	Mapleton	IL	NS-LOGPT-IPW	2813934	$5,843	$1,320	$2,376	$2,585	$2,585
122	Burnside	LA	Gracewood	GA	CN-NLWOR-NS	2819325	$4,200	$1,911	$3,440	$3,742	$3,742
123	Lemont	IL	Edgemoor	DE	BNSF-CHGO-NS	2991315	$5,641	$2,656	$4,780	$5,200	$5,200
124	New Johnsonville	TN	McDonough	GA	CSXT CHATT-NS	2816130	$2,951	$940	$1,691	$1,840	$1,840
125	Charleston	TN	Woodstock	TN	NS-MEMPH-CN	2812410	xxx	$1,066	$1,918	xxx	xxx
126.	Reybold	DE	Albuquerque	NM	NS STR1R-BNSF	2819315	xxx	$2,293	$4,127	xxx	xxx
127	Reybold	DE	Baltimore	MD	NS-BALBV-CSXT	2819315	xxx	$390	$702	xxx	xxx
128	Reybold	DE	Blair	NE	NS CHGO UP	2819315	xxx	$2 128	$3,830	xxx	xxx
129	Reybold	DE	Brewton	AL	NS-BHAM-CSXT	2819315	xxx	$2 405	$4,329	xxx	xxx
130	Reybold	DE	Castle Hayne	NC	NS CHLTE-CSXT	2819315	xxx	$1,669	$3,004	xxx	xxx
131	Reybold	DE	Clifton	AZ	NS KCITY-UP	2819315	xxx	$3,060	$5,507	xxx	xxx
132.	Reybold	DE	Corson	SD	NS-CHGO-BNSF	2819315	xxx	$2 128	$3,830	xxx	xxx
133	Removed										
134	Reybold	DE	Ferguson	MS	NS-MEMPHIS CN	2819315	xxx	$2 778	$5,001	xxx	xxx
135	Reybold	DE	Hastings	NE	NS-CHGO BNSF	2819315	xxx	$2,128	$3,830	xxx	xxx
136	Reybold	DE	Indianapolis	IN	NS-CINTI CSXT	2819315	xxx	$1,918	$3,453	xxx	xxx
137	Reybold	DE	Omaha	NE	NS CHGO-UP	2819315	xxx	$2 128	$3,830	xxx	xxx
138	Reybold	DE	Orange	TX	NS-ESTL-BNSF	2819315	xxx	$2,540	$4,572	xxx	xxx
139	Reybold	DE	Phoenix	AZ	NS-STR1R-BNSF	2819315	xxx	$2,293	$4,127	xxx	xxx
140	Reybold	DE	Sioux City	IA	NS CHGO BNSF	2819315	xxx	$2,128	$3,830	xxx	xxx
141.	Reybold	DE	Toledo	OH	NS-TOLED CSXT	2819315	xxx	$2,073	$3,732	xxx	xxx
142.	Reybold	DE	Washington	WV	NS-HAGTN-CSXT	2819315	xxx	$641	$1,154	xxx	xxx

1/ From Rebuttal Exhibit II-A-3

2/ MMM Ratio from Rebuttal Exhibit III-11-2 x Column (6)

3/ Greater of Column (7) or Column (8)

TAB 6

Comparison of NS Tariff Rates and
Maximum Rates Per Car for DuPont Movements - 1Q10

	Origin		Destination				1Q2010				
	City	ST	City	ST	Railroad(s)	Commodity	Tariff Rate 1/	Phase III Cost 1/	Jurisdictional Threshold 1/	SAC Rate 2/	STB Maximum Rate 3/
	(1)		(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)
Exhibit A - Local Moves											
1	Removed										
2	Bayway	NJ	Waynesville	NC	NS	2819315	xxx	$2,109	$4,157	xxx	xxx
3	Belle	WV	Danville	IL	NS	2813980	xxx	$1,686	$3,036	xxx	xxx
4	Removed										
5	Removed										
6.	Removed										
7.	Removed										
8.	Removed										
9	Belle	WV	Wyandotte	MI	NS	2813934	xxx	$1,252	$2,253	xxx	xxx
10	Charleston	IN	Edgemoor	DE	NS	2812815	xxx	$2,288	$4,118	xxx	xxx
11	Edgemoor	DE	Chicago	IL	NS	2816130	xxx	$2,289	$4,120	xxx	xxx
12	Edgemoor	DE	Chillicothe	OH	NS	2816130	xxx	$2,229	$4,011	xxx	xxx
13	Edgemoor	DE	Mahrt	AL	NS	2816130	xxx	$2,946	$5,303	xxx	xxx
14	Edgemoor	DE	Riverwood Intl	GA	NS	2816130	xxx	$2,672	$4,810	xxx	xxx
15	Edgemoor	DE	Wabash	IN	NS	2816130	xxx	$2,343	$4,217	xxx	xxx
16	Lemoyne	AL	Giant	SC	NS	4810560	xxx	$2,410	$4,338	xxx	xxx
17	Loudon	TN	Braithwaite	LA	NS	2818512	xxx	$1,965	$3,538	xxx	xxx
18	Louisville	KY	Decatur	IL	NS	2819450	xxx	$1,254	$2,258	xxx	xxx
19	Louisville	KY	Lafayette	IN	NS	2819450	xxx	$1,571	$2,827	xxx	xxx
20	Removed										
21.	Removed										
22	McIntosh	AL	Lemoyne	AL	NS	2812220	xxx	$495	$890	xxx	xxx
23	Reybold	DE	Detroit	MI	NS	2819315	xxx	$1,831	$3,295	xxx	xxx
24	Reybold	DE	Fort Mill	SC	NS	2819315	xxx	$1,835	$3,303	xxx	xxx
25.	Reybold	DE	Morrisville	PA	NS	2819315	xxx	$574	$1,033	xxx	xxx
Exhibit B - Joint Moves											
1	Belle	WV	Anaheim	CA	NS-CHGO-UP	2813980	$7,715	$1,577	$2,839	$2,721	$2,839
2	Belle	WV	Bayport	TX	NS-ESTL-UP	2818620	$5,500	$1,984	$3,570	$3,422	$3,570
3	Removed										
4	Belle	WV	Brownsville	TX	NS-ESTL-UP	2818221	$5,500	$1,962	$3,531	$3,384	$3,531
5	Belle	WV	Burley	ID	NS-CHGO-UP	2813934	$7,715	$1,577	$2,839	$2,721	$2,839
6.	Belle	WV	Cadet	MO	NS-KCITY-UP	2813934	$7,875	$2,455	$4,420	$4,235	$4,420
7.	Removed										
8	Belle	WV	Channelview	TX	NS-LSTL-UP	2818130	$5,500	$1,815	$3,268	$3,132	$3,268
9	Belle	WV	City of Commerce	CA	NS-STRTR-BNSF	2818221	$8,561	$1,712	$3,082	$2,953	$3,082
10	Belle	WV	Conroe	TX	NS-LSTL-BNSF	2813934	$8,093	$1,956	$3,520	$3,374	$3,520
11	Belle	WV	Corsicana	TX	NS-ESTL-UP	2813934	$8,093	$1,857	$3,343	$3,204	$3,343
12	Removed										
13.	Belle	WV	East Billings	MT	NS-CHGO-BNSF	2818130	$5,900	$1,557	$2,802	$2,685	$2,802
14	Belle	WV	Ethyl	AR	NS-LSTL-UP-MCNEIL-LNW	2813934	$8,093	$1,873	$3,371	$3,231	$3,371
15	Belle	WV	Fairley	WA	NS-CHGO-BNSF	2813934	$7,715	$1,578	$2,840	$2,722	$2,840
16	Removed										
17	Belle	WV	Freeport	TX	NS-LSTL-UP	2818130	$5,500	$1,726	$3,107	$2,978	$3,107
18	Belle	WV	Garyville	LA	NS-NLWOR-CN	2813934	$10,560	$2,815	$5,068	$4,857	$5,068
19	Belle	WV	Geismar	LA	NS-NLWOR-CN	2813934	$10,560	$2,579	$4,642	$4,449	$4,642
20	Belle	WV	Janesville	WI	NS-CHGO-UP	2818131	$7,715	$1,541	$2,774	$2,658	$2,774
21.	Belle	WV	Laredo	TX	NS-ESTL-UP	2818221	$5,500	$1,962	$3,531	$3,384	$3,531
22	Belle	WV	Laredo	TX	NS-LSTL-UP	2818131	$8,093	$1,962	$3,531	$3,384	$3,531
23.	Belle	WV	Lorenzo	IL	NS-CHGO-BNSF	2813980	$7,715	$1,560	$2,808	$2,691	$2,808
24	Belle	WV	Los Angeles	CA	NS-STRTR-BNSF	2813934	$6,649	$1,758	$3,165	$3,033	$3,165
25	Belle	WV	Los Angeles	CA	NS-CHGO-UP	2818130	$5,900	$1,566	$2,819	$2,701	$2,819
26	Removed										
27	Belle	WV	Millsdale	IL	NS-CHGO-CN	2818131	$7,715	$1,542	$2,776	$2,661	$2,776
28.	Removed										
29	Belle	WV	Saint Paul	MN	NS-CHGO-BNSF	2818221	$5,900	$1,719	$3,094	$2,965	$3,094
30	Belle	WV	San Dimas	CA	NS-CHGO-UP	2813980	$7,715	$1,687	$3,036	$2,910	$3,036
31	Removed										
32	Belle	WV	St Gabriel	LA	NS-NLWOR-CN	2813934	$10,560	$2,799	$5,038	$4,828	$5,038
33	Belle	WV	St Joseph	MO	NS-KCITY-UP	2818130	$6,465	$2,348	$4,406	$4,222	$4,406
34	Removed										
35	Belle	WV	Strang	TX	NS-ESTL-UP	2818221	$5,500	$2,038	$3,669	$3,516	$3,669
36	Belle	WV	Strang	TX	NS-LSTL-BNSF	2813934	$8,093	$1,671	$3,012	$2,887	$3,012
37	Belle	WV	Strang	TX	NS-ESTL-UP	2819187	$4,157	$1,791	$3,224	$3,090	$3,224
38	Removed										
39	Belle	WV	Texas City	TX	NS-LSTL-UP	2813934	$8,093	$1,873	$3,371	$3,230	$3,371
40	Belle	WV	Verona	MO	NS-ESTL-BNSF	2813934	$8,093	$1,942	$3,496	$3,350	$3,496
41	Belle	WV	West Memphis	AR	NS-KCITY-UP	2813934	$7,875	$2,446	$4,404	$4,220	$4,404
42	Belle	WV	Winfield Spur	LA	NS-MERID KCS	2813980	$8,939	$2,367	$4,260	$4,083	$4,260
43	Belle	WV	Wichita	KS	NS-LSTL-BNSF	2813934	$8,093	$1,983	$3,569	$3,420	$3,569
44	Bloomington	TX	Greenville	SC	UP-NLWOR-NS	2821142	$5,713	$1,703	$3,065	$2,937	$3,065
45	Bloomington	TX	Washington, Warren	NJ	UP-ESTL-NS	2821142	$9,013	$2,374	$4,273	$4,095	$4,273

Comparison of NS Tariff Rates and Maximum Rates Per Car for DuPont Movements - 1Q10

	Origin		Destination					1Q2010				
	City	ST	City	ST	Railroad(s)	Commodity	Tariff Rate 1/	Phase III Cost 1/	Jurisdictional Threshold 1/	SAC Rate 2/	STB Maximum Rate 3/
	(1)		(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)
46.	Removed										
47	Charleston, Bradley	TN	Woodstock	TN	NS-MEMPH CN	2812220	$1,911	$1,086	$1,954	$1 873	$1 954
48	Cresap	WV	Edgemoor	DE	CSXT-HAGTN-NS	2991315	$2,341	$660	$1,189	$1,139	$1,189
49	Dowling	TX	Fort Mill	SC	KCS-MERID-NS	2815112	$4,450	$1,785	$3,214	$3,080	$3,214
50.	Edgemoor	DE	Garland	TX	NS MERID-KCS	2816130	$8,200	$2,877	$5,179	$4,963	$5,179
51	Edgemoor	DE	Gross	MI	NS-CHGO-CN	2816130	$6,500	$2,197	$3,954	$3,789	$3 954
52.	Edgemoor	DE	Laredo	TX	NS-LSTL-UP	2816130	$6,093	$2,546	$4,582	$4,391	$4,582
53	Edgemoor	DE	Muskegon	MI	NS-ROUPT-CN	2816130	$4,000	$1,311	$2,360	$2,262	$2,360
54	Edgemoor	DE	Pasadena	TX	NS-LSTL-UP	2819971	$13,600	$2,192	$4,486	$4,299	$4,486
55.	Edgemoor	DE	Port Huron	MI	NS-BUFF-CN	2816130	$4,880	$1,708	$3,075	$2,947	$3,075
56.	Edgemoor	DE	Portland	MI	NS-MCV-PAS-AVI RM-ST	2816130	$4,000	$1,308	$2,355	$2,257	$2,355
57	Edgemoor	DE	Portland	OR	NS CHGO BNSF	2816130	$6,500	$2,219	$3,995	$3,829	$3 995
58	Edgemoor	DE	Quinnesec	MI	NS-CHGO CN	2816130	$6,500	$2,197	$3,954	$3,789	$3,954
59	Edgemoor	DE	Raley	MI	NS-MCV-PAS AVI-RM-ST	2816130	$4,000	$1,312	$2,362	$2,264	$2,362
60	Edgemoor	DE	Rumford	ME	NS-MCV-PAS-AVI RM-ST	2816130	$4,000	$1,308	$2,355	$2,257	$2,355
61	Removed										
62	Edgemoor	DE	Shawmut	ME	NS-MCV-PAS-AVI RM-ST	2816130	$4,000	$1,310	$2,357	$2,259	$2 357
63	Edgemoor	DE	Shoboy	CA	NS-CHGO-UP	2816130	$6,500	$2,224	$4,003	$3,836	$4,003
64	Edgemoor	DE	Shoboy	CA	NS-STR TR-BNSF	2816130	$5,101	$2,393	$4,307	$4,128	$4,307
65	Edgemoor	DE	St Paul	MN	NS CHGO-UP	2816130	$6,500	$2,221	$3,997	$3,831	$3,997
66.	Removed										
67	Edgemoor	DE	West Monroe	LA	NS-MERID-KCS	2816130	$8,200	$2,883	$5,190	$4,974	$5,190
68	Edgemoor	DE	Wheeling	IL	NS-CHGO-CN	2816130	$6 500	$2 208	$3,974	$3,809	$3,974
69	Enid	OK	Edgemoor	DE	BNSF-LSTL-NS	2991315	$5,364	$2 557	$4,603	$4,411	$4,603
70	Removed										
71	Gregory	TX	Dragon	MS	UP-NEWOR-NS	2813984	$2,373	$506	$910	$872	$910
72	Removed										
73	Gregory	TX	Royce	NJ	UP-LSTL-NS	2813984	$10,123	$2,699	$4,858	$4,656	$4,858
74	Removed										
75	Lemont	IL	Edgemoor	DE	BNSF-CHGO NS	2991315	$4,905	$2 119	$3,813	$3,655	$3,813
76.	Lemoyne	AL	Artesia	MS	NS-MERID-KCS	4810560	$4,800	$1,253	$2,255	$2,161	$2,255
77.	McIntosh	AL	Burnside	LA	NS MOBIL-CN	2819330	$1,603	$316	$569	$545	$569
78.	McIntosh	AL	Delisle	MS	NS MOBIL-CN-HATBG-KCS	2812815	$1,700	$320	$576	$552	$576
79	McIntosh	AL	Delisle	MS	NS MOBIL-CN-HATBG-KCS	2812220	$1,500	$326	$586	$562	$586
80	McIntosh	AL	Orange	TX	NS-NEWOR-UP	2812220	$5,000	$1,595	$2,871	$2,751	$2 871
81	McIntosh	AL	Woodstock	TN	NS MOBIL-CN	2812220	$1,500	$325	$586	$561	$586
82	Orange	TX	Greenville	SC	UP-NEWOR-NS	2821142	$5,713	$2,075	$3 735	$3 579	$3,735
83.	Orange	TX	Washington, Warren	NJ	UP-LSTL-NS	2821142	$9,013	$2,217	$3,991	$3,825	$3,991
84	Pascagoula	MS	Fort Mill	SC	MSB-MOBIL-NS	2815112	$6,000	$2,073	$3 731	$3,576	$3,731
85	Pascagoula	MS	Lemoyne	AL	MSB-MOBIL-NS	2815112	$1,092	$276	$498	$477	$498
86.	Strang	TX	Lemoyne	AL	UP-NEWOR-NS	2812350	$5,000	$1,782	$3,207	$3,073	$3,207
87.	Beauharnois	PQ	Edgemoor	DE	CSXT BUFF-NS	2812815	xxx	$1,432	$2,577	xxx	xxx
88	Removed										
89	Belle	WV	Gainesville	GA	NS-CINTI CSXT	2813980	xxx	$1,446	$2,603	xxx	xxx
90	Belle	WV	Port Bienville	MS	NS-ATLA-CSXT-ANSLEY-PBVR	2813934	xxx	$2,436	$4,385	xxx	xxx
91	Belle	WV	Theodore	AL	NS CINTI CSXT	2813934	xxx	$1,437	$2,587	xxx	xxx
92	Bellwood	VA	Dallas	GA	CSXT-PTRSB-NS	2819315	xxx	$2,241	$4,034	xxx	xxx
93.	Bellwood	VA	Fort Mill	SC	CSXT-CHLTE-NS	2819315	xxx	$569	$1,023	xxx	xxx
94	Bellwood	VA	Rockwell	NC	CSXT-PTRSB-NS	2819315	xxx	$956	$1,721	xxx	xxx
95.	Removed										
96	Danville	VA	Amphill	VA	NS-PTRSB-CSXT	3274110	xxx	$628	$1,131	xxx	xxx
97.	Edgemoor	DE	New Johnsonville	TN	NS-CINTI CSXT	2816130	xxx	$2,103	$3 786	xxx	xxx
98	Enid	OK	Edgemoor	DE	BNSF-LSTL-NS	2991315	xxx	$3,088	$5,558	xxx	xxx
99.	Loudon	TN	Grangers	NC	NS-CHATT-CSXT	2818512	xxx	$568	$1,022	xxx	xxx
100	Loudon	TN	Grangers	NC	NS-CHATT-CSXT	2818512	xxx	$435	$783	xxx	xxx
101.	Miami Fort	OH	Dallas	GA	CSXT CINTI NS	2819315	xxx	$1,522	$2,739	xxx	xxx
102	Miami Fort	OH	Gracewood	GA	CSXT-CHATT-NS	2819325	xxx	$1,374	$2,473	xxx	xxx
103	Miami Fort	OH	McIntosh	AL	CSXT-CHATT-NS	2819340	xxx	$966	$1,738	xxx	xxx
104	Removed										
105.	Removed										
106.	Miami Fort	OH	Pepper	VA	CSXT-CINTI-NS	2819345	xxx	$2 036	$3,665	xxx	xxx
107	Natrium	WV	Belle	WV	CSXT CINTI-NS	2812220	xxx	$1,477	$2,659	xxx	xxx
108	Natrium	WV	Danville	VA	CSXT-LYNCH-NS	2812220	xxx	$376	$678	xxx	xxx
109	New Johnsonville	TN	Chapman	PA	CSXT-CINTI-NS	2816130	xxx	$2,087	$3,756	xxx	xxx
110.	Removed										
111	New Johnsonville	TN	Morrow	GA	CSXT-CHATT-NS	2816130	xxx	$665	$1,197	xxx	xxx
112.	Niagara Falls	NY	Belle	WV	CSXT COLMBO NS	2812220	xxx	$736	$1,325	xxx	xxx
113	Niagara Falls	NY	Edgemoor	DE	CSXT-BUFF-NS	2812815	xxx	$1,456	$2,620	xxx	xxx
114	Niagara Falls	NY	Edgemoor	DE	CSXT-BUFF-NS	2812220	xxx	$1,485	$2,671	xxx	xxx

Comparison of NS Tariff Rates and
Maximum Rates Per Car for DuPont Movements - 1Q10

	Origin		Destination				1Q2010				
	City	ST	City	ST	Railroad(s)	Commodity	Tariff Rate 1/	Phase III Cost 1/	Jurisdictional Threshold 1/	SAC Rate 2/	STB Maximum Rate 3/
	(1)		(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)
115	Pascagoula	MS	Fort Mill	SC	CSXT-ATLA-NS	2815112	xxx	$1,184	$2,131	xxx	xxx
116	Starke	FL	Hunsville	AL	CSXT-DCTUR-NS	1441325	xxx	$283	$509	xxx	xxx
117	Starke	FL	Hunsville	AL	CSXT-DCTUR-NS	1441325	xxx	$435	$783	xxx	xxx
118	Wurtland	KY	Fort Mill	SC	CSXT-CHLTE-NS	2819315	xxx	$571	$1,028	xxx	xxx
119	Wurtland	KY	McIntosh	AL	CSXT-BHAM-NS	2819315	xxx	$774	$1,394	xxx	xxx
120	Belle	WV	Divine	IL	NS-PINE-CN	2813980	$7,502	$1,484	$2,672	$2,560	$2,672
121	Belle	WV	Mapleton	IL	NS-LOGPT-IPW	2813931	$5,843	$1,315	$2,368	$2,269	$2,368
122	Burnside	LA	Gracewood	GA	CN-NLWOR-NS	2819325	$4,200	$1,903	$3,425	$3,283	$3,425
123	Lemont	IL	Edgemoor	DE	BNSF CHGO NS	2991315	$5,641	$2,614	$4,705	$4,509	$4,705
124	New Johnsonville	TN	McDonough	GA	CSXT CHATT-NS	2816130	$2,951	$934	$1,682	$1,612	$1,682
125	Charleston	TN	Woodstock	IN	NS-MEMPH-CN	2812410	xxx	$1,071	$1,928	xxx	xxx
126	Reybold	DE	Albuquerque	NM	NS-STRTR-BNSF	2819315	xxx	$2,287	$4,117	xxx	xxx
127	Reybold	DE	Baltimore	MD	NS BALBV-CSXT	2819315	xxx	$384	$690	xxx	xxx
128	Reybold	DE	Blair	NE	NS CHGO-UP	2819315	xxx	$2,122	$3,820	xxx	xxx
129	Reybold	DE	Brewton	AL	NS-BHAM CSXT	2819315	xxx	$2,399	$4,318	xxx	xxx
130	Reybold	DE	Castle Hayne	NC	NS-CHLTE-CSXT	2819315	xxx	$1,663	$2,993	xxx	xxx
131	Reybold	DE	Clifton	AZ	NS-KCITY-UP	2819315	xxx	$3,054	$5,497	xxx	xxx
132	Reybold	DE	Corson	SD	NS CHGO-BNSF	2819315	xxx	$2,122	$3,819	xxx	xxx
133	Removed										
134	Reybold	DE	Ferguson	MS	NS MEMPHIS CN	2819315	xxx	$2,772	$4,990	xxx	xxx
135	Reybold	DE	Hastings	NE	NS CHGO-BNSF	2819315	xxx	$2,122	$3,819	xxx	xxx
136	Reybold	DE	Indianapolis	IN	NS-CINTI CSXT	2819315	xxx	$1,912	$3,442	xxx	xxx
137	Reybold	DE	Omaha	NE	NS-CHGO-UP	2819315	xxx	$2,122	$3,820	xxx	xxx
138	Reybold	DE	Orange	TX	NS BATL-BNSF	2819315	xxx	$2,534	$4,562	xxx	xxx
139	Reybold	DE	Phoenix	AZ	NS STRTR-BNSF	2819315	xxx	$2,287	$4,116	xxx	xxx
140	Reybold	DE	Sioux City	IA	NS CHGO-BNSF	2819315	xxx	$2,122	$3,819	xxx	xxx
141	Reybold	DE	Toledo	OH	NS-TOLED CSXT	2819315	xxx	$2,027	$3,649	xxx	xxx
142	Reybold	DE	Washington	WV	NS HAGTN-CSXT	2819315	xxx	$635	$1,144	xxx	xxx

1/ From Rebuttal Exhibit II-A-4
2/ MMM Ratio from Rebuttal Exhibit III-H-2 x Column (6)
3/ Greater of Column (7) or Column (8)

TAB 7

Comparison of NS Tariff Rates and
Maximum Rates Per Car for DuPont Movements - 2Q10

	Origin		Destination					2Q2010				
	City	St	City	St	Railroad(s)	Commodity	Tariff Rate 1/	Phase III Cost 1/	Jurisdictional Threshold 1/	SAC Rate 2/	STB Maximum Rate 3/
	(1)		(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)
Exhibit A - Local Moves											
1	Removed										
2	Bayway	NJ	Waynesville	NC	NS	2819315	$12,014	$2,335	$4,204	$4,028	$4,204
3	Belle	WV	Danville	IL	NS	2813980	$4,626	$1,705	$3,070	$2,942	$3,070
4	Removed										
5	Removed										
6	Removed										
7	Removed										
8	Removed										
9	Belle	WV	Wyandotte	MI	NS	2813934	$6,264	$1,266	$2,278	$2,183	$2,278
10	Charleston	IN	Edgemoor	DE	NS	2812815	$13,636	$2,313	$4,164	$3,991	$4,164
11	Edgemoor	DE	Chicago	IL	NS	2816130	$9,200	$2,311	$4,166	$3,992	$4,166
12	Edgemoor	DE	Chillicothe	OH	NS	2816130	$6,084	$2,254	$4,056	$3,887	$4,056
13	Edgemoor	DE	Mahrt	AL	NS	2816130	$11,566	$2,979	$5,363	$5,139	$5,363
14	Edgemoor	DE	Riverwood Intl	GA	NS	2816130	$5,860	$2,702	$4,864	$4,661	$4,864
15	Edgemoor	DE	Wabash	IN	NS	2816130	$6,193	$2,369	$4,264	$4,087	$4,264
16	Lemoyne	AL	Giant	SC	NS	4810560	$4,800	$2,437	$4,386	$4,203	$4,386
17	Loudon	TN	Braithwaite	LA	NS	2818512	$4,125	$1,987	$3,577	$3,428	$3,577
18	Louisville	KY	Decatur	IL	NS	2819450	$3,302	$1,268	$2,283	$2,188	$2,283
19	Louisville	KY	Lafayette	IN	NS	2819450	$3,752	$1,588	$2,859	$2,740	$2,859
20	Removed										
21	Removed										
22	McIntosh	AL	Lemoyne	AL	NS	2812220	$1,500	$500	$900	$863	$900
23	Reybold	DE	Detroit	MI	NS	2819315	xxx	$1,851	$3,332	xxx	xxx
24	Reybold	DE	Fort Mill	SC	NS	2819315	xxx	$1,856	$3,340	xxx	xxx
25	Reybold	DE	Morrisville	PA	NS	2819315	xxx	$580	$1,045	xxx	xxx
Exhibit B - Joint Moves											
1	Belle	WV	Anaheim	CA	NS CHGO-UP	2813980	$7,937	$1,595	$2,871	$2,751	$2,871
2	Belle	WV	Bayport	TX	NS-LSTL-UP	2818620	$5,500	$2,006	$3,611	$3,460	$3,611
3	Removed										
4	Belle	WV	Brownsville	TX	NS-LSTL-UP	2818221	$5,579	$1,984	$3,571	$3,422	$3,571
5	Belle	WV	Burley	ID	NS CHGO-UP	2813934	$7,715	$1,595	$2,871	$2,751	$2,871
6	Belle	WV	Cadet	MO	NS-KCITY-UP	2813934	$8,495	$2,483	$4,469	$4,283	$4,469
7	Removed										
8	Belle	WV	Channelview	TX	NS-LSTL-UP	2818130	$5,569	$1,836	$3,304	$3,167	$3,304
9	Belle	WV	City of Commerce	CA	NS-STRTR-BNSF	2818221	$8,561	$1,731	$3,116	$2,986	$3,116
10	Belle	WV	Conroe	TX	NS LSTL-BNSI	2813934	$8,214	$1,978	$3,560	$3,412	$3,560
11	Belle	WV	Corsicana	TX	NS-LSTL-UP	2813934	$8,093	$1,878	$3,381	$3,240	$3,381
12	Removed										
13	Belle	WV	East Billings	MT	NS-CHGO-BNSI	2818130	$5,900	$1,574	$2,833	$2,715	$2,833
14	Belle	WV	Ethyl	AR	NS-LSTL-UP-MCNTL-LNW	2813934	$8,161	$1,894	$3,409	$3,267	$3,409
15	Belle	WV	Finley	WA	NS CHGO-BNSI	2813934	$8,975	$1,596	$2,872	$2,752	$2,872
16	Removed										
17	Belle	WV	Freeport	TX	NS LSTL-UP	2818130	$5,500	$1,745	$3,142	$3,011	$3,142
18	Belle	WV	Garyville	LA	NS-NLWOR-CN	2813934	$11,892	$2,847	$5,125	$4,911	$5,125
19	Belle	WV	Geismar	LA	NS-NLWOR-CN	2813934	$11,262	$2,608	$4,695	$4,499	$4,695
20	Belle	WV	Janesville	WI	NS-CHGO-UP	2818131	$7,715	$1,558	$2,805	$2,688	$2,805
21	Belle	WV	Laredo	TX	NS LSTL-UP	2818221	$5,579	$1,984	$3,571	$3,422	$3,571
22	Belle	WV	Laredo	TX	NS LSTL-UP	2818131	$8,252	$1,984	$3,571	$3,422	$3,571
23	Belle	WV	Lorenzo	IL	NS CHGO-BNSF	2813980	$7,715	$1,577	$2,839	$2,721	$2,839
24	Belle	WV	Los Angeles	CA	NS-STRTR-BNSI	2813934	$7,283	$1,778	$3,200	$3,067	$3,200
25	Belle	WV	Los Angeles	CA	NS CHGO-UP	2818130	$5,917	$1,584	$2,851	$2,732	$2,851
26	Removed										
27	Belle	WV	Millsdale	IL	NS CHGO-CN	2818131	$7,967	$1,560	$2,807	$2,690	$2,807
28	Removed										
29	Belle	WV	Saint Paul	MN	NS CHGO-BNSF	2818221	$5,917	$1,738	$3,129	$2,998	$3,129
30	Belle	WV	San Dimas	CA	NS CHGO-UP	2813980	$8,975	$1,706	$3,071	$2,943	$3,071
31	Removed										
32	Belle	WV	St Gabriel	LA	NS NLWOR-CN	2813934	$11,226	$2,830	$5,094	$4,882	$5,094
33	Belle	WV	St Joseph	MO	NS-KCITY-UP	2818130	$6,465	$2,475	$4,455	$4,269	$4,455
34	Removed										
35	Belle	WV	Strang	TX	NS-LSTL-UP	2818221	$5,590	$2,061	$3,710	$3,556	$3,710
36	Belle	WV	Strang	TX	NS-LSTL-BNSI	2813934	$8,093	$1,692	$3,046	$2,919	$3,046
37	Belle	WV	Strang	TX	NS-LSTL-UP	2819183	$4,157	$1,811	$3,260	$3,124	$3,260
38	Removed										
39	Belle	WV	Texas City	TX	NS LSTL-UP	2813934	$8,093	$1,894	$3,409	$3,267	$3,409
40	Belle	WV	Verona	MO	NS-LSTL-BNSI	2813934	$8,660	$1,964	$3,535	$3,388	$3,535
41	Belle	WV	West Memphis	AR	NS-KCITY-UP	2813934	$7,875	$2,474	$4,453	$4,267	$4,453
42	Belle	WV	Winfield Spur	LA	NS-MP BID-KCS	2813980	$8,939	$2,393	$4,308	$4,128	$4,308
43	Belle	WV	Wichita	KS	NS-LSTL-BNSI	2813934	$9,000	$2,005	$3,609	$3,459	$3,609
44	Bloomington	IN	Greenville	SC	UP-NLWOR-NS	2821142	$5,713	$1,722	$3,099	$2,970	$3,099
45	Bloomington	IN	Washington Warren	NJ	UP LSTL-NS	2821142	$9,013	$2,400	$4,321	$4,141	$4,321

Comparison of NS Tariff Rates and
Maximum Rates Per Car for DuPont Movements - 2Q10

	Origin		Destination					2Q2010				
	City	ST	City	ST	Railroad(s)	Commodity	Tariff Rate 1/	Phase III Cost 1/	Jurisdictional Threshold 1/	SAC Rate 2/	STB Maximum Rate 3/
	(1)		(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)
46	Removed										
47	Charleston, Bradley	IN	Woodstock	IN	NS-MLMPH-CN	2812220	$3,000	$1,098	$1,976	$1,894	$1,976
48	Cresap	WV	Edgemoor	DE	CSXT-HAGTN-NS	2991315	$2,519	$668	$1,202	$1,152	$1,202
49	Dowling	TX	Fort Mill	SC	KCS-MLRID-NS	2815112	$4,450	$1,805	$3,250	$3,114	$3,250
50	Edgemoor	DE	Garland	TX	NS-MLRID-KCS	2816130	$8,200	$2,910	$5,237	$5,019	$5,237
51	Edgemoor	DE	Genesee	MI	NS CHGO CN	2816130	$6,976	$2,221	$3,999	$3,832	$3,999
52	Edgemoor	DE	Laredo	TX	NS-LSTL-UP	2816130	$6,828	$2,574	$4,634	$4,441	$4,634
53	Edgemoor	DE	Madawaska	ME	NS-ROUP1-CN	2816130	$4,088	$1,326	$2,387	$2,287	$2,387
54	Edgemoor	DE	Pasadena	TX	NS-LSTL-UP	2819971	$13,733	$2,520	$4,536	$4,347	$4,536
55	Edgemoor	DE	Port Huron	MI	NS-BUFF-CN	2816130	$5,171	$1,727	$3,109	$2,980	$3,109
56	Edgemoor	DE	Portland	ME	NS-MCV-PAS-AYLRM-ST	2816130	$4,140	$1,323	$2,381	$2,282	$2,381
57	Edgemoor	DE	Portland	OR	NS CHGO BNSF	2816130	$7,100	$2,244	$4,040	$3,872	$4,040
58	Edgemoor	DE	Quinnesec	MI	NS CHGO CN	2816130	$6,500	$2,221	$3,998	$3,832	$3,998
59	Edgemoor	DE	Riley	ME	NS-MCV-PAS-AYERM-ST	2816130	$4,140	$1,327	$2,388	$2,289	$2,388
60	Edgemoor	DE	Rumford	ME	NS-MCV-PAS AYERM ST	2816130	$4,233	$1,323	$2,381	$2,282	$2,381
61.	Removed										
62	Edgemoor	DE	Shawmut	ME	NS-MCV-PAS-AYLRM-ST	2816130	$4,140	$1,324	$2,384	$2,284	$2,384
63.	Edgemoor	DE	Stanley	CA	NS CHGO-UP	2816130	$6,500	$2,249	$4,047	$3,879	$4,047
64	Edgemoor	DE	Stanley	CA	NS-STRTR-BNSF	2816130	$5,101	$2,420	$4,356	$4,174	$4,356
65	Edgemoor	DE	St Paul	MN	NS CHGO UP	2816130	$6,950	$2,246	$4,042	$3,874	$4,042
66	Removed										
67.	Edgemoor	DE	West Monroe	LA	NS-MLRID-KCS	2816130	$8,286	$2,916	$5,248	$5,030	$5,248
68	Edgemoor	DE	Wheeling	IL	NS CHGO CN	2816130	$6,745	$2,233	$4,019	$3,851	$4,019
69	Enid	OK	Edgemoor	DE	BNSF-ESTL-NS	2991315	$5,881	$2,586	$4,655	$4,461	$4,655
70	Removed										
71	Gregory	TX	Dragon	MS	UP NEWOR NS	2813984	$2,387	$511	$920	$882	$920
72	Removed										
73.	Gregory	TX	Royce	NJ	UP-LSTL-NS	2813984	$11,325	$2,729	$4,913	$4,708	$4,913
74	Removed										
75	Lemont	IL	Edgemoor	DE	BNSF CHGO-NS	2991315	$5,223	$2,142	$3,856	$3,695	$3,856
76.	Lemoyne	AL	Artesia	MS	NS-MLRID-KCS	4810560	$5,432	$1,267	$2,280	$2,185	$2,280
77	McIntosh	AL	Burnside	LA	NS-MOBIL-CN	2819330	$1,645	$320	$575	$551	$575
78.	McIntosh	AL	Delisle	MS	NS-MOBIL-CN-HATBG-KCS	2812815	$1,700	$324	$583	$559	$583
79.	McIntosh	AL	Delisle	MS	NS-MOBIL-CN-HATBG-KCS	2812220	$1,535	$329	$593	$568	$593
80	McIntosh	AL	Orange	TX	NS-NEWOR-UP	2812220	$5,635	$1,613	$2,903	$2,782	$2,903
81	McIntosh	AL	Woodstock	IN	NS-MOBIL-CN	2812220	$1,535	$329	$592	$567	$592
82	Orange	TX	Greenville	SC	UP-NEWOR NS	2821142	$5,713	$2,098	$3,777	$3,619	$3,777
83.	Orange	TX	Washington Warren	NJ	UP-LSTL-NS	2821142	$9,013	$2,242	$4,036	$3,868	$4,036
84	Pascagoula	MS	Fort Mill	SC	MSE-MOBIL-NS	2815112	$6,052	$2,096	$3,773	$3,616	$3,773
85	Pascagoula	MS	Lemoyne	AL	MSE-MOBIL-NS	2815112	$1,353	$280	$503	$482	$503
86	Sunray	TX	Lemoyne	AL	UP NEWOR-NS	2812350	$5,038	$1,801	$3,243	$3,108	$3,243
87.	Beauharnois	PQ	Edgemoor	DE	CSXT-BUFF-NS	2812815	$7,022	$1,448	$2,606	$2,497	$2,606
88	Removed										
89	Belle	WV	Gainesville	GA	NS CINTI CSXT	2813980	$7,281	$1,463	$2,633	$2,523	$2,633
90	Belle	WV	Port Bienville	MS	NS-ATLA CSXT-ANSLE-PBVR	2813934	$9,585	$2,464	$4,434	$4,250	$4,434
91	Belle	WV	Theodore	AL	NS CINTI CSXT	2813934	$7,281	$1,453	$2,616	$2,507	$2,616
92	Bellwood	VA	Dallas	GA	CSXT-PTRSB-NS	2819315	$5,051	$2,266	$4,079	$3,909	$4,079
93	Bellwood	VA	Fort Mill	SC	CSXT CHLTE-NS	2819315	$992	$575	$1,035	$992	$1,035
94	Bellwood	VA	Rockwell	NC	CSXT PTRSB-NS	2819315	$2,700	$967	$1,740	$1,668	$1,740
95	Removed										
96	Danville	VA	Amphill	VA	NS-PTRSB-CSXT	3271110	$1,585	$636	$1,144	$1,096	$1,144
97	Edgemoor	DE	New Johnsonville	TN	NS-CINTI CSXT	2816130	$8,966	$2,127	$3,828	$3,669	$3,828
98	Enid	OK	Edgemoor	DE	BNSF-LSTL-NS	2991315	$6,986	$3,123	$5,621	$5,387	$5,621
99	Loudon	TN	Graingers	NC	NS CHATT CSXT	2818512	$1,490	$574	$1,033	$990	$1,033
100	Loudon	TN	Graingers	NC	NS CHATT-CSXT	2818512	$1,684	$440	$792	$759	$792
101	Miami Fort	OH	Dallas	GA	CSXT-CINTI-NS	2819315	$3,532	$1,519	$2,770	$2,655	$2,770
102	Miami Fort	OH	Gracewood	GA	CSXT-CHATT-NS	2819325	$5,400	$1,389	$2,501	$2,397	$2,501
103	Miami Fort	OH	McIntosh	AL	CSXT-CHATT-NS	2819340	$5,638	$976	$1,758	$1,684	$1,758
104	Removed										
105	Removed										
106	Miami Fort	OH	Pepper	VA	CSXT-CINTI-NS	2819345	$3,000	$2,059	$3,706	$3,552	$3,706
107	Natrium	WV	Belle	WV	CSXT-CINTI-NS	2812220	$4,800	$1,494	$2,689	$2,577	$2,689
108	Natrium	WV	Danville	VA	CSXT-LYNCH-NS	2812220	$2,520	$381	$685	$657	$685
109	New Johnsonville	TN	Chapman	PA	CSXT CINTI-NS	2816130	$7,151	$2,110	$3,798	$3,640	$3,798
110	Removed										
111	New Johnsonville	TN	Morrow	GA	CSXT-CHATT-NS	2816130	$4,500	$672	$1,210	$1,160	$1,210
112	Niagara Falls	NY	Belle	WV	CSXT-CLMBO-NS	2812220	$3,000	$744	$1,340	$1,284	$1,340
113	Niagara Falls	NY	Edgemoor	DE	CSXT-BUFF-NS	2812815	$7,022	$1,472	$2,650	$2,539	$2,650
114	Niagara Falls	NY	Edgemoor	DE	CSXT-BUFF-NS	2812220	$3,800	$1,502	$2,704	$2,591	$2,704

Comparison of NS Tariff Rates and
Maximum Rates Per Car for DuPont Movements - 2Q10

	Origin City (1)	St	Destination City (2)	St	Railroad(s) (3)	Commodity (4)	2Q2010 Tariff Rate 1/ (5)	Phase III Cost 1/ (6)	Jurisdictional Threshold 1/ (7)	SAC Rate 2/ (8)	STB Maximum Rate 3/ (9)
115	Pascagoula	MS	Fort Mill	SC	CSXT-ATLA-NS	2815112	$5,000	$1,197	$2 155	$2,066	$2 155
116	Starke	FL	Huntsville	AL	CSXT-DCTUR-NS	1441325	$1,025	$286	$514	$493	$514
117.	Starke	FL	Huntsville	AL	CSXT-DCTUR-NS	1441325	$1,128	$440	$792	$759	$792
118	Wurtland	KY	Fort Mill	SC	CSXT-CHLTE-NS	2819315	$992	$578	$1 040	$997	$1,040
119	Wurtland	KY	Mcintosh	AL	CSXT-BHAM-NS	2819315	$2,000	$783	$1,409	$1,351	$1,109
120	Belle	WV	Divine	IL	NS-PINE-CN	2813980	$7 502	$1 501	$2,702	$2,589	$2 702
121	Belle	WV	Mapleton	IL	NS-LOGPT-UPW	2813934	$6,106	$1 330	$2,394	$2,295	$2 394
122.	Burnside	LA	Gracewood	GA	CN-NLWOR-NS	2819325	$5,044	$1 924	$3,464	$3,319	$3,464
123	Lemont	IL	Edgemoor	DE	BNSF-CHGO NS	2991315	$5,788	$2,643	$4 758	$4,560	$4,758
124	New Johnsonville	TN	McDonough	GA	CSXT-CHATT-NS	2816130	$3,467	$945	$1,701	$1,630	$1,701
125	Charleston	TN	Woodstock	TN	NS-MEMPH CN	2812410	xxx	$1,083	$1,950	xxx	xxx
126	Reybold	DE	Albuquerque	NM	NS-STRTR-BNSF	2819315	xxx	$2 313	$4,167	xxx	xxx
127	Reybold	DE	Baltimore	MD	NS BALBV-CSXT	2819315	xxx	$388	$698	xxx	xxx
128	Reybold	DE	Blair	NE	NS CHGO-UP	2819315	xxx	$2,146	$3,863	xxx	xxx
129	Reybold	DE	Brewton	AL	NS BHAM CSXT	2819315	xxx	$2,426	$4,366	xxx	xxx
130	Reybold	DE	Castle Hayne	NC	NS CHLTE-CSXT	2819315	xxx	$1,681	$3,027	xxx	xxx
131	Reybold	DE	Clifton	AZ	NS KCITY-UP	2819315	xxx	$3,088	$5 559	xxx	xxx
132	Reybold	DE	Corson	SD	NS-CHGO-BNSF	2819315	xxx	$2,146	$3,862	xxx	xxx
133	Removed										
134	Reybold	DE	Ferguson	MS	NS-MEMPHIS-CN	2819315	xxx	$2,804	$5 046	xxx	xxx
135	Reybold	DE	Hastings	NE	NS CHGO BNSF	2819315	xxx	$2,146	$3 862	xxx	xxx
136	Reybold	DE	Indianapolis	IN	NS CINTI CSXT	2819315	xxx	$1,933	$3,480	xxx	xxx
137.	Reybold	DE	Omaha	NE	NS-CHGO UP	2819315	xxx	$2,146	$3,861	xxx	xxx
138	Reybold	DE	Orange	TX	NS LSTL-BNSF	2819315	xxx	$2,563	$4 613	xxx	xxx
139	Reybold	DE	Phoenix	AZ	NS-STRTR-BNSF	2819315	xxx	$2,313	$4,163	xxx	xxx
140	Reybold	DE	Sioux City	IA	NS-CHGO BNSF	2819315	xxx	$2,146	$3 862	xxx	xxx
141.	Reybold	DE	Toledo	OH	NS-TOLED-CSXT	2819315	xxx	$2,050	$3,690	xxx	xxx
142	Reybold	DE	Washington	WV	NS-HAGTN CSXT	2819315	xxx	$643	$1,157	xxx	xxx

1/ From Rebuttal Exhibit II-A-5
2/ MMM Ratio from Rebuttal Exhibit III-H-2 x Column (6)
3/ Greater of Column (7) or Column (8)

TAB 8

Comparison of NS Tariff Rates and Maximum Rates Per Car for DuPont Movements - 3Q10

	Origin City (1)	ST	Destination City (2)	ST	Railroad(s) (3)	Commodity (4)	3Q2010 Tariff Rate 1/ (5)	Phase III Cost 1/ (6)	Jurisdictional Threshold 1/ (7)	SAC Rate 2/ (8)	STB Maximum Rate 3/ (9)
Exhibit A - Local Moves											
1	Removed										
2	Bayway	NJ	Waynesville	NC	NS	2819315	$12,014	$2,313	$4,164	$3,991	$4,164
3	Belle	WV	Danville	IL	NS	2813980	$4,626	$1,689	$3,041	$2,911	$3,041
4	Removed										
5	Removed										
6	Removed										
7	Removed										
8	Removed										
9	Belle	WV	Wyandotte	MI	NS	2813934	$6,264	$1,254	$2,257	$2,163	$2,257
10	Charleston	IN	Edgemoor	DE	NS	2812815	$11,638	$2,292	$4,125	$3,957	$4,125
11	Edgemoor	DE	Chicago	IL	NS	2816130	$9,200	$2,293	$4,127	$3,955	$4,127
12	Edgemoor	DE	Chillicothe	OH	NS	2816130	$6,084	$2,232	$4,018	$3,851	$4,018
13	Edgemoor	DE	Mahrt	AL	NS	2816130	$11,566	$2,951	$5,312	$5,091	$5,312
14	Edgemoor	DE	Riverwood Intl	GA	NS	2816130	$5,860	$2,677	$4,819	$4,618	$4,819
15	Edgemoor	DE	Wabash	IN	NS	2816130	$6 193	$2,347	$4,225	$4,049	$4,225
16	Lemoyne	AL	Gant	SC	NS	4810560	$4,800	$2,414	$4,345	$4,164	$4,345
17	Loudon	TN	Braithwaite	LA	NS	2818512	$4,125	$1,969	$3,541	$3,396	$3,544
18	Louisville	KY	Decatur	IL	NS	2819450	$3,302	$1 256	$2,262	$2,167	$2,262
19	Louisville	KY	Lafayette	IN	NS	2819450	$3,752	$1,574	$2,832	$2,714	$2,832
20	Removed										
21	Removed										
22	McIntosh	AL	Lemoyne	AL	NS	2812220	$1,500	$495	$892	$855	$892
23	Reybold	DE	Detroit	MI	NS	2819315	xxx	$1,834	$3,301	xxx	xxx
24	Reybold	DE	Fort Mill	SC	NS	2819315	xxx	$1,838	$3,309	xxx	xxx
25	Reybold	DE	Morrisville	PA	NS	2819315	xxx	$575	$1,035	xxx	xxx
Exhibit B - Joint Moves										$0	$0
1	Belle	WV	Anaheim	CA	NS-CHGO-UP	2813980	$8,975	$1,580	$2,844	$2,726	$2,844
2	Belle	WV	Bayport	TX	NS LSTL-UP	2818620	$5,950	$1,987	$3,577	$3,428	$3,577
3	Removed										
4	Belle	WV	Brownsville	TX	NS-LSTL-UP	2818221	$5,950	$1,965	$3,537	$3,390	$3,537
5	Belle	WV	Burley	ID	NS-CHGO-UP	2813934	$8,975	$1,580	$2,844	$2,726	$2,844
6	Belle	WV	Cadet	MO	NS-KCITY-UP	2813934	$11,400	$2,460	$4,427	$4,243	$4,427
7	Removed										
8	Belle	WV	Channelview	TX	NS-LSTL-UP	2818130	$5,950	$1,819	$3 273	$3,137	$3,273
9	Belle	WV	City of Commerce	CA	NS-STRTR-BNSF	2818221	$8,561	$1,715	$3,087	$2,959	$3,087
10	Belle	WV	Conroe	TX	NS-LSTL-BNSF	2813934	$9,000	$1,959	$3,527	$3,380	$3,527
11	Belle	WV	Corsicana	TX	NS-LSTL-UP	2813934	$9,000	$1 861	$3,349	$3,210	$3,349
12	Removed										
13	Belle	WV	East Billings	MT	NS-CHGO-BNSF	2818130	$6,000	$1,559	$2,807	$2,690	$2,807
14	Belle	WV	Ethyl	AR	NS LSTL-UP-MCNPI-LNW	2813934	$9,000	$1,876	$3,377	$3 237	$3,377
15	Belle	WV	Finley	WA	NS-CHGO-BNSF	2813934	$8,975	$1,581	$2,845	$2,727	$2,845
16	Removed										
17	Belle	WV	Freeport	TX	NS LSTL-UP	2818130	$5,950	$1,729	$3 112	$2 983	$3,112
18	Belle	WV	Garyville	LA	NS-NEWOR-CN	2813934	$14,555	$2 820	$5,077	$4,865	$5,077
19	Belle	WV	Geismar	LA	NS-NEWOR CN	2813934	$14,555	$2,584	$4,651	$4,457	$4,651
20	Belle	WV	Janesville	WI	NS-CHGO-UP	2818131	$8,975	$1,544	$2,778	$2,663	$2,778
21	Belle	WV	Laredo	TX	NS-LSTL-UP	2818221	$5,950	$1,965	$3,537	$3,390	$3,537
22	Belle	WV	Laredo	TX	NS-LSTL-UP	2818131	$9,000	$1 965	$3,537	$3,390	$3,537
23	Belle	WV	Lorenzo	IL	NS CHGO-BNSF	2813980	$8,975	$1 563	$2,813	$2,696	$2,813
24	Belle	WV	Los Angeles	CA	NS-STRTR-BNSF	2813934	$8,975	$1,761	$3,170	$3,038	$3,170
25	Belle	WV	Los Angeles	CA	NS-CHGO UP	2818130	$6,000	$1,569	$2,824	$2,706	$2,824
26	Removed										
27	Belle	WV	Millsdale	IL	NS CHGO CN	2818131	$8,975	$1 545	$2 781	$2,665	$2,781
28	Removed										
29	Belle	WV	Saint Paul	MN	NS-CHGO-BNSF	2818221	$6,000	$1,722	$3,099	$2,970	$3,099
30	Belle	WV	San Dimas	CA	NS-CHGO-UP	2813980	$8,975	$1,690	$3,042	$2,915	$3,042
31	Removed										
32	Belle	WV	St Gabriel	LA	NS-NEWOR-CN	2813934	$11,555	$2,804	$5,047	$4,836	$5,047
33	Belle	WV	St Joseph	MO	NS-KCITY-UP	2818130	$6,465	$2,452	$4,413	$4,229	$4,113
34	Removed										
35	Belle	WV	Strang	TX	NS LSTL-UP	2818221	$5,950	$2,042	$3,675	$3,522	$3,675
36	Belle	WV	Strang	TX	NS LSTL-BNSF	2813934	$9,000	$1,676	$3,018	$2,892	$3 018
37	Belle	WV	Strang	TX	NS LSTL-UP	2819183	$4 157	$1 794	$3 230	$3,095	$3,230
38	Removed										
39	Belle	WV	Texas City	TX	NS-LSTL-UP	2813934	$9,000	$1,876	$3,377	$3,236	$3,377
40	Belle	WV	Vernon	MO	NS-LSTL-BNSF	2813934	$9,000	$1,946	$3,502	$3,356	$3,502
41	Belle	WV	West Memphis	AR	NS-KCITY-UP	2813934	$11,400	$2,451	$4,411	$4,227	$4,411
42	Belle	WV	Winford Spur	LA	NS MERID KCS	2813980	$12,588	$2,371	$4,268	$4,090	$4,268
43	Belle	WV	Wichita	KS	NS-LSTL-BNSF	2813934	$9,000	$1,986	$3,575	$3 426	$3,575
44	Bloomington	TX	Greenville	SC	UP-NEWOR-NS	2821142	$5,713	$1 706	$3,070	$2,942	$3,070
45	Bloomington	TX	Washington, Warren	NJ	UP-LSTL-NS	2821142	$9,013	$2,378	$4,280	$4,102	$4,280

Comparison of NS Tariff Rates and Maximum Rates Per Car for DuPont Movements - 3Q10

	Origin City (1)	ST	Destination City (2)	ST	Railroad(s) (3)	Commodity (4)	3Q2010 Tariff Rate 1/ (5)	Phase III Cost 1/ (6)	Jurisdictional Threshold 1/ (7)	SAC Rate 2/ (8)	STB Maximum Rate 3/ (9)
46.	Removed										
47	Charleston; Bradley	TN	Woodstock	TN	NS-MLMPH-CN	2812220	$3,000	$1,088	$1,958	$1,876	$1,958
48	Cresap	WV	Edgemoor	DL	CSXT-HAGTN-NS	2991315	$3,356	$661	$1,191	$1,141	$1 191
49	Dowling	TX	Fort Mill	SC	KCS-MERID-NS	2815112	$5,125	$1,788	$3 219	$3,085	$3 219
50.	Edgemoor	DE	Garland	TX	NS-MERID-KCS	2816130	$8,774	$2,882	$5,188	$4,972	$5,188
51	Edgemoor	DE	Green	MI	NS CHGO CN	2816130	$9,200	$2,201	$3,961	$3,796	$3,961
52	Edgemoor	DE	Laredo	TX	NS-LSTL-UP	2816130	$10,272	$2,550	$4,590	$4,399	$4,590
53	Edgemoor	DE	Madawaska	ME	NS ROUPI-CN	2816130	$4,700	$1,313	$2,364	$2,266	$2,364
54	Edgemoor	DE	Pasadena	TX	NS ESTL-UP	2819971*	$13,865	$2,496	$4,494	$4,306	$4,494
55	Edgemoor	DE	Port Huron	MI	NS BUFI-CN	2816130	$6,920	$1,711	$3,080	$2,952	$3,080
56	Edgemoor	DE	Portland	ME	NS-MCV-PAS-AYI-RM-ST	2816130	$4,700	$1,310	$2,359	$2,261	$2,359
57	Edgemoor	DE	Portland	OR	NS-CHGO-BNSF	2816130	$9,200	$2,223	$4,002	$3,835	$4,002
58	Edgemoor	DE	Quinnesec	MI	NS-CHGO CN	2816130	$9,200	$2,201	$3,961	$3 796	$3,961
59	Edgemoor	DE	Riley	ME	NS MCV-PAS-AYI RM ST	2816130	$4,700	$1,315	$2,366	$2,268	$2,366
60	Edgemoor	DE	Rumford	ME	NS-MCV-PAS-AYLRM-ST	2816130	$4,700	$1,311	$2,359	$2,261	$2 359
61.	Removed										
62	Edgemoor	DE	Shawmut	ME	NS MCV-PAS-AYI RM-ST	2816130	$4,700	$1,312	$2,361	$2,263	$2,361
63	Edgemoor	DE	Snohoy	CA	NS-CHGO UP	2816130	$9,200	$2,228	$4,010	$3,842	$4,010
64	Edgemoor	DE	Snohoy	CA	NS-STR1R BNSI	2816130	$5,101	$2,397	$4,315	$4,135	$4,315
65	Edgemoor	DE	St Paul	MN	NS-CHGO UP	2816130	$9,200	$2,225	$4,004	$3,837	$4,004
66.	Removed										
67	Edgemoor	DE	West Monroe	LA	NS-MERID-KCS	2816130	$8,774	$2,888	$5,199	$4,983	$5,199
68	Edgemoor	DE	Wheeling	IL	NS CHGO CN	2816130	$9,200	$2,212	$3,981	$3,815	$3,981
69	Enid	OK	Edgemoor	DE	BNSF-LSTL-NS	2991315	$6 075	$2 562	$4,611	$4,419	$4,611
70.	Removed										
71	Gregory	TX	Dragon	MS	UP-NLWOR NS	2813984	$2,450	$507	$912	$874	$912
72	Removed										
73	Gregory	TX	Royce	NJ	UP-LSTL-NS	2813984	$13,730	$2,704	$4,867	$4,66*	$4,867
74	Removed										
75	Lemont	IL	Edgemoor	DE	BNSF-CHGO-NS	2991315	$6,389	$2 122	$3,820	$3,661	$3,820
76	Lemoyne	AL	Artesia	MS	NS-MERID KCS	4810560	$8,395	$1,255	$2,259	$2,165	$2,259
77.	McIntosh	AL	Burnside	LA	NS-MOBIL-CN	2819330	$1,700	$317	$570	$546	$570
78	McIntosh	AL	Delisle	MS	NS-MOBIL-CN-HATBG KCS	2812815	$1,700	$321	$577	$553	$577
79	McIntosh	AL	Delisle	MS	NS-MOBIL-CN-HATBG KCS	2812220	$1,700	$326	$588	$563	$588
80	McIntosh	AL	Orange	TX	NS NEWOR-UP	2812220	$8,611	$1,598	$2,876	$2 756	$2,876
81	McIntosh	AL	Woodstock	TN	NS MOBIL-CN	2812220	$1,700	$326	$587	$562	$587
82.	Orange	TX	Greenville	SC	UP-NLWOR-NS	2821142	$5,713	$2,079	$3,741	$3,586	$3,741
83	Orange	TX	Washington Warren	NJ	UP-ESTL-NS	2821142	$9,013	$2,221	$3,998	$3,831	$3,998
84	Pascagoula	MS	Fort Mill	SC	MSE-MOBIL-NS	2815112	$6,295	$2,077	$3,738	$3,582	$3,738
85	Pascagoula	MS	Lemoyne	AL	MSE-MOBIL-NS	2815112	$2,577	$277	$498	$478	$498
86.	Strang	TX	Lemoyne	AL	UP-NEWOR NS	2812350	$5,215	$1,785	$3,212	$3 078	$3,212
87	Beauharnois	PQ	Edgemoor	DL	CSXT-BUFI-NS	2812815	$7,022	$1,434	$2,582	$2,474	$2,582
88	Removed										
89	Belle	WV	Gainesville	GA	NS-CINTI CSXT	2813980	$7,281	$1,449	$2,608	$2 499	$2,608
90	Belle	WV	Port Bienville	MS	NS-ATLA-CSXT-ANSLB-PBVR	2813934	$9,585	$2,440	$4,393	$4,210	$4,393
91.	Belle	WV	Theodore	AL	NS CINTI CSXT	2813934	$7,281	$1 440	$2,592	$2,484	$2,592
92	Bellwood	VA	Dallas	GA	CSXT-PTRSB-NS	2819315	$5,051	$2,245	$4,041	$3,872	$4,041
93	Bellwood	VA	Fort Mill	SC	CSXT-CHLTE-NS	2819315	$992	$569	$1,025	$982	$1,025
94	Bellwood	VA	Rockwell	NC	CSXT-PTRSB-NS	2819315	$2 700	$958	$1,724	$1,652	$1 724
95	Removed										
96.	Danville	VA	Amphill	VA	NS-PTRSB CSXT	3274110	$1,585	$630	$1,133	$1,086	$1,133
97.	Edgemoor	DE	New Johnsonville	TN	NS CINTI CSXT	2816130	$8,966	$2,107	$3,792	$3,634	$3,792
98	Enid	OK	Edgemoor	DE	BNSF-LSTL-NS	2991315	$6,986	$3,093	$5,568	$5,336	$5,568
99	Loudon	TN	Grainger	NC	NS CHATT CSXT	2818512	$1,490	$569	$1,024	$981	$1,024
100	Loudon	TN	Grainger	NC	NS-CHATT-CSXT	2818512	$1,684	$436	$785	$752	$785
101	Miami Fort	OH	Dallas	GA	CSXT-CINTI-NS	2819315	$3,532	$1,524	$2,744	$2,630	$2 744
102	Miami Fort	OH	Gracewood	GA	CSXT-CHATT-NS	2819325	$5,400	$1,376	$2,477	$2,374	$2,477
103	Miami Fort	OH	McIntosh	AL	CSXT CHATT-NS	2819340	$5,638	$967	$1,741	$1,669	$1,741
104	Removed										
105	Removed										
106	Miami Fort	OH	Pepper	VA	CSXT-CINTI-NS	2819345	$3,000	$2,040	$3,671	$3,518	$3,671
107.	Natrium	WV	Belle	WV	CSXT-CINTI-NS	2812220	$4,800	$1,480	$2,664	$2,553	$2,664
108	Natrium	WV	Danville	VA	CSXT-LYNCH-NS	2812220	$2,520	$377	$679	$650	$679
109	New Johnsonville	TN	Chapman	PA	CSXT-CINTI-NS	2816130	$7,151	$2,091	$3,763	$3,606	$3 763
110	Removed										
111.	New Johnsonville	TN	Morrow	GA	CSXT-CHATT-NS	2816130	$4,500	$666	$1,199	$1,149	$1,199
112	Niagara Falls	NY	Belle	WV	CSXT-CLMBO-NS	2812220	$3,000	$737	$1,327	$1,272	$1 327
113	Niagara Falls	NY	Edgemoor	DE	CSXT-BUFI-NS	2812815	$7,022	$1,458	$2,625	$2,516	$2,625
114	Niagara Falls	NY	Edgemoor	DE	CSXT-BUFI-NS	2812220	$3,800	$1,488	$2,679	$2,567	$2,679

Comparison of NS Tariff Rates and
Maximum Rates Per Car for DuPont Movements - 3Q10

	Origin		Destination					3Q2010				
	City	ST	City	ST	Railroad(s)	Commodity	Tariff Rate 1/	Phase III Cost 1/	Jurisdictional Threshold 1/	SAC Rate 2/	STB Maximum Rate 3/
	(1)		(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)
115	Pascagoula	MS	Fort Mill	SC	CSXT-ATLA-NS	2815112	$5,000	$1,186	$2,135	$2,046	$2,135
116	Starke	FL	Huntsville	AL	CSXT-DCTUR-NS	1441325	$1,025	$283	$510	$488	$510
117.	Starke	FL	Huntsville	AL	CSXT-DCTUR-NS	1441325	$1,128	$436	$784	$752	$784
118.	Wurtland	KY	Fort Mill	SC	CSXT-CHLTE-NS	2819315	$992	$572	$1,030	$987	$1,030
119	Wurtland	KY	McIntosh	AL	CSXT-BHAM-NS	2819315	$2,000	$776	$1,396	$1,338	$1,396
120	Belle	WV	Divine	IL	NS-PINE-CN	2813980	$7,502	$1,487	$2,676	$2,565	$2,676
121	Belle	WV	Mapleton	IL	NS-LOGPT-UPW	2813934	$7,332	$1,318	$2,372	$2,273	$2,372
122	Burnside	LA	Gracewood	GA	CN-NLWOR-NS	2819325	$9,000	$1,906	$3,431	$3,288	$3,431
123	Lemont	IL	Edgemoor	DE	BNSF CHGO-NS	2991315	$7,347	$2,619	$4,714	$4,517	$4,714
124	New Johnsonville	TN	McDonough	GA	CSXT-CHATT-NS	2816130	$4,500	$936	$1,685	$1,614	$1,685
125	Charleston	TN	Woodstock	TN	NS MEMPH CN	2812410	xxx	$1,073	$1,931	xxx	xxx
126	Reybold	DE	Albuquerque	NM	NS STRTR-BNSI	2819315	xxx	$2,291	$4,124	xxx	xxx
127.	Reybold	DE	Baltimore	MD	NS BALBV CSXT	2819315	xxx	$384	$692	xxx	xxx
128.	Reybold	DE	Blair	NE	NS CHGO UP	2819315	xxx	$2,126	$3,827	xxx	xxx
129	Reybold	DE	Brewton	AL	NS BHAM CSXT	2819315	xxx	$2,403	$4,326	xxx	xxx
130	Reybold	DE	Castle Hayne	NC	NS CHLTE-CSXT	2819315	xxx	$1,666	$2,998	xxx	xxx
131.	Reybold	DE	Clifton	AZ	NS-KCITY-UP	2819315	xxx	$3,059	$5,507	xxx	xxx
132	Reybold	DE	Corson	SD	NS-CHGO BNSF	2819315	xxx	$2,126	$3,826	xxx	xxx
133	Removed										
134	Reybold	DE	Ferguson	MS	NS-MEMPHIS CN	2819315	xxx	$2,777	$4,999	xxx	xxx
135.	Reybold	DE	Hastings	NE	NS CHGO BNSF	2819315	xxx	$2,126	$3,826	xxx	xxx
136	Reybold	DE	Indianapolis	IN	NS CINTI CSXT	2819315	xxx	$1,915	$3,448	xxx	xxx
137	Reybold	DE	Omaha	NE	NS CHGO UP	2819315	xxx	$2,126	$3,826	xxx	xxx
138	Reybold	DE	Orange	TX	NS-LSTL-BNSI	2819315	xxx	$2,539	$4,570	xxx	xxx
139	Reybold	DE	Phoenix	AZ	NS-STRTR-BNSI	2819315	xxx	$2,291	$4,124	xxx	xxx
140	Reybold	DE	Sioux City	IA	NS CHGO-BNSF	2819315	xxx	$2,126	$3,826	xxx	xxx
141	Reybold	DE	Toledo	OH	NS-TOLTD CSXT	2819315	xxx	$2,031	$3,656	xxx	xxx
142	Reybold	DE	Washington	WV	NS-HAGTN-CSXT	2819315	xxx	$637	$1,146	xxx	xxx

1/ From Rebuttal Exhibit II-A-6
2/ MMM Ratio from Rebuttal Exhibit III-II-2 x Column (6)
3/ Greater of Column (7) or Column (8)

TAB 9

Comparison of NS Tariff Rates and
Maximum Rates Per Car for DuPont Movements - 4Q10

Origin City (1)	St	Destination City (2)	St	Railroad(s) (3)	Commodity (4)	4Q2010 Tariff Rate 1/ (5)	Phase III Cost 1/ (6)	Jurisdictional Threshold 1/ (7)	SAC Rate 2/ (8)	STB Maximum Rate 3/ (9)
Exhibit A - Local Moves										
1. Removed										
2 Hayway	NJ	Waynesville	NC	NS	2819315	$12,014	$2,356	$4,241	$4,064	$4,241
3 Belle	WV	Danville	IL	NS	2813980	$4,626	$1,721	$3,097	$2,968	$3 097
4. Removed										
5. Removed										
6 Removed										
7. Removed										
8 Removed										
9 Belle	WV	Wyandotte	MI	NS	2813934	$6,264	$1,277	$2,298	$2,203	$2,298
10 Charleston	IN	Edgemoor	DL	NS	2812815	$13,638	$2,334	$4,201	$4 026	$4,201
11 Edgemoor	DL	Chicago	IL	NS	2816130	$9,200	$2,335	$4 203	$4,028	$4,203
12 Edgemoor	DE	Chillicothe	OH	NS	2816130	$6,084	$2,274	$4,092	$3 922	$4,092
13 Edgemoor	DL	Mahrt	AL	NS	2816130	$11,566	$3,006	$5 410	$5 185	$5 410
14 Edgemoor	DE	Riverwood Intl	GA	NS	2816130	$5,860	$2,726	$4,907	$4,703	$4 907
15 Edgemoor	DE	Wabash	IN	NS	2816130	$6,193	$2,390	$4,302	$4,123	$4,302
16 Lemoyne	AL	Giant	SC	NS	4810560	$4,800	$2,458	$4,425	$4,241	$4 425
17 Loudon	TN	Braithwaite	LA	NS	2818512	$4,125	$2,005	$3,609	$3,459	$3,609
18. Louisville	KY	Decatur	IL	NS	2819450	$3,302	$1,280	$2 303	$2,207	$2,303
19 Louisville	KY	Lafayette	IN	NS	2819450	$3,752	$1,603	$2,885	$2 764	$2,885
20 Removed										
21 Removed										
22. McIntosh	AL	Lemoyne	AL	NS	2812220	$1 500	$505	$908	$870	$908
23 Reybold	DL	Detroit	MI	NS	2819315	xxx	$1,868	$3,362	xxx	xxx
24 Reybold	DL	Fort Mill	SC	NS	2819315	xxx	$1,872	$3,370	xxx	xxx
25 Reybold	DL	Morrisville	PA	NS	2819315	xxx	$586	$1,054	xxx	xxx
Exhibit B - Joint Moves										
1. Belle	WV	Anaheim	CA	NS-CHGO UP	2813980	$8 975	$1,609	$2,896	$2,776	$2,896
2. Belle	WV	Bayport	TX	NS-LSTL-UP	2818620	$5 950	$2,024	$3,643	$3,491	$3,643
3 Removed										
4 Belle	WV	Brownsville	TX	NS-LSTL-UP	2818221	$5,950	$2,001	$3,602	$3,452	$3,602
5 Belle	WV	Burley	ID	NS-CHGO UP	2813934	$8,975	$1,609	$2,896	$2,776	$2,896
6 Belle	WV	Cadet	MO	NS-KCITY-UP	2813934	$11,400	$2,505	$4,509	$4,321	$4,509
7. Removed										
8 Belle	WV	Channelview	TX	NS-LSTL-UP	2818130	$5,950	$1,852	$3,334	$3,195	$3 134
9 Belle	WV	City of Commerce	CA	NS-STR TR-BNSI	2818221	$8,561	$1,747	$3,144	$3 013	$3 144
10 Belle	WV	Conroe	TX	NS-LSTL-BNSI	2813934	$9,000	$1 995	$3,592	$3,442	$3,592
11 Belle	WV	Corsicana	TX	NS-LSTL-UP	2813934	$9,000	$1,895	$3,411	$3,269	$3,411
12. Removed										
13 Belle	WV	East Billings	MT	NS CHGO-BNSF	2818130	$6,000	$1,588	$2,859	$2,739	$2,859
14. Belle	WV	Ethyl	AR	NS LSTL-UP-MCNI I-LNW	2813934	$9,000	$1,911	$3,439	$3,296	$3,439
15. Belle	WV	Finley	WA	NS-CHGO-BNSF	2813934	$8,975	$1,610	$2,898	$2,777	$2,898
16 Removed										
17. Belle	WV	Freeport	TX	NS-LSTL-UP	2818110	$5,950	$1,761	$3,170	$3 038	$3,170
18 Belle	WV	Garyville	LA	NS-NI WOR-CN	2813934	$14,555	$2 872	$5,170	$4,955	$5 170
19 Belle	WV	Geismar	LA	NS-NEWOR-CN	2813934	$14,555	$2,631	$4 736	$4,539	$4,736
20 Belle	WV	Janesville	WI	NS CHGO-UP	2818131	$8 975	$1,572	$2,830	$2,712	$2,830
21 Belle	WV	Laredo	TX	NS-LSTL-UP	2818221	$5,950	$2,001	$3,602	$3,452	$3 602
22 Belle	WV	Laredo	TX	NS-LSTL-UP	2818131	$9,000	$2,001	$3,602	$3,452	$3,602
23 Belle	WV	Lorenzo	IL	NS-CHGO BNSF	2813980	$8,975	$1 592	$2,865	$2 745	$2,865
24 Belle	WV	Los Angeles	CA	NS STR TR BNSF	2813934	$8 975	$1,794	$3,229	$3,094	$3,229
25 Belle	WV	Los Angeles	CA	NS CHGO UP	2818130	$6,000	$1,598	$2,876	$2,756	$2,876
26 Removed										
27. Belle	WV	Millsdale	IL	NS CHGO-CN	2818131	$8 975	$1,574	$2,832	$2,711	$2,832
28 Removed										
29 Belle	WV	Saint Paul	MN	NS-CHGO BNSF	2818221	$6,000	$1,754	$3,157	$3,025	$3'157
30 Belle	WV	San Dimas	CA	NS CHGO UP	2813980	$8,975	$1 721	$3,098	$2,969	$3,098
31. Removed										
32. Belle	WV	St Gabriel	LA	NS-NI WOR-CN	2813934	$14,555	$2,855	$5,140	$4,926	$5,140
33. Belle	WV	St Joseph	MO	NS-KCITY-UP	2818130	$6,465	$2,497	$4,495	$4,307	$4,495
34 Removed										
35 Belle	WV	Strang	TX	NS-LSTL-UP	2818221	$5,950	$2 080	$3,743	$3,587	$3 743
36 Belle	WV	Strang	TX	NS-LSTL-BNSF	2813934	$9 000	$1,707	$3,071	$2,945	$3,071
37. Belle	WV	Strang	TX	NS-LSTL-UP	2819183	$4,214	$1,827	$3,289	$3,152	$3,289
38 Removed										
39 Belle	WV	Texas City	TX	NS-LSTL-UP	2813934	$9,000	$1,910	$3,439	$3,296	$3,439
40 Belle	WV	Verona	MO	NS LSTL-BNSI	2813934	$9,000	$1,981	$3,566	$3,418	$3,566
41 Belle	WV	West Memphis	AR	NS KCITY-UP	2813934	$11,400	$2,496	$4,493	$4,305	$4,493
42 Belle	WV	Winford Spur	LA	NS MLRID KCS	2813980	$12,588	$2,415	$4,346	$4,165	$4,346
43 Belle	WV	Wichita	KS	NS-LSTL-BNSF	2813934	$9,000	$2,023	$3,641	$3,489	$3,641
44 Bloomington	TX	Greenville	SC	UP-NLWOR-NS	2821142	$5,713	$1 737	$3,127	$2,997	$3,127
45 Bloomington	TX	Washington, Warren	NJ	UP-LSTL-NS	2821142	$9,013	$2,422	$4,359	$4,177	$4,359

Comparison of NS Tariff Rates and
Maximum Rates Per Car for DuPont Movements - 4Q10

	Origin		Destination				4Q2010				
	City	ST	City	ST	Railroad(s)	Commodity	Tariff Rate 1/	Phase III Cost 1/	Jurisdictional Threshold 1/	SAC Rate 2/	STB Maximum Rate 3/
	(1)		(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)
46	Removed										
47	Charleston; Bradley	IN	Woodstock	IN	NS-MLMPH-CN	2812220	$3,000	$1,108	$1,994	$1,911	$1,994
48	Cresap	WV	Edgemoor	DE	CSXT-HAGTN-NS	2991315	$3,356	$674	$1,213	$1,162	$1,213
49	Dowling	TX	Fort Mill	SC	KCS-MERID-NS	2815112	$5,425	$1,821	$3,279	$3,142	$3,279
50	Edgemoor	DE	Garland	TX	NS-MERID KCS	2816130	$8,774	$2,935	$5,284	$5,064	$5,284
51	Edgemoor	DE	Gross	MI	NS CHGO CN	2816130	$9,200	$2,241	$4,034	$3,866	$4,034
52	Edgemoor	DE	Laredo	TX	NS-LSTL-UP	2816130	$10,272	$2,597	$4,675	$4,480	$4,675
53	Edgemoor	DE	Marlowaska	MT	NS ROUPT-CN	2816130	$4,700	$1,378	$2,408	$2,308	$2,408
54	Edgemoor	DE	Pasadena	TX	NS-LSTL-UP	2819971	$13,865	$2,542	$4,576	$4,386	$4,576
55	Edgemoor	DE	Port Huron	MI	NS-BUFF-CN	2816130	$6,920	$1,713	$3,137	$3,006	$3,137
56	Edgemoor	DE	Portland	ME	NS MCV-PAS-AYERM-ST	2816130	$4,700	$1,335	$2,402	$2,302	$2,402
57	Edgemoor	DE	Portland	OR	NS CHGO-BNSF	2816130	$9,200	$2,264	$4,076	$3,906	$4,076
58	Edgemoor	DE	Quinnesec	MI	NS CHGO CN	2816130	$9,200	$2,241	$4,034	$3,866	$4,034
59	Edgemoor	DE	Raleys	ME	NS-MCV-PAS-AYERM-ST	2816130	$4,700	$1,339	$2,410	$2,309	$2,410
60	Edgemoor	DE	Rumford	ME	NS-MCV-PAS AYERM-ST	2816130	$4,700	$1,335	$2,402	$2,302	$2,402
61	Removed										
62	Edgemoor	DE	Shawmut	ME	NS MCV-PAS-AYERM-ST	2816130	$4,700	$1,336	$2,405	$2,305	$2,405
63	Edgemoor	DE	Snoboy	CA	NS-CHGO UP	2816130	$9,200	$2,269	$4,083	$3,913	$4,083
64	Edgemoor	DE	Snoboy	CA	NS STRTR-BNSF	2816130	$5,101	$2,441	$4,394	$4,211	$4,394
65	Edgemoor	DE	St Paul	MN	NS-CHGO UP	2816130	$9,200	$2,266	$4,078	$3,908	$4,078
66	Removed										
67	Edgemoor	DE	West Monroe	LA	NS MERID KCS	2816130	$8,774	$2,942	$5,295	$5,074	$5,295
68	Edgemoor	DE	Wheeling	IL	NS CHGO CN	2816130	$9,200	$2,253	$4,055	$3,886	$4,055
69	Enid	OK	Edgemoor	DE	BNSF-LSTL-NS	2991315	$6,075	$2,609	$4,696	$4,500	$4,696
70	Removed										
71	Gregory	TX	Dragon	MS	UP-NEWOR-NS	2813984	$2,450	$516	$929	$890	$929
72	Removed										
73	Gregory	TX	Royce	NJ	UP-LSTL-NS	2813984	$13,730	$2,754	$4,957	$4,750	$4,957
74	Removed										
75	Lemont	IL	Edgemoor	DE	BNSF-CHGO-NS	2991315	$6,389	$2,161	$3,890	$3,728	$3,890
76	Lemoyne	AL	Artesia	MS	NS-MERID KCS	4810560	$8,395	$1,278	$2,300	$2,205	$2,300
77	McIntosh	AL	Burnside	LA	NS-MOBIL-CN	2819330	$1,700	$322	$580	$556	$580
78	McIntosh	AL	Delisle	MS	NS-MOBIL-CN-HATBG-KCS	2812815	$1,700	$327	$588	$564	$588
79	McIntosh	AL	Delisle	MS	NS-MOBIL-CN-HATBG-KCS	2812220	$1,700	$332	$598	$573	$598
80	McIntosh	AL	Orange	TX	NS-NEWOR-UP	2812220	$8,611	$1,627	$2,929	$2,807	$2,929
81	McIntosh	AL	Woodstock	IN	NS-MOBIL-CN	2812220	$1,700	$332	$597	$572	$597
82	Orange	TX	Greenville	SC	UP-NEWOR-NS	2821142	$5,713	$2,117	$3,810	$3,652	$3,810
83	Orange	TX	Washington, Warren	NJ	UP-LSTL-NS	2821142	$9,013	$2,262	$4,072	$3,902	$4,072
84	Pascagoula	MS	Fort Mill	SC	MSI-MOBIL-NS	2815112	$6,295	$2,115	$3,807	$3,648	$3,807
85	Pascagoula	MS	Lemoyne	AL	MSI-MOBIL-NS	2815112	$2,577	$282	$508	$487	$508
86	Strang	TX	Lemoyne	AL	UP-NEWOR-NS	2812350	$5,215	$1,817	$3,271	$3,135	$3,271
87	Beauharnois	PQ	Edgemoor	DE	CSXT-BUFF-NS	2812815	$7,022	$1,461	$2,629	$2,520	$2,629
88	Removed										
89	Belle	WV	Gainesville	GA	NS CINTI-CSXT	2813980	$7,281	$1,476	$2,656	$2,545	$2,656
90	Belle	WV	Port Bienville	MS	NS ATLA CSXT-ANSLS-PBVR	2813934	$9,585	$2,485	$4,474	$4,287	$4,474
91	Belle	WV	Theodore	AL	NS CINTI CSXT	2813934	$7,281	$1,466	$2,639	$2,529	$2,639
92	Bellwood	VA	Dallas	GA	CSXT-PIRSB NS	2819315	$5,051	$2,286	$4,115	$3,944	$4,115
93	Bellwood	VA	Fort Mill	SC	CSXT CHLTE-NS	2819315	$992	$580	$1,044	$1,000	$1,044
94	Bellwood	VA	Rockwell	NC	CSXT-PIRSB-NS	2819315	$2,700	$975	$1,756	$1,682	$1,756
95	Removed										
96	Danville	VA	Amphill	VA	NS-PIRSB CSXT	3274110	$1,585	$641	$1,154	$1,106	$1,154
97	Edgemoor	DE	New Johnsonville	TN	NS-CINTI-CSXT	2816130	$8,966	$2,146	$3,862	$3,701	$3,862
98	Enid	OK	Edgemoor	DE	BNSF-LSTL-NS	2991315	$6,986	$3,150	$5,671	$5,434	$5,671
99	Loudon	TN	Graingers	NC	NS CHATT-CSXT	2818512	$1,490	$579	$1,042	$999	$1,042
100	Loudon	TN	Graingers	NC	NS CHATT-CSXT	2818512	$1,684	$444	$799	$766	$799
101	Miami Fort	OH	Dallas	GA	CSXT-CINTI-NS	2819315	$3,532	$1,553	$2,795	$2,678	$2,795
102	Miami Fort	OH	Gracewood	GA	CSXT-CHATT-NS	2819325	$5,400	$1,402	$2,523	$2,418	$2,523
103	Miami Fort	OH	McIntosh	AL	CSXT-CHATT-NS	2819340	$5,638	$985	$1,773	$1,699	$1,773
104	Removed										
105	Removed										
106	Miami Fort	OH	Pepper	VA	CSXT-CINTI-NS	2819345	$3,000	$2,077	$3,739	$3,583	$3,739
107	Natrium	WV	Belle	WV	CSXT-CINTI-NS	2812220	$4,800	$1,507	$2,713	$2,600	$2,713
108	Natrium	WV	Danville	VA	CSXT-LYNCH-NS	2812220	$2,520	$384	$691	$662	$691
109	New Johnsonville	TN	Chapman	PA	CSXT-CINTI-NS	2816130	$7,151	$2,129	$3,832	$3,673	$3,832
110	Removed										
111	New Johnsonville	TN	Morrow	GA	CSXT CHATT-NS	2816130	$4,500	$678	$1,221	$1,170	$1,221
112	Niagara Falls	NY	Belle	WV	CSXT-CLMBO NS	2812220	$3,000	$751	$1,352	$1,296	$1,352
113	Niagara Falls	NY	Edgemoor	DE	CSXT-BUFF-NS	2812815	$7,022	$1,485	$2,673	$2,562	$2,673
114	Niagara Falls	NY	Edgemoor	DE	CSXT-BUFF-NS	2812220	$3,800	$1,515	$2,728	$2,614	$2,728

Comparison of NS Tariff Rates and
Maximum Rates Per Car for DuPont Movements - 4Q10

	Origin City (1)	ST	Destination City (2)	ST	Railroad(s) (3)	Commodity (4)	4Q2010 Tariff Rate 1/ (5)	Phase III Cost 1/ (6)	Jurisdictional Threshold 1/ (7)	SAC Rate 2/ (8)	STB Maximum Rate 3/ (9)
115	Pascagoula	MS	Fort Mill	SC	CSXT-ATLA-NS	2815112	$5,000	$1,208	$2,174	$2,084	$2,174
116	Starke	FL	Huntsville	AL	CSXT-DCTUR-NS	1441325	$1,025	$288	$519	$497	$519
117.	Starke	FL	Huntsville	AL	CSXT-DCTUR-NS	1441325	$1,128	$444	$799	$765	$799
118	Wurtland	KY	Fort Mill	SC	CSXT-CHLTE-NS	2819315	$992	$583	$1,049	$1,005	$1,049
119	Wurtland	KY	McIntosh	AL	CSXT-BHAM-NS	2819315	$2,000	$790	$1,422	$1,363	$1,422
120	Belle	WV	Divine	IL	NS-PINE-CN	2813980	$7,502	$1,514	$2,726	$2,612	$2,726
121	Belle	WV	Mapleton	IL	NS-FOGPT-TPW	2813934	$7,332	$1,342	$2,416	$2,315	$2,416
122.	Burnside	LA	Gracewood	GA	CN-NEWOR-NS	2819325	$9,000	$1,941	$3,494	$3,349	$3,494
123	Lemont	IL	Edgemoor	DL	BNSF-CHGO-NS	2991315	$7,347	$2,667	$4,800	$4,600	$4,800
124	New Johnsonville	TN	McDonough	GA	CSXT-CHATT-NS	2816130	$4,500	$953	$1,716	$1,644	$1,716
125	Charleston	TN	Woodstock	IN	NS-MLMPH-CN	2812410	xxx	$1,093	$1,967	xxx	xxx
126	Reybold	DE	Albuquerque	NM	NS-STRTR-BNSF	2819315	xxx	$2,133	$4,200	xxx	xxx
127	Reybold	DE	Baltimore	MD	NS BALBV CSXT	2819315	xxx	$391	$704	xxx	xxx
128	Reybold	DE	Blair	NE	NS CHGO UP	2819315	xxx	$2,165	$3,897	xxx	xxx
129	Reybold	DE	Brewton	AL	NS-BHAM-CSXT	2819315	xxx	$2,447	$4,405	xxx	xxx
130	Reybold	DE	Castle Hayne	NC	NS CHLTE-CSXT	2819315	xxx	$1,696	$3,053	xxx	xxx
131	Reybold	DE	Clifton	AZ	NS-KCITY-UP	2819315	xxx	$3,116	$5,608	xxx	xxx
132	Reybold	DE	Corsan	SD	NS-CHGO-BNSF	2819315	xxx	$2,165	$3,896	xxx	xxx
133	Removed										
134	Reybold	DE	Ferguson	MS	NS MEMPHIS-CN	2819315	xxx	$2,828	$5,091	xxx	xxx
135	Reybold	DE	Hastings	NE	NS-CHGO-BNSF	2819315	xxx	$2,165	$3,897	xxx	xxx
136.	Reybold	DE	Indianapolis	IN	NS-CINTI CSXT	2819315	xxx	$1,951	$3,511	xxx	xxx
137.	Reybold	DE	Omaha	NE	NS CHGO-UP	2819315	xxx	$2,165	$3,897	xxx	xxx
138	Reybold	DE	Orange	TX	NS-LSTL-BNSF	2819315	xxx	$2,586	$4,654	xxx	xxx
139	Reybold	DE	Phoenix	AZ	NS-STRTR-BNSF	2819315	xxx	$2,333	$4,200	xxx	xxx
140.	Reybold	DE	Sioux City	IA	NS-CHGO-BNSF	2819315	xxx	$2,165	$3,897	xxx	xxx
141.	Reybold	DE	Toledo	OH	NS-TOLED-CSXT	2819315	xxx	$2,068	$3,723	xxx	xxx
142	Reybold	DE	Washington	WV	NS-HAGTN-CSXT	2819315	xxx	$648	$1,167	xxx	xxx

1/ From Rebuttal Exhibit II-A-7
2/ MMM Ratio from Rebuttal Exhibit III-H-2 x Column (6)
3/ Greater of Column (7) or Column (8)

TAB 10

Comparison of NS Tariff Rates and Maximum Rates Per Car for DuPont Movements - 1Q11

	Origin City (1)	ST	Destination City (2)	ST	Railroad(s) (3)	Commodity (4)	1Q2011 Tariff Rate 1/ (5)	Phase III Cost 1/ (6)	Jurisdictional Threshold 1/ (7)	SAC Rate 2/ (8)	STB Maximum Rate 3/ (9)
Exhibit A - Local Moves											
1	Removed										
2	Bayway	NJ	Waynesville	NC	NS	2819315	$12,855	$2,536	$4,564	$4,237	$4,564
3	Belle	WV	Danville	IL	NS	2813980	$11,836	$1,855	$3,339	$3,100	$3 339
4	Removed										
5	Removed										
6	Removed										
7	Removed										
8	Removed										
9	Belle	WV	Wyandotte	MI	NS	2813934	$8,814	$1,375	$2,476	$2,298	$2,476
10	Charleston	TN	Edgemoor	DE	NS	2812815	$18,562	$2,511	$4,521	$4,197	$4,521
11	Edgemoor	DE	Chicago	IL	NS	2816130	$9,844	$2,513	$4,523	$4,199	$4 521
12	Edgemoor	DE	Chillicothe	OH	NS	2816130	$6,510	$2 447	$4,405	$4 089	$4,405
13	Edgemoor	DE	Mahrt	AL	NS	2816130	$12 376	$1,234	$5,821	$5,404	$5,821
14	Edgemoor	DE	Riverwood Intl	GA	NS	2816130	$6,270	$2,934	$5,281	$4,902	$5,281
15	Edgemoor	DE	Wabash	IN	NS	2816130	$6,627	$2,573	$4,631	$4,299	$4,631
16	Lemoyne	AL	Grant	SC	NS	4810560	$5,136	$2,649	$4,769	$4,127	$4,769
17	Loudon	TN	Braithwaite	LA	NS	2818512	$4,125	$2 162	$3,891	$3,612	$3,891
18	Louisville	KY	Decatur	IL	NS	2819450	$4,596	$1,379	$2,482	$2,304	$2,482
19	Louisville	KY	Lafayette	IN	NS	2819450	$6,139	$1,726	$3,107	$2,884	$3,107
20	Removed										
21	Removed										
22	McIntosh	AL	Lemoyne	AL	NS	2812220	$1,605	$546	$982	$912	$982
23	Reybold	DE	Detroit	MI	NS	2819315	xxx	$2,011	$3,619	xxx	xxx
24	Reybold	DE	Fort Mill	SC	NS	2819315	xxx	$2,016	$3,628	xxx	xxx
25	Reybold	DE	Morrisville	PA	NS	2819315	xxx	$633	$1,139	xxx	xxx
Exhibit B - Joint Moves											
1	Belle	WV	Anaheim	CA	NS CHGO UP	2813980	$12,100	$1,734	$3,121	$2,898	$3,121
2	Belle	WV	Bayport	TX	NS-ESTL-UP	2818620	$11,812	$2,181	$3,926	$3,645	$3 926
3	Removed										
4	Belle	WV	Brownsville	TX	NS-LSTL-UP	2818221	$11,812	$2,157	$3,882	$3,604	$3,882
5	Belle	WV	Burley	ID	NS CHGO-UP	2813934	$12,100	$1,734	$3,121	$2,898	$3 121
6	Belle	WV	Cadet	MO	NS-KCITY-UP	2813934	$19,539	$2,701	$4,862	$4,513	$4,862
7	Removed										
8	Belle	WV	Channelview	TX	NS-ESTL-UP	2818130	$11,812	$1,996	$3,593	$3,335	$3,593
9	Belle	WV	City of Commerce	CA	NS SIRR-BNSF	2818221	$10,242	$1,882	$3,388	$3,145	$3,388
10	Belle	WV	Conroe	TX	NS-ESTL-BNSF	2813934	$14,136	$2,150	$3,871	$3,593	$3 871
11	Belle	WV	Corsicana	TX	NS-ESTL-UP	2813934	$14 136	$2,042	$3,676	$3,413	$3,676
12	Removed										
13	Belle	WV	East Billings	MT	NS CHGO-BNSF	2818130	$8,533	$1,712	$3,081	$2,860	$3,081
14	Belle	WV	Ethyl	AR	NS-LSTL-UP-MCNLI-LNW	2813934	$14,136	$2,060	$3,708	$3,442	$3,708
15	Belle	WV	Hurley	WA	NS-CHGO-BNSF	2813934	$12,100	$1,735	$3,123	$2,899	$3,123
16	Removed										
17	Belle	WV	Freeport	TX	NS-ESTL-UP	2818130	$11,812	$1,898	$3,416	$3,171	$3,416
18	Belle	WV	Garyville	LA	NS-NEWOR-CN	2813934	$22,732	$3,121	$5,617	$5,215	$5,617
19	Belle	WV	Geismar	LA	NS-NEWOR-CN	2813934	$22,732	$2,849	$5 128	$4,760	$5 128
20	Belle	WV	Janesville	WI	NS-CHGO UP	2818131	$12,100	$1,698	$3,056	$2,837	$3,056
21	Belle	WV	Laredo	TX	NS ESTL-UP	2818221	$11,812	$2,157	$3,882	$3,604	$3,882
22	Belle	WV	Laredo	TX	NS ESTL-UP	2818131	$14,136	$2,157	$3,882	$3,604	$3,882
23	Belle	WV	Lorenzo	IL	NS CHGO BNSF	2813980	$12,100	$1,725	$3,106	$2,883	$3,106
24	Belle	WV	Los Angeles	CA	NS SIRR-BNSF	2813934	$13,450	$1,913	$3,479	$3,230	$3,479
25	Belle	WV	Los Angeles	CA	NS-CHGO UP	2818130	$8 533	$1,722	$3,099	$2,877	$3,099
26	Removed										
27	Belle	WV	Midlothian	IL	NS CHGO-CN	2818131	$12,100	$1,706	$3,070	$2,850	$3,070
28	Removed										
29	Belle	WV	Saint Paul	MN	NS CHGO BNSF	2818221	$8,533	$1,891	$3,405	$3,161	$3,405
30	Belle	WV	San Dimas	CA	NS CHGO UP	2813980	$12,100	$1,855	$3,338	$3,099	$3,338
31	Removed										
32	Belle	WV	St Gabriel	LA	NS-NEWOR CN	2813934	$22,732	$3,090	$5,561	$5,163	$5,561
33	Belle	WV	St Joseph	MO	NS-KCITY-UP	2818130	$13,535	$2,704	$4,867	$4,518	$4,867
34	Removed										
35	Belle	WV	Strang	TX	NS ESTL-UP	2818221	$11,812	$2,242	$4,035	$3,746	$4,035
36	Belle	WV	Strang	TX	NS-ESTL-BNSF	2813934	$14,136	$1 839	$3,311	$3,074	$3,311
37	Belle	WV	Strang	TX	NS-LSTL-UP	2819183	$4,531	$1,966	$3,539	$3,285	$3,539
38	Removed										
39	Belle	WV	Texas City	TX	NS-ESTL-UP	2813934	$14,136	$2,059	$3,706	$3 141	$3,706
40	Belle	WV	Verona	MO	NS LSTL-BNSF	2813934	$14,136	$2,137	$3,847	$3,571	$3,847
41	Belle	WV	West Memphis	AR	NS-KCITY-UP	2813934	$19,539	$2,690	$4,842	$4,495	$4,812
42	Belle	WV	Winford Spur	LA	NS-MI RID KCS	2813980	$19,888	$2,604	$4,687	$4,351	$4,687
43	Belle	WV	Wichita	KS	NS-LSTL-BNSF	2813934	$14,136	$2 180	$3,925	$3,644	$3 925
44	Bloomington	IN	Greenville	SC	UP-NEWOR-NS	2821142	$6 113	$1,879	$3,382	$3,140	$3 382
45	Bloomington	IN	Washington, Warren	NJ	UP-LSTL-NS	2821142	$9,644	$2,617	$4,710	$4,372	$4,710
46	Removed										
47	Charleston; Bradley	IN	Woodstock	IN	NS-MEMPH CN	2812220	$4,170	$1,173	$2,111	$1,960	$2,111

Comparison of NS Tariff Rates and
Maximum Rates Per Car for DuPont Movements - 1Q11

	Origin		Destination					1Q2011				
	City	St	City	St	Railroad(s)	Commodity	Tariff Rate 1/	Phase III Cost 1/	Jurisdictional Threshold 1/	SAC Rate 2/	STB Maximum Rate 3/
	(1)		(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)
48.	Cresap	WV	Edgemoor	DE	CSXT-HAGTN-NS	2991315	$3,591	$727	$1,309	$1,215	$1,309
49	Dowling	TX	Fort Mill	SC	KCS-MERID NS	2815112	$7,690	$1,963	$3,534	$3,281	$3,534
50	Edgemoor	DE	Garland	TX	NS-MERID-KCS	2816130	$9,388	$3,159	$5,687	$5,279	$5,687
51	Edgemoor	DE	Gross	MI	NS-CHGO-CN	2816130	$9,844	$2,113	$4,344	$4,033	$4,344
52	Edgemoor	DE	Laredo	TX	NS-ESTL-UP	2816130	$10,991	$2,794	$5,029	$4,668	$5,029
53	Edgemoor	DE	Madawaska	ME	NS-ROUP1-CN	2816130	$5,029	$1,441	$2,594	$2,408	$2,594
54	Edgemoor	DE	Pasadena	TX	NS-ESTL-UP	2819971	$24,453	$2,735	$4,923	$4,570	$4,923
55	Edgemoor	DE	Port Huron	MI	NS-BUFF-CN	2816130	$7,404	$1,878	$3,381	$3,139	$3,381
56	Edgemoor	DE	Portland	ME	NS-MCV-PAS-AYLRM-ST	2816130	$5,029	$1,438	$2,589	$2,403	$2,589
57	Edgemoor	DE	Portland	OR	NS-CHGO BNSF	2816130	$9,844	$2,436	$4,385	$4,070	$4,385
58	Edgemoor	DE	Quinnesec	MI	NS CHGO CN	2816130	$9,844	$2,412	$4,341	$4,030	$4,341
59	Edgemoor	DE	Riley's	ME	NS MCV-PAS-AYLRM-ST	2816130	$5,029	$1,442	$2,596	$2,410	$2,596
60	Edgemoor	DE	Rumford	ME	NS-MCV-PAS-AYLRM-ST	2816130	$5,029	$1,438	$2,588	$2,402	$2,588
61	Removed										
62.	Edgemoor	DE	Shawmutt	ME	NS-MCV-PAS-AYLRM-ST	2816130	$5,029	$1,439	$2,591	$2,405	$2,591
63.	Edgemoor	DE	Snoboy	CA	NS CHGO-UP	2816130	$9,844	$2,440	$4,393	$4,078	$4,393
64.	Edgemoor	DE	Snoboy	CA	NS-STRTR-BNSF	2816130	$6,205	$2,626	$4,727	$4,388	$4,727
65	Edgemoor	DE	St Paul	MN	NS CHGO-UP	2816130	$9,844	$2,439	$4,391	$4,076	$4,391
66	Removed										
67	Edgemoor	DE	West Monroe	LA	NS-MERID-KCS	2816130	$9,388	$3,170	$5,706	$5,297	$5,706
68	Edgemoor	DE	Wheeling	IL	NS-CHGO CN	2816130	$9,844	$2,456	$4,422	$4,105	$4,422
69	Enid	OK	Edgemoor	DE	BNSF-ESTL-NS	2991315	$12,624	$2,814	$5,066	$4,703	$5,066
70	Removed										
71	Gregory	TX	Dragon	MS	UP-NLWOR-NS	2813984	$2,486	$557	$1,003	$931	$1,003
72	Removed										
73	Gregory	TX	Royce	NJ	UP-LSTL-NS	2813984	$21,912	$2,967	$5,341	$4,958	$5,341
74	Removed										
75	Lemont	IL	Edgemoor	DE	BNSF-CHGO-NS	2991315	$8,384	$2,110	$4,158	$3,860	$4,158
76	Lemoyne	AL	Artesia	MS	NS-MERID KCS	4810560	$8,983	$1,372	$2,470	$2,293	$2,470
77	McIntosh	AL	Burnside	LA	NS-MOBILE-CN	2819330	$2,400	$348	$627	$582	$627
78	McIntosh	AL	Delisle	MS	NS-MOBILE-CN-HATBG-KCS	2812815	$2,900	$353	$635	$589	$635
79.	McIntosh	AL	Delisle	MS	NS-MOBILE-CN-HATBG-KCS	2812220	$2,400	$359	$646	$599	$646
80.	McIntosh	AL	Orange	TX	NS-NLWOR-UP	2812220	$9,214	$1,748	$3,147	$2,921	$3,147
81.	McIntosh	AL	Woodstock	TN	NS-MOBILE-CN	2812220	$2,400	$358	$645	$599	$645
82.	Orange	TX	Greenville	SC	UP-NLWOR-NS	2821142	$6,113	$2,293	$4,127	$3,831	$4,127
83	Orange	TX	Washington Warren	NJ	UP-LSTL-NS	2821142	$9,644	$2,444	$4,399	$4,084	$4,399
84	Pascagoula	MS	Fort Mill	SC	MSL-MOBILE-NS	2815112	$8,928	$2,286	$4,114	$3,819	$4,114
85	Pascagoula	MS	Lemoyne	AL	MSL-MOBILE-NS	2815112	$2,758	$305	$550	$510	$550
86	Strang	TX	Lemoyne	AL	UP-NLWOR-NS	2812350	$6,899	$1,957	$3,522	$3,270	$3,522
87	Beauharnois	PQ	Edgemoor	DE	CSXT-BUFF-NS	2812815	$12,375	$1,570	$2,826	$2,623	$2,826
88	Removed										
89	Belle	WV	Gainesville	GA	NS CINTI CSXT	2813980	$10,487	$1,591	$2,864	$2,659	$2,864
90	Belle	WV	Port Bienville	MS	NS-ATLA CSXT-ANSLE-PBVR	2813934	$12,839	$2,679	$4,823	$4,477	$4,823
91	Belle	WV	Theodore	AL	NS CINTI CSXT	2813934	$10,487	$1,581	$2,845	$2,642	$2,845
92	Bellwood	VA	Dallas	GA	CSXT-PTRSB-NS	2819315	$8,926	$2,531	$4,557	$4,230	$4,557
93	Bellwood	VA	Fort Mill	SC	CSXT-CHLTL-NS	2819315	$1,061	$626	$1,126	$1,045	$1,126
94	Bellwood	VA	Rockwell	NC	CSXT-PTRSB-NS	2819315	$3,431	$1,076	$1,937	$1,798	$1,937
95	Removed										
96	Danville	VA	Amphill	VA	NS-PTRSB CSXT	3274110	$1,585	$698	$1,257	$1,167	$1,257
97	Edgemoor	DE	New Johnsonville	TN	NS CINTI CSXT	2816130	$9,085	$2,310	$4,159	$3,861	$4,159
98	Enid	OK	Edgemoor	DE	BNSF-ESTL-NS	2991315	$8,409	$1,505	$6,309	$5,856	$6,309
99	Loudon	TN	Grainger	NC	NS CHATT CSXT	2818512	$1,490	$624	$1,124	$1,043	$1,124
100	Loudon	TN	Grainger	NC	NS CHATT-CSXT	2818512	$1,684	$480	$863	$801	$863
101.	Miami Fort	OH	Dallas	GA	CSXT-CINTI-NS	2819315	$3,825	$1,710	$3,078	$2,857	$3,078
102	Miami Fort	OH	Gracewood	GA	CSXT CHATT-NS	2819325	$6,221	$1,509	$2,717	$2,522	$2,717
103	Miami Fort	OH	McIntosh	AL	CSXT CHATT-NS	2819310	$6,210	$1,061	$1,909	$1,772	$1,909
104	Removed										
105	Removed										
106	Miami Fort	OH	Pepper	VA	CSXT-CINTI-NS	2819345	$3,411	$2,287	$4,116	$3,821	$4,116
107	Natrium	WV	Belle	WV	CSXT-CINTI-NS	2812220	$5,505	$1,620	$2,915	$2,707	$2,915
108	Natrium	WV	Danville	VA	CSXT-LYNCH NS	2812220	$2,553	$414	$746	$692	$746
109	New Johnsonville	TN	Chapman	PA	CSXT-CINTI-NS	2816130	$7,246	$2,292	$4,126	$3,831	$4,126
110	Removed										
111	New Johnsonville	TN	Morrow	GA	CSXT-CHATT-NS	2816130	$4,560	$732	$1,317	$1,222	$1,317
112.	Niagara Falls	NY	Belle	WV	CSXT CLMBO NS	2812220	$3,051	$808	$1,455	$1,351	$1,455
113	Niagara Falls	NY	Edgemoor	DE	CSXT-BUFF-NS	2812815	$8,033	$1,577	$2,839	$2,636	$2,839
114	Niagara Falls	NY	Edgemoor	DE	CSXT-BUFT-NS	2812220	$3,922	$1,609	$2,896	$2,688	$2,896
115	Pascagoula	MS	Fort Mill	SC	CSXT-ATLA-NS	2815112	$5,066	$1,301	$2,342	$2,174	$2,342
116	Starke	FL	Huntsville	AL	CSXT-DCTUR-NS	1441325	$1,025	$312	$561	$521	$561
117	Starke	FL	Huntsville	AL	CSXT-DCTUR-NS	1441325	$1,128	$497	$895	$831	$895

Comparison of NS Tariff Rates and
Maximum Rates Per Car for DuPont Movements - 1Q11

	Origin		Destination				1Q2011				
	City	ST	City	ST	Railroad(s)	Commodity	Tariff Rate 1/	Phase III Cost 1/	Jurisdictional Threshold 1/	SAC Rate 2/	STB Maximum Rate 3/
	(1)		(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)
118	Wurtland	KY	Fort Mill	SC	CSXT CHLTL-NS	2819315	$1,005	$629	$1,131	$1 050	$1,131
119.	Wurtland	KY	McIntosh	AL	CSXT-BHAM-NS	2819315	$2 120	$851	$1,532	$1,422	$1,532
120.	Belle	WV	Divine	IL	NS PINE-CN	2813980	$8,265	$1,637	$2,947	$2,736	$2,917
121.	Belle	WV	Mapleton	IL	NS-LOGPT-TPW	2813934	$7,845	$1,418	$2,606	$2,419	$2,606
122.	Burnside	LA	Gracewood	GA	CN-NPWOR-NS	2819325	$10,777	$2,100	$3,780	$3,509	$3,780
123	Lemont	IL	Ridgemoor	DL	BNSF CHGO-NS	2991315	$9,864	$2,944	$5,298	$4,919	$5,298
124	New Johnsonville	TN	McDonough	GA	CSXT CHATT-NS	2816130	$4,500	$1,028	$1,850	$1 717	$1,850
125	Charleston	TN	Woodstock	TN	NS-MEMPH-CN	2812410	$9 265	$1 157	$2,083	$1,934	$2,083
126	Reybold	DE	Albuquerque	NM	NS-STR1R-BNSF	2819315	xxx	$2 510	$4,518	xxx	xxx
127.	Reybold	DE	Baltimore	MD	NS-BALBV-CSXT	2819315	xxx	$437	$787	xxx	xxx
128	Reybold	DE	Blair	NE	NS-CHGO-UP	2819315	xxx	$2,330	$4,195	xxx	xxx
129	Reybold	DE	Brewton	AL	NS-BHAM CSXT	2819315	xxx	$2,637	$4,747	xxx	xxx
130	Reybold	DE	Castle Hayne	NC	NS CHLTL-CSXT	2819315	xxx	$1,828	$3,291	xxx	xxx
131	Reybold	DE	Clifton	AZ	NS KCITY-UP	2819315	xxx	$3,351	$6,032	xxx	xxx
132	Reybold	DE	Corson	SD	NS CHGO-BNSF	2819315	xxx	$2,329	$4,193	xxx	xxx
133	Removed										
134	Reybold	DE	Ferguson	MS	NS-MEMPHIS-CN	2819315	xxx	$3,045	$5,482	xxx	xxx
135	Reybold	DE	Hastings	NE	NS-CHGO-BNSF	2819315	xxx	$2,330	$4,193	xxx	xxx
136	Reybold	DE	Indianapolis	IN	NS CINTI CSXT	2819315	xxx	$2 105	$3,789	xxx	xxx
137	Reybold	DE	Omaha	NE	NS CHGO-UP	2819315	xxx	$2 330	$4,194	xxx	xxx
138	Reybold	DE	Orange	TX	NS LSTL-BNSF	2819315	xxx	$2 781	$5,007	xxx	xxx
139.	Reybold	DE	Phoenix	AZ	NS-STR1R BNSF	2819315	xxx	$2,509	$4,517	xxx	xxx
140	Reybold	DE	Sioux City	IA	NS CHGO BNSF	2819315	xxx	$2,330	$4 193	xxx	xxx
141	Reybold	DE	Toledo	OH	NS-TOLD-CSXT	2819315	xxx	$2 922	$5,259	xxx	xxx
142	Reybold	DE	Washington	WV	NS-HAGIN-CSXT	2819315	xxx	$699	$1 258	xxx	xxx

1/ From Rebuttal Exhibit II-A-8
2/ MMM Ratio from Rebuttal Exhibit III-H-2 x Column (6)
3/ Greater of Column (7) or Column (8)

TAB 11

Comparison of NS Tariff Rates and
Maximum Rates Per Car for DuPont Movements - 2Q11

	Origin		Destination				2Q2011				
	City	St	City	St	Railroad(s)	Commodity	Tariff Rate 1/	Phase III Cost 1/	Jurisdictional Threshold 1/	SAC Rate 2/	STB Maximum Rate 3/
	(1)		(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)
Exhibit A - Local Moves											
1	Removed										
2	Bayway	NJ	Waynesville	NC	NS	2819315	$12,855	$2,638	$4,748	$4,408	$4,748
3	Belle	WV	Danville	IL	NS	2813980	$11,836	$1,930	$3,471	$3,225	$3,471
4.	Removed										
5	Removed										
6	Removed										
7.	Removed										
8	Removed										
9	Belle	WV	Wyandotte	MI	NS	2813934	$8,814	$1,431	$2,575	$2,391	$2,575
10	Charleston	IN	Edgemoor	DE	NS	2812815	$18,562	$2,613	$4,703	$4,366	$4,703
11	Edgemoor	DE	Chicago	IL	NS	2816130	$9,844	$2,614	$4,706	$4,369	$4,706
12	Edgemoor	DE	Chillicothe	OH	NS	2816130	$6,510	$2,546	$4,582	$4,254	$4,582
13	Edgemoor	DE	Mahrt	AL	NS	2816130	$12,376	$3,364	$6,056	$5,622	$6,056
14	Edgemoor	DE	Riverwood Intl	GA	NS	2816130	$6,270	$3,052	$5,494	$5,100	$5,494
15.	Edgemoor	DE	Wabash	IN	NS	2816130	$6,627	$2,676	$4,817	$4,472	$4,817
16	Lemoyne	AL	Gaint	SC	NS	4810560	$5,136	$2,756	$4,961	$4,606	$4,961
17	Loudon	TN	Braithwaite	LA	NS	2818512	$4,125	$2,249	$4,048	$3,758	$4,048
18	Louisville	KY	Decatur	IL	NS	2819450	$4,596	$1,434	$2,582	$2,397	$2,582
19	Louisville	KY	LaFayette	IN	NS	2819450	$6,139	$1,795	$3,232	$3,000	$3,232
20	Removed										
21	Removed										
22	McIntosh	AL	Lemoyne	AL	NS	2812220	$1,605	$568	$1,022	$949	$1,022
23	Reybold	DE	Detroit	MI	NS	2819315	$7,812	$2,092	$3,765	$3,495	$3,765
24	Reybold	DE	Fort Mill	SC	NS	2819315	$6,108	$2,097	$3,774	$3,504	$3,774
25	Reybold	DE	Morrisville	PA	NS	2819315	$3,614	$658	$1,185	$1,100	$1,185
Exhibit B - Joint Moves											
1	Belle	WV	Anaheim	CA	NS-CHGO-UP	2813980	$12,100	$1,804	$3,247	$3,014	$3,247
2	Belle	WV	Bayport	TX	NS-LSTL-UP	2818620	$11,812	$2,269	$4,085	$3,792	$4,085
3	Removed										
4.	Belle	WV	Brownsville	TX	NS-LSTL-UP	2818221	$11,812	$2,244	$4,039	$3,749	$4,039
5	Belle	WV	Burley	ID	NS-CHGO-UP	2813934	$12,100	$1,804	$3,247	$3,015	$3,247
6	Belle	WV	Cadet	MO	NS KCITY-UP	2813934	$19,539	$2,810	$5,058	$4,695	$5,058
7	Removed										
8	Belle	WV	Channelview	TX	NS LSTL-UP	2818130	$11,812	$2,077	$3,738	$3,470	$3,738
9	Belle	WV	City of Commerce	CA	NS-STRTR-BNSF	2818221	$10,242	$1,958	$3,525	$3,272	$3,525
10	Belle	WV	Conroe	TX	NS-LSTL-BNSF	2813934	$14,136	$2,237	$4,027	$3,738	$4,027
11	Belle	WV	Corsicana	TX	NS LSTL-UP	2813934	$14,136	$2,125	$3,824	$3,550	$3,824
12	Removed										
13	Belle	WV	East Billings	MT	NS CHGO BNSF	2818130	$8,533	$1,781	$3,205	$2,975	$3,205
14	Belle	WV	Ethyl	AR	NS-LSTL-UP MCNEIL-LNW	2813934	$14,136	$2,143	$3,858	$3,581	$3,858
15.	Belle	WV	Finley	WA	NS CHGO BNSF	2813934	$12,100	$1,805	$3,249	$3,016	$3,249
16	Removed										
17	Belle	WV	Freeport	TX	NS LSTL-UP	2818130	$11,812	$1,974	$3,553	$3,299	$3,553
18	Belle	WV	Garyville	LA	NS NEWOR-CN	2813934	$22,732	$3,247	$5,844	$5,425	$5,844
19	Belle	WV	Gessmar	LA	NS NEWOR CN	2813934	$22,732	$2,964	$5,335	$4,953	$5,335
20.	Belle	WV	Janesville	WI	NS CHGO-UP	2818131	$12,100	$1,766	$3,179	$2,951	$3,179
21	Belle	WV	Laredo	TX	NS LSTL-UP	2818221	$11,812	$2,244	$4,039	$3,749	$4,039
22	Belle	WV	Laredo	TX	NS-LSTL-UP	2818131	$14,136	$2,244	$4,039	$3,749	$4,039
23	Belle	WV	Lorenzo	IL	NS CHGO BNSF	2813980	$12,100	$1,795	$3,231	$3,000	$3,231
24	Belle	WV	Los Angeles	CA	NS-STRTR-BNSF	2813934	$13,450	$2,011	$3,620	$3,360	$3,620
25	Belle	WV	Los Angeles	CA	NS CHGO UP	2818130	$8,533	$1,791	$3,224	$2,993	$3,224
26	Removed										
27	Belle	WV	Millsdale	IL	NS-CHGO CN	2818131	$12,100	$1,774	$3,194	$2,965	$3,194
28	Removed										
29	Belle	WV	Saint Paul	MN	NS CHGO-BNSF	2818221	$8,533	$1,968	$3,542	$3,288	$3,542
30	Belle	WV	San Dimas	CA	NS CHGO UP	2813980	$12,100	$1,929	$3,473	$3,221	$3,473
31	Removed										
32.	Belle	WV	St Gabriel	LA	NS-NEWOR-CN	2813934	$22,732	$3,214	$5,786	$5,371	$5,786
33	Belle	WV	St Joseph	MO	NS KCITY-UP	2818130	$13,535	$2,813	$5,063	$4,700	$5,063
34	Removed										
35	Belle	WV	Strang	TX	NS LSTL-UP	2818221	$11,812	$2,332	$4,198	$3,897	$4,198
36	Belle	WV	Strang	TX	NS-LSTL-BNSF	2813934	$14,136	$1,914	$3,445	$3,198	$3,445
37	Belle	WV	Strang	TX	NS LSTL-UP	2819183	$4,606	$2,045	$3,681	$3,417	$3,681
38.	Removed										
39.	Belle	WV	Texas City	TX	NS LSTL-UP	2813934	$14,136	$2,142	$3,856	$3,579	$3,856
40	Belle	WV	Verona	MO	NS-LSTL-BNSF	2813934	$14,136	$2,223	$4,002	$3,715	$4,002
41.	Belle	WV	West Memphis	AR	NS-KCITY-UP	2813934	$19,519	$2,798	$5,037	$4,676	$5,037
42	Belle	WV	Winfield Spur	LA	NS-MI BHD-KCS	2813980	$19,888	$2,709	$4,877	$4,527	$4,877
43	Belle	WV	Wichita	KS	NS-LSTL-BNSF	2813934	$14,136	$2,268	$4,083	$3,791	$4,083
44	Bloomington	IN	Greenville	SC	UP-NLWOR-NS	2821142	$6,113	$1,955	$3,519	$3,267	$3,519
45.	Bloomington	IN	Washington; Warren	NJ	UP LSTL-NS	2821142	$9,644	$2,722	$4,900	$4,549	$4,900
46	Removed										
47.	Charleston Bradley	IN	Woodstock	TN	NS-MEMPH CN	2812220	$4,170	$1,220	$2,196	$2,039	$2,196

Comparison of NS Tariff Rates and
Maximum Rates Per Car for DuPont Movements - 2Q11

	Origin		Destination				2Q2011				
	City (1)	ST	City (2)	ST	Railroad(s) (3)	Commodity (4)	Tariff Rate 1/ (5)	Phase III Cost 1/ (6)	Jurisdictional Threshold 1/ (7)	SAC Rate 2/ (8)	STB Maximum Rate 3/ (9)
48	Cresap	WV	Edgemoor	DE	CSXT-HAGTN-NS	2991315	$3,591	$757	$1,362	$1,264	$1,362
49	Dowling	TX	Fort Mill	SC	KCS-MERID-NS	2815112	$7,690	$2,043	$3,677	$3,413	$3,677
50	Edgemoor	DE	Garland	TX	NS-MERID-KCS	2816130	$9,388	$3,287	$5,916	$5,492	$5,916
51.	Edgemoor	DE	Gross	MI	NS-CHGO-CN	2816130	$9,844	$2,511	$4,519	$4,196	$4,519
52	Edgemoor	DE	Laredo	TX	NS-LSTL-UP	2816130	$10,991	$2,906	$5,232	$4,857	$5,232
53	Edgemoor	DE	Madawaska	ME	NS-ROUPT-CN	2816130	$5,029	$1,499	$2,698	$2,505	$2,698
54	Edgemoor	DE	Pasadena	TX	NS-LSTL-UP	2819971	$24,453	$2,845	$5,121	$4,754	$5,121
55	Edgemoor	DE	Port Huron	MI	NS-BUFF-CN	2816130	$7,404	$1,954	$3,517	$3,265	$3,517
56.	Edgemoor	DE	Portland	ME	NS-MCV-PAS-AYTRM-ST	2816130	$5,029	$1,496	$2,693	$2,500	$2,693
57	Edgemoor	DE	Portland	OR	NS-CHGO-BNSF	2816130	$9,844	$2,534	$4,561	$4,235	$4,561
58	Edgemoor	DE	Quinnesec	MI	NS-CHGO-CN	2816130	$9,844	$2,509	$4,516	$4,192	$4,516
59	Edgemoor	DE	Riley's	ME	NS-MCV-PAS-AYTRM-ST	2816130	$5,029	$1,500	$2,701	$2,507	$2,701
60	Edgemoor	DE	Rumford	ME	NS-MCV-PAS-AYTRM-ST	2816130	$5,029	$1,496	$2,692	$2,499	$2,692
61	Removed										
62	Edgemoor	DE	Shawmut	ME	NS-MCV-PAS-AYTRM-ST	2816130	$5,029	$1,497	$2,695	$2,502	$2,695
63	Edgemoor	DE	Soquel	CA	NS-CHGO-UP	2816130	$9,844	$2,519	$4,570	$4,242	$4,570
64	Edgemoor	DE	Soquel	CA	NS-STRTR-BNSF	2816130	$10,944	$2,732	$4,918	$4,565	$4,918
65	Edgemoor	DE	St Paul	MN	NS-CHGO-UP	2816130	$9,844	$2,538	$4,568	$4,240	$4,568
66	Removed										
67.	Edgemoor	DE	West Monroe	LA	NS-MERID-KCS	2816130	$9,388	$3,298	$5,936	$5,510	$5,936
68	Edgemoor	DE	Wheeling	IL	NS-CHGO-CN	2816130	$9,844	$2,555	$4,600	$4,270	$4,600
69	Enid	OK	Edgemoor	DE	BNSF-LSTL-NS	2991315	$12,624	$2,928	$5,270	$4,893	$5,270
70	Removed										
71	Gregory	TX	Dragon	MS	UP-NLWOR-NS	2813984	$2,486	$580	$1,043	$969	$1,043
72	Removed										
73	Gregory	TX	Royce	NJ	UP-LSTL-NS	2813984	$21,912	$3,087	$5,557	$5,158	$5,557
74	Removed										
75	Lemont	IL	Edgemoor	DE	BNSF-CHGO-NS	2991315	$8,384	$2,403	$4,326	$4,016	$4,326
76.	Lemoyne	AL	Artesia	MS	NS-MERID-KCS	4810560	$8,983	$1,427	$2,569	$2,385	$2,569
77.	McIntosh	AL	Burnside	LA	NS-MOBIL-CN	2819330	$2,400	$362	$652	$605	$652
78	McIntosh	AL	Delisle	MS	NS-MOBIL-CN-HATBG-KCS	2812815	$2,900	$367	$660	$613	$660
79.	McIntosh	AL	Delisle	MS	NS-MOBIL-CN-HATBG-KCS	2812220	$2,400	$373	$672	$624	$672
80	McIntosh	AL	Orange	TX	NS-NEWOR-UP	2812220	$9,214	$1,819	$3,274	$3,039	$3,274
81	McIntosh	AL	Woodstock	TN	NS-MOBIL-CN	2812220	$2,400	$373	$671	$623	$671
82.	Orange	TX	Greenville	SC	UP-NLWOR-NS	2821142	$6,113	$2,385	$4,294	$3,986	$4,291
83	Orange	TX	Washington; Warren	NJ	UP-LSTL-NS	2821142	$9,641	$2,543	$4,577	$4,249	$4,577
84	Pascagoula	MS	Fort Mill	SC	MSE-MOBIL-NS	2815112	$8,928	$2,378	$4,280	$3,973	$4,280
85	Pascagoula	MS	Lemoyne	AL	MSE-MOBIL-NS	2815112	$2,758	$318	$572	$531	$572
86	Strang	TX	Lemoyne	AL	UP-NLWOR-NS	2812350	$6,899	$2,016	$3,664	$3,401	$3,664
87	Beauharnois	PQ	Edgemoor	DE	CSXT-BUFF-NS	2812815	$12,375	$1,633	$2,940	$2,729	$2,940
88	Removed										
89	Belle	WV	Gainesville	GA	NS-CINTI-CSXT	2813980	$10,487	$1,655	$2,979	$2,766	$2,979
90	Belle	WV	Port Bienville	MS	NS-ATLA-CSXT-ANSTL-PBVR	2813934	$12,839	$2,787	$5,017	$4,658	$5,017
91	Belle	WV	Theodore	AL	NS-CINTI-CSXT	2813934	$10,487	$1,645	$2,960	$2,748	$2,960
92	Bellwood	VA	Dallas	GA	CSXT-PTRSB-NS	2819315	$8,926	$2,634	$4,740	$4,401	$4,740
93	Bellwood	VA	Fort Mill	SC	CSXT-CHLTE-NS	2819315	$1,061	$651	$1,172	$1,088	$1,172
94	Bellwood	VA	Rockwell	NC	CSXT-PTRSB-NS	2819315	$1,431	$1,119	$2,015	$1,870	$2,015
95.	Removed										
96	Danville	VA	Argyll	VA	NS-PTRSB-CSXT	3274110	$1,585	$726	$1,308	$1,214	$1,308
97	Edgemoor	DE	New Johnsonville	TN	NS-CINTI-CSXT	2816130	$8,966	$2,404	$4,326	$4,016	$4,326
98	Enid	OK	Edgemoor	DE	BNSF-LSTL-NS	2991315	$6,986	$3,646	$6,563	$6,093	$6,563
99.	Loudon	TN	Graingers	NC	NS-CHATT-CSXT	2818512	$1,490	$649	$1,169	$1,085	$1,169
100	Loudon	TN	Graingers	NC	NS-CHATT-CSXT	2818512	$1,684	$499	$898	$834	$898
101.	Miami Fort	OH	Dallas	GA	CSXT-CINTI-NS	2819315	$3,532	$1,779	$3,202	$2,972	$3,202
102.	Miami Fort	OH	Gracewood	GA	CSXT-CHATT-NS	2819325	$5,400	$1,570	$2,826	$2,624	$2,826
103.	Miami Fort	OH	McIntosh	AL	CSXT-CHATT-NS	2819310	$5,638	$1,103	$1,986	$1,844	$1,986
104	Removed										
105	Removed										
106	Miami Fort	OH	Pepper	VA	CSXT-CINTI-NS	2819345	$3,000	$2,379	$4,282	$3,975	$4,282
107	Natrium	WV	Belle	WV	CSXT-CINTI-NS	2812220	$4,800	$1,685	$3,033	$2,816	$3,033
108	Natrium	WV	Danville	VA	CSXT-LYNCH-NS	2812220	$2,520	$431	$776	$720	$776
109	New Johnsonville	TN	Chapman	PA	CSXT-CINTI-NS	2816130	$7,151	$2,385	$4,293	$3,985	$4,293
110	Removed										
111	New Johnsonville	TN	Morrow	GA	CSXT-CHATT-NS	2816130	$4,500	$761	$1,370	$1,272	$1,370
112	Niagara Falls	NY	Belle	WV	CSXT-CLMBO-NS	2812220	$3,000	$841	$1,514	$1,405	$1,514
113	Niagara Falls	NY	Edgemoor	DE	CSXT-BUFF-NS	2812815	$7,022	$1,641	$2,954	$2,742	$2,954
114	Niagara Falls	NY	Edgemoor	DE	CSXT-BUFF-NS	2812220	$3,800	$1,674	$3,012	$2,796	$3,012
115.	Pascagoula	MS	Fort Mill	SC	CSXT-ATLA-NS	2815112	$5,000	$1,353	$2,436	$2,262	$2,436
116	Starke	FL	Huntsville	AL	CSXT-DCTUR-NS	1441325	$1,025	$324	$584	$542	$584
117.	Starke	FL	Huntsville	AL	CSXT-DCTUR-NS	1441325	$1,128	$517	$931	$865	$931

Comparison of NS Tariff Rates and
Maximum Rates Per Car for DuPont Movements - 2Q11

	Origin City (1)	ST	Destination City (2)	ST	Railroad(s) (3)	Commodity (4)	2Q2011 Tariff Rate 1/ (5)	Phase III Cost 1/ (6)	Jurisdictional Threshold 1/ (7)	SAC Rate 2/ (8)	STB Maximum Rate 3/ (9)
118	Wurtland	KY	Fort Mill	SC	CSXT-CHLIE-NS	2819315	$992	$654	$1,177	$1,093	$1,177
119	Wurtland	KY	McIntosh	AL	CSXT-BHAM-NS	2819315	$2,000	$886	$1,594	$1,480	$1,594
120	Belle	WV	Divine	IL	NS-PINE-CN	2813980	$7,502	$1,703	$3,066	$2,846	$3,066
121	Belle	WV	Mapleton	IL	NS-LOGP1-IPW	2813914	$7,845	$1 506	$2 711	$2 517	$2 711
122	Burnside	LA	Gracewood	GA	CN-NLWOR-NS	2819325	$9,000	$2,185	$3,933	$3 651	$3,933
123.	Lemont	IL	Edgemoor	DE	BNSF-CHGO NS	2991315	$9,864	$3,062	$5,512	$5,117	$5,512
124	New Johnsonville	TN	McDonough	GA	CSXT-CHATT-NS	2816130	$4,815	$1,069	$1,925	$1,787	$1,925
125	Charleston	TN	Woodstock	TN	NS-MEMPH CN	2812410	$9,265	$1,204	$2,167	$2,012	$2 167
126	Reybold	DE	Albuquerque	NM	NS-STR1R-BNSI	2819315	$10,844	$2,611	$4,700	$4 363	$4 700
127.	Reybold	DE	Baltimore	MD	NS-BALBV CSXT	2819315	$3,900	$455	$818	$760	$818
128	Reybold	DE	Blair	NE	NS CHGO-UP	2819315	$10,008	$2,424	$4,364	$4 051	$4,364
129	Reybold	DE	Brewton	AL	NS BHAM-CSXT	2819315	$10 476	$2,744	$4,938	$4 585	$4,938
130	Reybold	DE	Castle Hayne	NC	NS CHLIE-CSXT	2819315	$5,844	$1,902	$3,424	$3 178	$3 424
131.	Reybold	DE	Clifton	AZ	NS-KCITY-UP	2819315	$14,928	$3,486	$6,275	$5,826	$6,275
132	Reybold	DE	Corson	SD	NS CHGO BNSF	2819315	$10,008	$2,423	$4,362	$4,049	$4,362
133	Removed										
134.	Reybold	DE	Ferguson	MS	NS-MEMPHIS CN	2819315	$12,882	$3,168	$5,703	$5,294	$5,703
135	Reybold	DE	Hastings	NE	NS CHGO BNSF	2819315	$10,008	$2,424	$4,362	$4,050	$4,362
136	Reybold	DE	Indianapolis	IN	NS CINTI-CSXT	2819315	$8,880	$2,190	$3 942	$3,659	$3,942
137	Reybold	DE	Omaha	NE	NS CHGO-UP	2819315	$10,008	$2,424	$4,363	$4,051	$4,363
138	Reybold	DE	Orange	TX	NS-LSTE-BNSI	2819315	$12,192	$2,894	$5,209	$4,835	$5,209
139	Reybold	DE	Phoenix	AZ	NS-STR1R-BNSF	2819315	$10,844	$2,611	$4,699	$4,363	$4,699
140	Reybold	DE	Sioux City	IA	NS CHGO BNSF	2819315	$10,008	$2,424	$4,362	$4,050	$4,362
141	Reybold	DE	Toledo	OH	NS-TOLED-CSXT	2819315	$7,200	$3,039	$5,471	$5,079	$5,471
142	Reybold	DE	Washington	WV	NS HAGTN-CSXT	2819315	$6,444	$727	$1,309	$1,215	$1,309

1/ From Rebuttal Exhibit II-A-9
2/ MMM Ratio from Rebuttal Exhibit III-H-2 x Column (6)
3/ Greater of Column (7) or Column (8)

TAB 12

Comparison of NS Tariff Rates and
Maximum Rates Per Car for DuPont Movements - 3Q11

Origin City (1)	St	Destination City (2)	St	Railroad(s) (3)	Commodity (4)	3Q2011 Tariff Rate 1/ (5)	Phase III Cost 1/ (6)	Jurisdictional Threshold 1/ (7)	SAC Rate 2/ (8)	STB Maximum Rate 3/ (9)
Exhibit A - Local Moves										
1. Removed										
2. Bayway	NJ	Waynesville	NC	NS	2819315	$12,855	$2,635	$4,742	$4,402	$4,742
3. Belle	WV	Danville	IL	NS	2813980	$11,836	$1,928	$3,470	$3,221	$3,470
4 Removed										
5. Removed										
6 Removed										
7. Removed										
8. Removed										
9 Belle	WV	Wyandotte	MI	NS	2813934	$8,814	$1,429	$2,572	$2,388	$2,572
10. Charleston	IN	Edgemoor	DE	NS	2812815	$18,562	$2,609	$4,697	$4,360	$4,697
11. Edgemoor	DE	Chicago	IL	NS	2816130	$9,844	$2,611	$4,700	$4,363	$4,700
12. Edgemoor	DE	Chillicothe	OH	NS	2816130	$6,510	$2,543	$4,577	$4,249	$4,577
13 Edgemoor	DE	Market	AL	NS	2816130	$12,376	$3,360	$6,048	$5,615	$6,048
14 Edgemoor	DE	Riverwood Intl	GA	NS	2816130	$6,270	$3,048	$5,487	$5,094	$5,487
15 Edgemoor	DE	Wabash	IN	NS	2816130	$6,627	$2,673	$4,811	$4,466	$4,811
16. Lemoyne	AL	Giant	SC	NS	4810560	$5,136	$2,753	$4,955	$4,600	$4,955
17. Loudon	TN	Braithwaite	LA	NS	2818512	$4,125	$2,246	$4,043	$3,753	$4,043
18 Louisville	KY	Decatur	IL	NS	2819450	$4,596	$1,433	$2,579	$2,394	$2,579
19 Louisville	KY	Lafayette	IN	NS	2819450	$6,139	$1,793	$3,228	$2,996	$3,228
20 Removed										
21 Removed										
22 McIntosh	AL	Lemoyne	AL	NS	2812220	$1,605	$567	$1,021	$948	$1,021
23 Reybold	DE	Detroit	MI	NS	2819315	$7,812	$2,089	$3,760	$3,491	$3,760
24 Reybold	DE	Fort Mill	SC	NS	2819315	$6,108	$2,094	$3,770	$3,499	$3,770
25 Reybold	DE	Morrisville	PA	NS	2819315	$3,614	$658	$1,184	$1,099	$1,184
Exhibit B - Joint Moves										
1 Belle	WV	Anaheim	CA	NS CHGO UP	2813980	$12,100	$1,802	$3,243	$3,011	$3,243
2. Belle	WV	Bayport	TX	NS-LSTL-UP	2818620	$11,812	$2,266	$4,080	$3,787	$4,080
3 Removed										
4 Belle	WV	Brownsville	TX	NS LSTL-UP	2818221	$11,812	$2,241	$4,034	$3,745	$4,034
5 Belle	WV	Burley	ID	NS-CHGO UP	2813934	$12,100	$1,802	$3,243	$3,011	$3,243
6 Belle	WV	Cadet	MO	NS KCITY-UP	2813934	$19,539	$2,806	$5,051	$4,689	$5,051
7 Removed										
8 Belle	WV	Channelview	TX	NS-LSTL-UP	2818130	$11,812	$2,074	$3,733	$3,465	$3,733
9 Belle	WV	City of Commerce	CA	NS-STRTR-BNSF	2818221	$10,242	$1,956	$3,520	$3,268	$3,520
10 Belle	WV	Conroe	TX	NS-LSTL-BNSF	2813934	$14,136	$2,234	$4,022	$3,733	$4,022
11 Belle	WV	Consetana	TX	NS LSTL-UP	2813934	$14,136	$2,122	$3,820	$3,546	$3,820
12 Removed										
13 Belle	WV	East Billings	MT	NS CHGO-BNSF	2818130	$8,533	$1,778	$3,201	$2,972	$3,201
14 Belle	WV	Ethyl	AR	NS-LSTL-UP-MCNPH-LNW	2813934	$14,136	$2,140	$3,853	$3,577	$3,853
15 Belle	WV	Finley	WA	NS CHGO BNSF	2813934	$12,100	$1,803	$3,245	$3,012	$3,245
16 Removed										
17 Belle	WV	Freeport	TX	NS-LSTL-UP	2818130	$11,812	$1,972	$3,549	$3,295	$3,549
18 Belle	WV	Garyville	LA	NS-NEWOR-CN	2813934	$22,732	$3,242	$5,836	$5,418	$5,836
19 Belle	WV	Geismar	LA	NS-NEWOR CN	2813934	$22,732	$2,960	$5,328	$4,946	$5,328
20 Belle	WV	Janesville	WI	NS CHGO UP	2818131	$12,100	$1,764	$3,175	$2,948	$3,175
21 Belle	WV	Laredo	TX	NS-LSTL-UP	2818221	$11,812	$2,241	$4,034	$3,745	$4,034
22 Belle	WV	Laredo	TX	NS-LSTL-UP	2818131	$14,136	$2,241	$4,034	$3,745	$4,034
23 Belle	WV	Lorenzo	IL	NS CHGO BNSF	2813980	$12,100	$1,793	$3,227	$2,996	$3,227
24 Belle	WV	Los Angeles	CA	NS STRTR-BNSF	2813934	$13,450	$2,008	$3,615	$3,356	$3,615
25 Belle	WV	Los Angeles	CA	NS-CHGO UP	2818130	$8,533	$1,789	$3,220	$2,989	$3,220
26. Removed										
27 Belle	WV	Millsdale	IL	NS CHGO CN	2818131	$12,100	$1,772	$3,190	$2,961	$3,190
28 Removed										
29 Belle	WV	Saint Paul	MN	NS-CHGO-BNSF	2818221	$8,533	$1,965	$3,537	$3,284	$3,537
30 Belle	WV	San Dimas	CA	NS-CHGO UP	2813980	$12,100	$1,927	$3,468	$3,220	$3,468
31 Removed										
32. Belle	WV	St Gabriel	LA	NS-NEWOR CN	2813934	$22,732	$3,210	$5,778	$5,364	$5,778
33 Belle	WV	St Joseph	MO	NS KCITY-UP	2818130	$13,535	$2,809	$5,057	$4,694	$5,057
34 Removed										
35 Belle	WV	Strang	TX	NS LSTL-UP	2818221	$11,812	$2,329	$4,193	$3,892	$4,193
36 Belle	WV	Strang	TX	NS-LSTL-BNSF	2813934	$14,136	$1,911	$3,440	$3,194	$3,440
37 Belle	WV	Strang	TX	NS-LSTL-UP	2819183	$5,011	$2,043	$3,677	$3,411	$3,677
38 Removed										
39 Belle	WV	Texas City	TX	NS-LSTL-UP	2813934	$14,136	$2,139	$3,851	$3,575	$3,851
40 Belle	WV	Vernon	MO	NS-LSTL-BNSF	2813934	$14,136	$2,221	$3,997	$3,711	$3,997
41 Belle	WV	West Memphis	AR	NS-KCITY-UP	2813934	$19,539	$2,795	$5,031	$4,670	$5,031
42 Belle	WV	Winfield Spur	LA	NS-MERID KCS	2813980	$19,888	$2,706	$4,870	$4,521	$4,870
43 Belle	WV	Wichita	KS	NS LSTL-BNSF	2813934	$14,136	$2,266	$4,078	$3,786	$4,078
44 Bloomington	TX	Greenville	SC	UP-NLWOR-NS	2821142	$6,113	$1,952	$3,514	$3,262	$3,514
45 Bloomington	TX	Washington, Warren	NJ	UP-LSTL-NS	2821142	$9,644	$2,719	$4,894	$4,543	$4,894
46 Removed										
47 Charleston, Bradley	IN	Woodstock	IN	NS-MEMPH-CN	2812220	$4,170	$1,218	$2,193	$2,036	$2,193

Comparison of NS Tariff Rates and
Maximum Rates Per Car for DuPont Movements - 3Q11

	Origin		Destination				3Q2011				
	City	ST	City	ST	Railroad(s)	Commodity	Tariff Rate 1/	Phase III Cost 1/	Jurisdictional Threshold 1/	SAC Rate 2/	STB Maximum Rate 3/
	(1)		(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)
48	Cresap	WV	Edgemoor	DE	CSXT-HAGTN-NS	2991315	$3,591	$756	$1,360	$1,263	$1,360
49	Dowling	TX	Fort Mill	SC	KCS MERID-NS	2815112	$7,690	$2,040	$3,672	$3,409	$3,672
50	Edgemoor	DE	Garland	TX	NS-MERID-KCS	2816130	$9,388	$3,283	$5,909	$5 485	$5 909
51	Edgemoor	DE	Gross	MI	NS CHGO-CN	2816130	$9,844	$2,508	$4,514	$4,190	$4,514
52	Edgemoor	DE	Laredo	TX	NS ESTL-UP	2816130	$10 991	$2,903	$5 225	$4 850	$5,225
53	Edgemoor	DE	Madawaska	ME	NS-ROUPT-CN	2816130	$5,029	$1,497	$2,695	$2,502	$2,695
54	Edgemoor	DE	Pasadena	TX	NS-LSTL-UP	2819971	$24,453	$2,842	$5 115	$4,748	$5,115
55	Edgemoor	DE	Port Huron	MI	NS-BUFF CN	2816130	$7,404	$1,952	$3,513	$3,261	$3,513
56	Edgemoor	DE	Portland	ME	NS-MCV-PAS-AYERM-ST	2816130	$5,029	$1,494	$2,690	$2,497	$2,690
57	Edgemoor	DE	Portland	OR	NS-CHGO BNSF	2816130	$9,844	$2,531	$4 556	$4,229	$4,556
58	Edgemoor	DE	Quonsesec	MI	NS-CHGO_CN	2816130	$9,844	$2,506	$4 510	$4,187	$4,510
59	Edgemoor	DE	Raleys	ME	NS-MCV-PAS AYERM-ST	2816130	$5,029	$1,499	$2,697	$2 504	$2 697
60	Edgemoor	DE	Rumford	ME	NS MCV-PAS-AYERM-ST	2816130	$5,029	$1,494	$2,689	$2,496	$2,689
61	Removed										
62	Edgemoor	DE	Shawmutt	ME	NS-MCV-PAS-AYERM-ST	2816130	$5,029	$1,495	$2,692	$2,499	$2,692
63	Edgemoor	DE	Snoboy	CA	NS-CHGO-UP	2816130	$9,844	$2,536	$4,564	$4,237	$4,564
64	Edgemoor	DE	Snoboy	CA	NS-STRTR-BNSF	2816130	$10,944	$2,729	$4,911	$4,559	$4,911
65	Edgemoor	DE	St Paul	MN	NS-CHGO-UP	2816130	$9,844	$2,534	$4,562	$4,235	$4,562
66	Removed										
67	Edgemoor	DE	West Monroe	LA	NS MERID KCS	2816130	$9,388	$3,294	$5,928	$5,503	$5,928
68	Edgemoor	DE	Wheeling	IL	NS CHGO-CN	2816130	$9,844	$2,552	$4,594	$4,265	$4,594
69	Enid	OK	Edgemoor	DE	BNSF-LSTL-NS	2991315	$12,624	$2,924	$5,264	$4,887	$5,264
70	Removed										
71	Gregory	TX	Dragon	MS	UP-NI WOR-NS	2813984	$2,486	$579	$1,042	$967	$1,042
72	Removed										
73	Gregory	TX	Royce	NJ	UP-LSTL-NS	2813984	$21 912	$3,083	$5,549	$5 152	$5,549
74	Removed										
75	Lemont	IL	Edgemoor	DE	BNSF-CHGO-NS	2991315	$8,384	$2,400	$4,320	$4,010	$4,320
76	Lemoyne	AL	Artesia	MS	NS-MERID-KCS	4810560	$8,983	$1,426	$2,566	$2,382	$2,566
77	McIntosh	AL	Burnside	LA	NS-MOBIL-CN	2819310	$2,400	$362	$651	$605	$651
78	McIntosh	AL	Delisle	MS	NS-MOBIL-CN-HATBG-KCS	2812815	$2,900	$366	$659	$612	$659
79	McIntosh	AL	Delisle	MS	NS-MOBIL-CN-HATBG-KCS	2812220	$2,400	$373	$671	$623	$671
80	McIntosh	AL	Orange	TX	NS-NEWOR-UP	2812220	$9,214	$1,816	$3,269	$3,035	$3,269
81	McIntosh	AL	Woodstock	IN	NS MOBIL-CN	2812220	$2,400	$372	$670	$622	$670
82	Orange	TX	Greenville	SC	UP NEWOR-NS	2821142	$6,113	$2,382	$4,288	$3,981	$4,288
83	Orange	TX	Washington, Warren	NJ	UP-LSTL-NS	2821142	$9,644	$2 540	$4,571	$4,244	$4,571
84	Pascagoula	MS	Fort Mill	SC	MSE-MOBIL-NS	2815112	$8,928	$2,375	$4,275	$3,968	$4,275
85	Pascagoula	MS	Lemoyne	AL	MSE-MOBIL-NS	2815112	$2 758	$317	$571	$530	$571
86	Strang	TX	Lemoyne	AL	UP NEWOR-NS	2812350	$6,899	$2,033	$3,659	$3,397	$3,659
87	Beauharnois	PQ	Edgemoor	DE	CSXT-BUFF-NS	2812815	$12,375	$1,631	$2,936	$2,725	$2,936
88	Removed										
89	Belle	WV	Gainesville	GA	NS-CINTI CSXT	2813980	$10,487	$1,653	$2,976	$2,762	$2 976
90	Belle	WV	Port Bienville	MS	NS-ATLA CSXT-ANSLE-PBVR	2813934	$12,839	$2 784	$5,011	$4,652	$5,011
91	Belle	WV	Theodore	AL	NS CINTI CSXT	2813934	$10,487	$1 642	$2 956	$2,745	$2 956
92	Bellwood	VA	Dallas	GA	CSXT-PIRSB-NS	2819315	$8 926	$2,610	$4 734	$4,395	$4 734
93	Bellwood	VA	Fort Mill	SC	CSXT CHLTL-NS	2819315	$1,061	$650	$1 170	$1,086	$1,170
94	Bellwood	VA	Rockwell	NC	CSXT-PIRSB-NS	2819315	$3,431	$1,118	$2,012	$1,868	$2,012
95	Removed										
96	Danville	VA	Amphill	VA	NS PIRSB CSXT	3274110	$1,691	$726	$1,306	$1,212	$1,306
97	Edgemoor	DE	New Johnsonville	TN	NS-CINTI-CSXT	2816130	$9,594	$2,401	$4,321	$4,011	$4,321
98	Enid	OK	Edgemoor	DE	BNSF-LSTL-NS	2991315	$14,518	$3,642	$6,555	$6,085	$6,555
99	Loudon	TN	Grainger	NC	NS CHATT-CSXT	2818512	$1,490	$649	$1,168	$1,084	$1,168
100	Loudon	TN	Grainger	NC	NS CHATT-CSXT	2818512	$1,684	$498	$897	$833	$897
101	Miami Fort	OH	Dallas	GA	CSXT-CINTI-NS	2819315	$5 084	$1,777	$3,198	$2 969	$3,198
102	Miami Fort	OH	Gracewood	GA	CSXT-CHATT-NS	2819325	$9,761	$1,568	$2,823	$2,620	$2,823
103	Miami Fort	OH	McIntosh	AL	CSXT-CHATT-NS	2819340	$8 664	$1,102	$1,984	$1,841	$1,984
104	Removed										
105	Removed										
106	Miami Fort	OH	Pepper	VA	CSXT CINTI NS	2819345	$5,174	$2,376	$4,277	$3,970	$4,277
107	Natrium	WV	Belle	WV	CSXT-CINTI-NS	2812220	$8,532	$1,683	$3,029	$2,812	$3,029
108	Natrium	WV	Danville	VA	CSXT-LYNCH-NS	2812220	$2,696	$430	$775	$719	$775
109	New Johnsonville	TN	Chapman	PA	CSXT-CINTI-NS	2816130	$7 652	$2 382	$4,287	$3,980	$4,287
110	Removed										
111	New Johnsonville	TN	Morrow	GA	CSXT-CHATT-NS	2816130	$4,815	$760	$1,368	$1,270	$1,368
112	Niagara Falls	NY	Belle	WV	CSXT-CLMBO-NS	2812220	$3,269	$840	$1,512	$1,403	$1,512
113	Niagara Falls	NY	Edgemoor	DE	CSXT-BUFF-NS	2812815	$12,375	$1,639	$2,950	$2,738	$2,950
114	Niagara Falls	NY	Edgemoor	DE	CSXT-BUFF-NS	2812220	$4,444	$1,671	$3,009	$2,793	$3,009
115	Pascagoula	MS	Fort Mill	SC	CSXT-ATLA-NS	2815112	$5,350	$1,352	$2,133	$2,259	$2,433
116	Starke	FL	Huntsville	AL	CSXT-DCTUR-NS	1441325	$1,314	$324	$583	$541	$583
117	Starke	FL	Huntsville	AL	CSXT DCTUR-NS	1441325	$1,383	$517	$930	$864	$930

Comparison of NS Tariff Rates and
Maximum Rates Per Car for DuPont Movements - 3Q11

	Origin		Destination				3Q2011				
	City	ST	City	ST	Railroad(s)	Commodity	Tariff Rate 1/	Phase III Cost 1/	Jurisdictional Threshold 1/	SAC Rate 2/	STB Maximum Rate 3/
	(1)		(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)
118	Wurtland	KY	Fort Mill	SC	CSXI-CHLTE-NS	2819315	$1,061	$653	$1,176	$1,091	$1,176
119	Wurtland	KY	Mcintosh	AL	CSXI-BHAM-NS	2819315	$2,613	$884	$1,592	$1,478	$1 592
120	Belle	WV	Divine	IL	NS PINE-CN	2813980	$11,542	$1,701	$3,062	$2,843	$3,062
121	Belle	WV	Mapleton	IL	NS-LOGPI-UPW	2813934	$7,845	$1,504	$2,707	$2,513	$2,707
122	Burnside	LA	Gracewood	GA	CN-NEWOR-NS	2819325	$18,406	$2,182	$3 928	$3,646	$3,928
123	Lemont	IL	Edgemoor	DE	BNSI CHGO-NS	2991315	$9,864	$3,058	$5,505	$5,111	$5,505
124	New Johnsonville	TN	McDonough	GA	CSXI-CHATT-NS	2816130	$4,815	$1,068	$1,922	$1,784	$1,922
125	Charleston	TN	Woodstock	TN	NS-MEMPH CN	2812410	$9,265	$1,202	$2 164	$2,009	$2,164
126	Reybold	DE	Albuquerque	NM	NS STRTR-BNSF	2819315	$10,844	$2,608	$4,694	$4,358	$4,694
127	Reybold	DE	Baltimore	MD	NS BALBV-CSXT	2819315	$3,900	$454	$817	$759	$817
128	Reybold	DE	Blair	NE	NS CHGO UP	2819315	$10,008	$2,421	$4,358	$4,046	$4,358
129	Reybold	DE	Brewton	AL	NS BHAM CSXT	2819315	$10,476	$2,740	$4,932	$4 579	$4,932
130	Reybold	DE	Castle Hayne	NC	NS CHLTE-CSXI	2819315	$5,844	$1 900	$3,420	$3,174	$3,420
131	Reybold	DE	Clifton	AZ	NS KCITY-UP	2819315	$14,928	$3,482	$6,268	$5,818	$6,268
132	Reybold	DE	Corson	SD	NS CHGO BNSI	2819315	$10 008	$2,420	$4,357	$4,044	$4,357
133	Removed										
134	Reybold	DE	Ferguson	MS	NS MEMPHIS CN	2819315	$12,882	$3,164	$5,696	$5,288	$5 696
135	Reybold	DE	Hastings	NE	NS-CHGO BNSI	2819315	$10,008	$2,420	$4,357	$4,045	$4,357
136	Reybold	DE	Indianapolis	IN	NS CINTI CSXI	2819315	$8,880	$2,187	$3,937	$3,654	$3 937
137	Reybold	DE	Omaha	NE	NS-CHGO-UP	2819315	$10,008	$2,421	$4,358	$4 045	$4,358
138	Reybold	DE	Orange	TX	NS-LSTL-BNSF	2819315	$12,192	$2,890	$5,202	$4,829	$5,202
139	Reybold	DE	Phoenix	AZ	NS STRTR BNSF	2819315	$10,844	$2,607	$4,693	$4,357	$4 693
140	Reybold	DE	Sioux City	IA	NS CHGO-BNSI	2819315	$10,008	$2 420	$4,357	$4,045	$4 357
141	Reybold	DE	Toledo	OH	NS-TOLHD-CSXI	2819315	$7,200	$3,036	$5,464	$5,072	$5,464
142	Reybold	DE	Washington	WV	NS HAGTN CSXI	2819315	$6,444	$726	$1,307	$1,214	$1 307

1/ From Rebuttal Exhibit II-A-10
2/ MMM Ratio from Rebuttal Exhibit III-H-2 x Column (6)
3/ Greater of Column (7) or Column (8)

TAB 13

Comparison of NS Tariff Rates and
Maximum Rates Per Car for DuPont Movements - 4Q11

	Origin City (1)	ST	Destination City (2)	ST	Railroad(s) (3)	Commodity (4)	4Q2011 Tariff Rate 1/ (5)	Phase III Cost 1/ (6)	4Q2011 Jurisdictional Threshold 1/ (7)	SAC Rate 2/ (8)	STB Maximum Rate 3/ (9)
Exhibit A - Local Moves											
1.	Removed										
2	Bayway	NJ	Waynesville	NC	NS	2819315	$12 855	$2,615	$4,708	$4,370	$4,708
3.	Belle	WV	Danville	IL	NS	2813980	$11,836	$1,913	$3,444	$3,197	$3,444
4	Removed										
5	Removed										
6	Removed										
7	Removed										
8	Removed										
9	Belle	WV	Wyandotte	MI	NS	2813934	$8,814	$1,119	$2,553	$2,370	$2,553
10	Charleston	IN	Edgemoor	DI	NS	2812815	$18,562	$2,590	$4,663	$4,328	$4,663
11	Edgemoor	DE	Chicago	IL	NS	2816130	$9,844	$2,592	$4,665	$4,331	$4,665
12	Edgemoor	DE	Chillicothe	OH	NS	2816130	$6,510	$2,524	$4,543	$4,218	$4,543
13	Edgemoor	DE	Mahrt	AL	NS	2816130	$12,376	$3,336	$6 004	$5,574	$6,004
14	Edgemoor	DE	Riverwood Intl	GA	NS	2816130	$6 270	$3 026	$5 447	$5,056	$5,447
15	Edgemoor	DE	Wabash	IN	NS	2816130	$6,627	$2 653	$4,776	$4,434	$4,776
16	Lemoyne	AL	Giant	SC	NS	4810560	$5,136	$2,733	$4,919	$4,566	$4,919
17.	Loudon	TN	Brarhwaite	LA	NS	2818512	$4,125	$2,230	$4,013	$3,726	$4,013
18	Louisville	KY	Decatur	IL	NS	2819450	$4,596	$1,422	$2,560	$2,376	$2,560
19	Louisville	KY	Lafayette	IN	NS	2819450	$6 139	$1 780	$3,204	$2,975	$3,204
20	Removed										
21	Removed										
22	McIntosh	AL	Lemoyne	AL	NS	2812220	$1,605	$563	$1,013	$941	$1,013
23	Reybold	DE	Detroit	MI	NS	2819315	$7,812	$2,074	$3,733	$3,465	$3,733
24	Reybold	DE	Fort Mill	SC	NS	2819315	$6,108	$2,079	$3,742	$3,474	$3,742
25	Reybold	DE	Morrisville	PA	NS	2819315	$3,614	$653	$1,175	$1,091	$1,175
Exhibit B - Joint Moves											
1	Belle	WV	Anaheim	CA	NS CHGO UP	2813980	$12,100	$1,789	$3,219	$2,989	$3,219
2	Belle	WV	Bayport	TX	NS-LSTL-UP	2818620	$11 812	$2,250	$4 050	$3,760	$4,050
3.	Removed										
4	Belle	WV	Brownsville	TX	NS-LSTL-UP	2818221	$11,812	$2,225	$4,004	$3,717	$4,004
5	Belle	WV	Burley	ID	NS-CHGO-UP	2813934	$12 100	$1,789	$3,220	$2,989	$3,220
6.	Belle	WV	Cadet	MO	NS-KCITY-UP	2813934	$19 539	$2,786	$5,014	$4,655	$5,014
7	Removed										
8	Belle	WV	Channelview	TX	NS-LSTL-UP	2818130	$11,812	$2,059	$3,706	$3,440	$3,706
9	Belle	WV	City of Commerce	CA	NS STRTR BNSF	2818221	$10,242	$1,941	$3,495	$3,244	$3,495
10	Belle	WV	Conroe	TX	NS-LSTL-BNSF	2813934	$14,136	$2,218	$3,992	$3 706	$3,992
11	Belle	WV	Corsicana	TX	NS-LSTL-UP	2813934	$14 136	$2,106	$3,792	$3,520	$3,792
12	Removed										
13	Belle	WV	East Billings	MT	NS-CHGO-BNSF	2818130	$8 533	$1,765	$3,178	$2,950	$3,178
14	Belle	WV	Ethyl	AR	NS-LSTL-UP-MCNPI-LNW	2813934	$14,136	$2 125	$3,825	$3,550	$3,825
15.	Belle	WV	Finley	WA	NS CHGO BNSF	2813934	$12,100	$1,789	$3,221	$2,990	$3,221
16.	Removed										
17	Belle	WV	Freeport	TX	NS LSTL-UP	2818130	$11,812	$1,957	$3,523	$3,270	$3,523
18	Belle	WV	Garyville	LA	NS-NEWOR CN	2813934	$22,732	$3,219	$5,794	$5,379	$5,794
19	Belle	WV	Geismar	LA	NS NEWOR-CN	2813934	$22 732	$2,938	$5,289	$4,910	$5,289
20	Belle	WV	Janesville	WI	NS-CHGO UP	2818131	$12,100	$1,751	$3,152	$2,926	$3,152
21	Belle	WV	Laredo	TX	NS-LSTL-UP	2818221	$11,812	$2,225	$4,004	$3,717	$4,004
22	Belle	WV	Laredo	TX	NS-LSTL-UP	2818131	$14 136	$2,225	$4,004	$3,717	$4,004
23	Belle	WV	Lorenzo	IL	NS CHGO-BNSF	2813980	$12 100	$1,780	$3,203	$2,974	$3,203
24	Belle	WV	Los Angeles	CA	NS STRTR BNSF	2813934	$13,450	$1,994	$3,589	$3,331	$3,589
25	Belle	WV	Los Angeles	CA	NS-CHGO UP	2818170	$8,533	$1,776	$3,196	$2,967	$3,196
26.	Removed										
27	Belle	WV	Millsdale	IL	NS CHGO CN	2818131	$12,100	$1,759	$3,166	$2,939	$3 166
28	Removed										
29	Belle	WV	Saint Paul	MN	NS CHGO BNSF	2818221	$8,533	$1,951	$3,512	$3,260	$3 512
30	Belle	WV	San Dimas	CA	NS CHGO-UP	2813980	$12,100	$1,913	$3,443	$3,196	$3,443
31	Removed										
32	Belle	WV	St Gabriel	LA	NS-NEWOR CN	2813934	$22,732	$3,187	$5,736	$5,325	$5,736
33	Belle	WV	St Joseph	MO	NS-KCITY-UP	2818130	$13,535	$2,789	$5 020	$4,660	$5,020
34	Removed										
35	Belle	WV	Strang	TX	NS-LSTL-UP	2818221	$11,812	$2,312	$4,162	$3,864	$4,162
36	Belle	WV	Strang	TX	NS LSTL-BNSF	2813934	$14,136	$1,897	$3,415	$3 170	$3,415
37	Belle	WV	Strang	TX	NS LSTL-UP	2819183	$5,139	$2,028	$3,650	$3,388	$3,650
38.	Removed										
39	Belle	WV	Texas City	TX	NS-LSTL-UP	2813934	$14,136	$2,124	$3,823	$3 549	$3,823
40	Belle	WV	Verona	MO	NS LSTL-BNSF	2813934	$14,136	$2,204	$3 968	$3,683	$3 968
41	Belle	WV	West Memphis	AR	NS-KCITY-UP	2813934	$19,539	$2,774	$4,994	$4,636	$4,994
42.	Belle	WV	Winfield Spur	LA	NS-MERID-KCS	2813980	$19,888	$2,686	$4,835	$4,488	$4,835
43.	Belle	WV	Wichita	KS	NS LSTL-BNSF	2813934	$14,136	$2,249	$4,048	$3,758	$4,048
44.	Bloomington	TX	Greenville	SC	UP-NEWOR-NS	2821142	$6,113	$1,938	$3 489	$3,239	$3,489
45	Bloomington	TX	Washington, Warren	NJ	UP-LSTL-NS	2821112	$9,644	$2,699	$4,858	$4 510	$4,858

Comparison of NS Tariff Rates and
Maximum Rates Per Car for DuPont Movements - 4Q11

	Origin		Destination					4Q2011				
	City	ST	City	ST	Railroad(s)	Commodity	Tariff Rate 1/	Phase III Cost 1/	Jurisdictional Threshold 1/	SAC Rate 2/	STB Maximum Rate 3/
	(1)		(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)
46	Removed										
47	Charleston, Bradley	IN	Woodstock	TN	NS-MEMPH-CN	2812220	$4,170	$1,210	$2,177	$2,021	$2,177
48	Cresap	WV	Edgemoor	DE	CSXT-HAGTN-NS	2991315	$3,591	$750	$1,350	$1,253	$1,350
49	Dowling	TX	Fort Mill	SC	KCS-MERID-NS	2815112	$7,690	$2,025	$3,645	$3,384	$3,645
50	Edgemoor	DE	Garland	TX	NS-MERID-KCS	2816130	$9,388	$3,259	$5,866	$5,445	$5,866
51	Edgemoor	DE	Gross	MI	NS-CHGO-CN	2816130	$9,844	$2,489	$4,481	$4,160	$4,481
52	Edgemoor	DE	Laredo	TX	NS-ESTL-UP	2816130	$10,991	$2,881	$5,187	$4,815	$5,187
53	Edgemoor	DE	Madawaska	ME	NS-ROUPT-CN	2816130	$5,029	$1,486	$2,675	$2,484	$2,675
54	Edgemoor	DE	Pasadena	TX	NS-ESTL-UP	2819971	$24,453	$2,821	$5,078	$4,714	$5,078
55	Edgemoor	DE	Port Huron	MI	NS-BUFF-CN	2816130	$7,404	$1,937	$3,487	$3,237	$3,487
56	Edgemoor	DE	Portland	ME	NS-MCV-PAS-AYERM-ST	2816130	$5,029	$1,483	$2,670	$2,479	$2,670
57	Edgemoor	DE	Portland	OR	NS-CHGO-BNSF	2816130	$9,844	$2,512	$4,522	$4,198	$4,522
58	Edgemoor	DE	Quinnesec	MI	NS-CHGO-CN	2816130	$9,844	$2,487	$4,477	$4,156	$4,477
59	Edgemoor	DE	Riley	ME	NS-MCV-PAS-AYERM-ST	2816130	$5,029	$1,488	$2,678	$2,486	$2,678
60	Edgemoor	DE	Rumford	ME	NS-MCV-PAS-AYERM-ST	2816130	$5,029	$1,483	$2,669	$2,478	$2,669
61	Removed										
62	Edgemoor	DE	Shawmut	ME	NS-MCV-PAS-AYERM-ST	2816130	$5,029	$1,485	$2,672	$2,481	$2,672
63	Edgemoor	DE	Snoboy	CA	NS-CHGO-UP	2816130	$9,844	$2,517	$4,531	$4,206	$4,531
64	Edgemoor	DE	Snoboy	CA	NS-STRTR-BNSF	2816130	$10,944	$2,709	$4,875	$4,526	$4,875
65	Edgemoor	DE	St Paul	MN	NS-CHGO-UP	2816130	$9,844	$2,516	$4,529	$4,204	$4,529
66	Removed										
67	Edgemoor	DE	West Monroe	LA	NS-MERID-KCS	2816130	$9,388	$3,269	$5,885	$5,463	$5,885
68	Edgemoor	DE	Wheeling	IL	NS-CHGO-CN	2816130	$9,844	$2,534	$4,560	$4,234	$4,560
69	Enid	OK	Edgemoor	DE	BNSF-ESTL-NS	2991315	$12,624	$2,903	$5,225	$4,851	$5,225
70	Removed										
71	Gregory	TX	Dragon	MS	UP-NEWOR-NS	2813984	$2,486	$575	$1,035	$960	$1,035
72	Removed										
73	Gregory	TX	Royce	NJ	UP-ESTL-NS	2813984	$21,912	$3,061	$5,509	$5,114	$5,509
74	Removed										
75	Lemont	IL	Edgemoor	DE	BNSF-CHGO-NS	2991315	$8,384	$2,383	$4,289	$3,981	$4,289
76	Lemoyne	AL	Artesia	MS	NS-MERID-KCS	1810560	$8,983	$1,415	$2,547	$2,365	$2,547
77	McIntosh	AL	Burnside	LA	NS-MOBIL-CN	2819330	$2,400	$359	$647	$600	$647
78	McIntosh	AL	Delisle	MS	NS-MOBIL-CN-HATBG-KCS	2812815	$2,900	$364	$655	$608	$655
79	McIntosh	AL	Delisle	MS	NS-MOBIL-CN-HATBG-KCS	2812220	$2,400	$370	$666	$618	$666
80	McIntosh	AL	Orange	TX	NS-NEWOR-UP	2812220	$9,214	$1,803	$3,245	$3,013	$3,245
81	McIntosh	AL	Woodstock	TN	NS-MOBIL-CN	2812220	$2,400	$370	$665	$618	$665
82	Orange	TX	Greenville	SC	UP-NEWOR-NS	2821142	$6,113	$2,365	$4,257	$3,952	$4,257
83	Orange	TX	Washington Warren	NJ	UP-ESTL-NS	2821142	$9,644	$2,521	$4,538	$4,213	$4,538
84	Pascagoula	MS	Fort Mill	SC	MSE-MOBIL-NS	2815112	$8,928	$2,357	$4,243	$3,939	$4,243
85	Pascagoula	MS	Lemoyne	AL	MSE-MOBIL-NS	2815112	$2,758	$315	$567	$526	$567
86	Strang	TX	Lemoyne	AL	UP-NEWOR-NS	2812350	$6,899	$2,018	$3,633	$3,372	$3,633
87	Beauharnois	PQ	Edgemoor	DE	CSXT-BUFF-NS	2812815	$12,375	$1,619	$2,914	$2,706	$2,914
88	Removed										
89	Belle	WV	Gainesville	GA	NS-CINTI-CSXT	2813980	$10,487	$1,641	$2,954	$2,742	$2,954
90	Belle	WV	Port Bienville	MS	NS-ATLA-CSXT-ANSLE-PBVR	2813934	$12,839	$2,763	$4,974	$4,618	$4,974
91	Belle	WV	Theodore	AL	NS-CINTI-CSXT	2813934	$10,487	$1,630	$2,935	$2,725	$2,935
92	Bellwood	VA	Dallas	GA	CSXT-PIRSB-NS	2819315	$8,926	$2,611	$4,700	$4,361	$4,700
93	Bellwood	VA	Fort Mill	SC	CSXT-CHLTE-NS	2819315	$1,061	$645	$1,161	$1,078	$1,161
94	Bellwood	VA	Rockwell	NC	CSXT-PIRSB-NS	2819315	$3,431	$1,110	$1,997	$1,854	$1,997
95	Removed										
96	Danville	VA	Ampthill	VA	NS-PIRSB-CSXT	3274110	$1,910	$720	$1,296	$1,204	$1,296
97	Edgemoor	DE	New Johnsonville	TN	NS-CINTI-CSXT	2816130	$9,591	$2,383	$4,289	$3,982	$4,289
98	Enid	OK	Edgemoor	DE	BNSF-ESTL-NS	2991315	$14,518	$3,615	$6,507	$6,041	$6,507
99	Loudon	TN	Grainger	NC	NS-CHATT-CSXT	2818512	$1,490	$644	$1,159	$1,076	$1,159
100	Loudon	TN	Grainger	NC	NS-CHATT-CSXT	2818512	$1,684	$495	$890	$827	$890
101	Miami Fort	OH	Dallas	GA	CSXT-CINTI-NS	2819315	$5,084	$1,764	$3,174	$2,947	$3,174
102	Miami Fort	OH	Gracewood	GA	CSXT-CHATT-NS	2819325	$9,761	$1,557	$2,802	$2,601	$2,802
103	Miami Fort	OH	McIntosh	AL	CSXT-CHATT-NS	2819340	$8,664	$1,094	$1,969	$1,828	$1,969
104	Removed										
105	Removed										
106	Miami Fort	OH	Pepper	VA	CSXT-CINTI-NS	2819345	$5,174	$2,359	$4,246	$3,941	$4,246
107	Natrium	WV	Belle	WV	CSXT-CINTI-NS	2812220	$8,532	$1,671	$3,007	$2,792	$3,007
108	Natrium	WV	Danville	VA	CSXT-LYNCH-NS	2812220	$2,696	$427	$769	$714	$769
109	New Johnsonville	TN	Chapman	PA	CSXT-CINTI-NS	2816130	$7,652	$2,364	$4,256	$3,951	$4,256
110	Removed										
111	New Johnsonville	TN	Morrow	GA	CSXT-CHATT-NS	2816130	$4,815	$755	$1,358	$1,261	$1,358
112	Niagara Falls	NY	Belle	WV	CSXT-CLMBO-NS	2812220	$3,269	$834	$1,501	$1,393	$1,501
113	Niagara Falls	NY	Edgemoor	DE	CSXT-BUFF-NS	2812815	$12,375	$1,627	$2,928	$2,718	$2,928
114	Niagara Falls	NY	Edgemoor	DE	CSXT-BUFF-NS	2812220	$4,444	$1,659	$2,987	$2,772	$2,987

Comparison of NS Tariff Rates and
Maximum Rates Per Car for DuPont Movements - 4Q11

	Origin City (1)	ST	Destination City (2)	ST	Railroad(s) (3)	Commodity (4)	4Q2011 Tariff Rate 1/ (5)	Phase III Cost 1/ (6)	Jurisdictional Threshold 1/ (7)	SAC Rate 2/ (8)	STB Maximum Rate 3/ (9)
115	Pascagoula	MS	Fort Mill	SC	CSXT-ATLA-NS	2815112	$5,350	$1,342	$2,415	$2,242	$2,415
116	Starke	FL	Huntsville	AL	CSXT-DCTUR-NS	1441325	$1,910	$422	$579	$538	$579
117	Starke	FL	Huntsville	AL	CSXT-DCTUR-NS	1441325	$1,910	$513	$923	$857	$923
118	Wurtland	KY	Fort Mill	SC	CSXT CHLTE-NS	2819315	$1,061	$648	$1,167	$1,083	$1,167
119	Wurtland	KY	McIntosh	AL	CSXT-BHAM-NS	2819315	$2,633	$878	$1,580	$1,467	$1,580
120	Belle	WV	Divine	IL	NS-PINE-CN	2819980	$11,542	$1,689	$3,040	$2,822	$3,040
121	Belle	WV	Mapleton	IL	NS-LOGPT-UPW	2819934	$7,845	$1,493	$2,688	$2,495	$2,688
122	Burnside	LA	Gracewood	GA	CN NEWOR-NS	2819325	$18,406	$2,166	$3,899	$3,620	$3,899
123	Lemont	IL	Edgemoor	DE	BNSF-CHGO-NS	2991315	$9,864	$3 036	$5,465	$5 073	$5,465
124	New Johnsonville	TN	McDonough	GA	CSXT-CHATT-NS	2816130	$4,815	$1,060	$1,908	$1,771	$1,908
125	Charleston	TN	Woodstock	IN	NS-MEMPH-CN	2812410	$9,265	$1,194	$2,148	$1,994	$2,148
126.	Reybold	DE	Albuquerque	NM	NS-STRTR-BNSF	2819315	$10,844	$2,589	$4,660	$4,326	$4,660
127.	Reybold	DE	Baltimore	MD	NS BALBV-CSXT	2819315	$3,900	$451	$811	$753	$811
128	Reybold	DE	Blair	NE	NS CHGO-UP	2819315	$10,008	$2,404	$4,327	$4,017	$4,327
129	Reybold	DE	Brewton	AL	NS BHAM-CSXT	2819315	$10,476	$2,720	$4,896	$4 545	$4,896
130	Reybold	DE	Castle Hayne	NC	NS CHLTE-CSXT	2819315	$5,844	$1,886	$3,395	$3,151	$3,395
131	Reybold	DE	Clifton	AZ	NS-KCITY-UP	2819315	$14,928	$3,456	$6,222	$5 776	$6,222
132	Reybold	DE	Conon	SD	NS CHGO-BNSF	2819315	$10,008	$2,403	$4,325	$4,015	$4,325
133	Removed										
134	Reybold	DE	Ferguson	MS	NS-MEMPHIS CN	2819315	$12 882	$3,141	$5,654	$5,249	$5,654
135	Reybold	DE	Hastings	NE	NS CHGO BNSF	2819315	$10,008	$2,403	$4,325	$4 015	$4,325
136	Reybold	DE	Indianapolis	IN	NS-CINTI CSXT	2819315	$8,880	$2,171	$3,908	$3,628	$3,908
137	Reybold	DE	Omaha	NE	NS CHGO UP	2819315	$10,008	$2,403	$4,326	$4,016	$4,326
138	Reybold	DE	Orange	TX	NS-LSTL-BNSF	2819315	$12,192	$2,869	$5,164	$4,794	$5,164
139.	Reybold	DE	Phoenix	AZ	NS-STRTR-BNSF	2819315	$10,844	$2 588	$4,659	$4 325	$4 659
140	Reybold	DE	Sioux City	IA	NS CHGO-BNSF	2819315	$10,008	$2 403	$4,325	$4 015	$4,325
141	Reybold	DE	Toledo	OH	NS-TOLED-CSXT	2819315	$7,200	$3 013	$5 424	$5,035	$5 424
142.	Reybold	DE	Washington	WV	NS-HAGTN-CSXT	2819315	$6,444	$721	$1,298	$1,205	$1,298

1/ From Rebuttal Exhibit II-A-11
2/ MMM Ratio from Rebuttal Exhibit III-H-2 x Column (6)
3/ Greater of Column (7) or Column (8)

TAB 14

Comparison of NS Tariff Rates and Maximum Rates Per Car for DuPont Movements - 1Q12

	Origin City (1)	ST	Destination City (2)	ST	Railroad(s) (3)	Commodity (4)	1Q2012 Tariff Rate 1/ (5)	Phase III Cost 1/ (6)	Jurisdictional Threshold 1/ (7)	SAC Rate 2/ (8)	STB Maximum Rate 3/ (9)
Exhibit A - Local Moves											
1	Removed										
2.	Bayway	NJ	Waynesville	NC	NS	2819315	$12,855	$2 626	$4,727	$3,984	$4,727
3	Belle	WV	Danville	IL	NS	2813980	$11,836	$1 921	$3,458	$2 915	$3,458
4.	Removed										
5	Removed										
6	Removed										
7	Removed										
8	Removed										
9	Belle	WV	Wyandotte	MI	NS	2813934	$8,814	$1,424	$2,564	$2 161	$2,564
10	Charleston	IN	Edgemoor	DE	NS	2812815	$18,562	$2,601	$4,682	$3 946	$4,682
11	Edgemoor	DE	Chicago	IL	NS	2816130	$9,844	$2,603	$4,685	$3,948	$4,685
12	Edgemoor	DE	Chillicothe	OH	NS	2816130	$6,510	$2,531	$4,562	$3 845	$4,562
13	Edgemoor	DE	Mabrt	AL	NS	2816130	$12,376	$3 349	$6,029	$5,081	$6,029
14	Edgemoor	DE	Riverwood Intl	GA	NS	2816130	$6,270	$3,038	$5,469	$4 609	$5,469
15.	Edgemoor	DE	Wabash	IN	NS	2816130	$6,627	$2,664	$4,796	$4,042	$4,796
16.	Lemoyne	AL	Giant	SC	NS	4810560	$5,136	$2 744	$4,939	$4,162	$4,939
17.	Loudon	TN	Braithwaite	LA	NS	2818512	$4 125	$2 279	$4,030	$3,396	$4 030
18	Louisville	KY	Decatur	IL	NS	2819450	$4,596	$1 428	$2,570	$2 166	$2,570
19	Louisville	KY	Lafayette	IN	NS	2819450	$6,139	$1 787	$3,217	$2,711	$3,217
20	Removed										
21	Removed										
22.	McIntosh	AL	Lemoyne	AL	NS	2812220	$1,605	$565	$1,017	$857	$1 017
23	Reybold	DE	Detroit	MI	NS	2819315	$7,812	$2,082	$3,748	$3,159	$3 748
24	Reybold	DE	Fort Mill	SC	NS	2819315	$6,108	$2,087	$3,757	$3 167	$3,757
25.	Reybold	DE	Morrisville	PA	NS	2819315	$3,614	$655	$1,180	$994	$1,180
Exhibit B - Joint Moves											
1	Belle	WV	Anaheim	CA	NS CHGO UP	2813980	$12,100	$1,796	$3,233	$2,724	$3,233
2	Belle	WV	Bayport	TX	NS-ESTL-UP	2818620	$11,812	$2,259	$4,066	$3,427	$4,066
3	Removed										
4	Belle	WV	Brownsville	TX	NS-ESTL-UP	2818221	$11,812	$2,234	$4,021	$3 389	$4,021
5	Belle	WV	Burley	ID	NS CHGO-UP	2813934	$12,100	$1,796	$3,233	$2 725	$3,233
6	Belle	WV	Cadet	MO	NS KCITY-UP	2813934	$19,539	$2 797	$5,035	$4,243	$5,035
7	Removed										
8	Belle	WV	Channelview	TX	NS-ESTL-UP	2818130	$11,812	$2 067	$3,721	$3,136	$3,721
9	Belle	WV	City of Commerce	CA	NS-STRTR-BNSF	2818221	$10,242	$1,949	$3,509	$2,957	$3,509
10	Belle	WV	Conroe	TX	NS-ESTL-BNSF	2813934	$14,136	$2,227	$4,009	$3,378	$4,009
11.	Belle	WV	Corsicana	TX	NS-ESTL-UP	2813934	$14,136	$2 115	$3,807	$3,209	$3,807
12.	Removed										
13	Belle	WV	East Billings	MT	NS CHGO BNSF	2818130	$8,513	$1,773	$3,191	$2,689	$3,191
14	Belle	WV	Ethyl	AR	NS-ESTL-UP-MCNLI-LNW	2813934	$14,136	$2,133	$3,840	$3 236	$3,840
15	Belle	WV	Finley	WA	NS CHGO BNSF	2813934	$12,100	$1,797	$3,234	$2 726	$3,234
16	Removed										
17	Belle	WV	Freeport	TX	NS ESTL-UP	2818130	$11,812	$1 965	$3,537	$2 981	$3,537
18	Belle	WV	Garyville	LA	NS-NEWOR CN	2813934	$22,732	$3,232	$5,817	$4,903	$5 817
19	Belle	WV	Geismar	LA	NS-NEWOR-CN	2813934	$22,732	$2,950	$5,311	$4,476	$5,311
20	Belle	WV	Janesville	WI	NS-CHGO UP	2818131	$12,100	$1,758	$3,165	$2,667	$3,165
21	Belle	WV	Laredo	TX	NS-ESTL-UP	2818221	$11,812	$2,234	$4,021	$3,389	$4,021
22	Belle	WV	Laredo	TX	NS-ESTL-UP	2818131	$14 136	$2,234	$4,021	$3 389	$4,021
23	Belle	WV	Lorenzo	IL	NS CHGO BNSF	2813980	$12,100	$1,787	$3,217	$2,711	$3,217
24	Belle	WV	Los Angeles	CA	NS STRTR-BNSF	2813934	$13,450	$2,002	$3,603	$3,037	$3,603
25	Belle	WV	Los Angeles	CA	NS CHGO UP	2818130	$8,513	$1,783	$3,210	$2,705	$3,210
26	Removed										
27.	Belle	WV	Millsdale	IL	NS CHGO CN	2818131	$12,100	$1,766	$3,179	$2,680	$3,179
28.	Removed										
29	Belle	WV	Saint Paul	MN	NS-CHGO BNSF	2818221	$8,513	$1 959	$3,526	$2 972	$3,526
30	Belle	WV	San Dimas	CA	NS CHGO-UP	2813980	$12,100	$1 921	$3,457	$2 911	$3,457
31.	Removed										
32	Belle	WV	St Gabriel	LA	NS-NEWOR CN	2813934	$22,732	$3,200	$5,760	$4,854	$5,760
33	Belle	WV	St Joseph	MO	NS KCITY-UP	2818130	$13,535	$2,800	$5,040	$4,248	$5,040
34	Removed										
35	Belle	WV	Strang	TX	NS-ESTL-UP	2818221	$11,812	$2 322	$4,179	$3 522	$4,179
36	Belle	WV	Strang	TX	NS ESTL-BNSF	2813934	$14,136	$1 905	$3,429	$2,890	$3,429
37	Belle	WV	Strang	TX	NS-ESTL-UP	2819183	$5,139	$2,036	$3,665	$3,089	$3 665
38	Removed										
39.	Belle	WV	Texas City	TX	NS-ESTL-UP	2813934	$14,136	$2,132	$3,838	$3,235	$3,838
40	Belle	WV	Verona	MO	NS-ESTL-BNSF	2813934	$14,136	$2,213	$3,984	$3,358	$3,984
41	Belle	WV	West Memphis	AR	NS-KCITY-UP	2813934	$19,539	$2,786	$5,014	$4,226	$5,014
42	Belle	WV	Winford Spur	LA	NS MERID KCS	2813980	$19,888	$2,697	$4,855	$4,091	$4,855
43.	Belle	WV	Wichita	KS	NS ESTL-BNSF	2813934	$14,136	$2,258	$4,065	$3,426	$4,065
44	Bloomington	IN	Greenville	SC	UP-NEWOR-NS	2821142	$6,113	$1 946	$3,503	$2,952	$3,503
45	Bloomington	IN	Washington Warren	NJ	UP-ESTL-NS	2821142	$9,644	$2,710	$4,878	$4,111	$4,878

Comparison of NS Tariff Rates and
Maximum Rates Per Car for DuPont Movements - 1Q12

	Origin City (1)	ST	Destination City (2)	ST	Railroad(s) (3)	Commodity (4)	1Q2012 Tariff Rate 1/ (5)	Phase III Cost 1/ (6)	Jurisdictional Threshold 1/ (7)	SAC Rate 2/ (8)	STB Maximum Rate 3/ (9)
46.	Removed										
47	Charleston, Bradley	IN	Woodstock	IN	NS-MEMPH CN	2812220	$4,170	$1,214	$2 186	$1,842	$2,186
48	Cresap	WV	Edgemoor	DE	CSXI-HAGTN-NS	2991315	$3,591	$753	$1,356	$1,142	$1,356
49	Dowling	TX	Fort Mill	SC	KCS-MERID-NS	2815112	$7,690	$2,033	$3,660	$3,085	$3,660
50	Edgemoor	DE	Garland	TX	NS-MERID-KCS	2816130	$9,388	$3,272	$5,890	$4,964	$5,890
51.	Edgemoor	DE	Gross	MI	NS-CHGO CN	2816130	$9,844	$2,500	$4,499	$3,792	$4,499
52	Edgemoor	DE	Laredo	TX	NS LSTL-UP	2816130	$10 991	$2,893	$5,208	$4,389	$5,208
53	Edgemoor	DE	Madawaska	ME	NS ROUPT CN	2816130	$5 029	$1,492	$2,686	$2,264	$2,686
54	Edgemoor	DE	Pasadena	TX	NS LSTL-UP	2819971	$24 453	$2,832	$5,098	$4,297	$5,098
55	Edgemoor	DE	Port Huron	MI	NS-BUFF-CN	2816130	$7,404	$1,945	$3 501	$2 951	$3,501
56	Edgemoor	DE	Portland	ME	NS-MCV-PAS-AYLRM-ST	2816130	$5 029	$1,490	$2,681	$2,260	$2,681
57	*Edgemoor*	*DE*	*Portland*	*OR*	*NS-CHGO BNSF*	*2816130*	*$9,844*	*$2,523*	*$4,541*	*$3,827*	*$4,541*
58	Edgemoor	DE	Quinnesec	MI	NS-CHGO-CN	2816130	$9,844	$2,498	$4,496	$3,789	$4,496
59	Edgemoor	DE	Raleys	ME	NS-MCV-PAS-AYLRM-ST	2816130	$5,029	$1,494	$2,689	$2,266	$2,689
60	Edgemoor	DE	Rumford	ME	NS-MCV-PAS-AYLRM ST	2816130	$5,029	$1 189	$2,680	$2,259	$2,680
61	Removed										
62	Edgemoor	DE	Shawmut	ME	NS-MCV-PAS-AYLRM-ST	2816130	$5 029	$1 191	$2,683	$2,261	$2,683
63	Edgemoor	DE	Snoboy	CA	NS-CHGO-UP	2816130	$9,844	$2,527	$4,549	$3,834	$4,549
64	Edgemoor	DE	Snoboy	CA	NS-STRTR-BNSF	2816130	$10,944	$2,720	$4,895	$4,126	$4,895
65.	Edgemoor	DE	St Paul	MN	NS-CHGO UP	2816130	$9,844	$2,526	$4,547	$3,832	$4,547
66	Removed										
67.	Edgemoor	DE	West Monroe	LA	NS-MERID KCS	2816130	$9,388	$3,283	$5,909	$4,980	$5,909
68	Edgemoor	DE	Wheeling	IL	NS CHGO-CN	2816130	$9,844	$2,544	$4,579	$3,859	$4,579
69	Enid	OK	Edgemoor	DE	BNSI-LSTL-NS	2991315	$12,624	$2 915	$5,247	$4,422	$5,247
70	Removed										
71	Gregory	TX	Dragon	MS	UP-NLWOR-NS	2813984	$2,486	$577	$1,039	$875	$1,039
72	Removed										
73	Gregory	TX	Royce	NJ	UP-LSTL-NS	2813984	$21,912	$3,073	$5,531	$4,662	$5,531
74	Removed										
75	Lemont	IL	Edgemoor	DE	BNSI-CHGO-NS	2991315	$8,384	$2,392	$4,306	$3,629	$4,306
76	Lemoyne	AL	Artesia	MS	NS-MERID-KCS	4810560	$8,983	$1,421	$2,558	$2,156	$2,558
77	McIntosh	AL	Burnside	LA	NS-MOBIL-CN	2819310	$2,400	$361	$649	$547	$649
78	McIntosh	AL	Delisle	MS	NS-MOBIL-CN-HATBG-KCS	2812815	$2,900	$365	$657	$554	$657
79	McIntosh	AL	Delisle	MS	NS-MOBIL-CN-HATBG-KCS	2812220	$2,400	$372	$669	$564	$669
80	McIntosh	AL	Orange	TX	NS NLWOR-UP	2812220	$9,214	$1,810	$3,259	$2,746	$3,259
81	McIntosh	AL	Woodstock	IN	NS MOBIL-CN	2812220	$2,400	$371	$668	$563	$668
82.	Orange	TX	Greenville	SC	UP-NLWOR-NS	2821142	$6,113	$2,375	$4,274	$3,602	$4 274
83	Orange	TX	Washington Warren	NJ	UP-LSTL-NS	2821142	$9,644	$2,531	$4,556	$3,840	$4,556
84	Pascagoula	MS	Fort Mill	SC	MSE-MOBIL-NS	2815112	$8,928	$2,367	$4,261	$3,591	$4,261
85	Pascagoula	MS	Lemoyne	AL	MSE-MOBIL-NS	2815112	$2,758	$316	$569	$480	$569
86.	Strang	TX	Lemoyne	AL	UP-NEWOR-NS	2812350	$6,899	$2,026	$3,648	$3,074	$3,648
87	Beauharnois	PQ	Edgemoor	DE	CSXI-BUFF-NS	2812815	$12,375	$1 626	$2,926	$2,466	$2,926
88	Removed										
89	Belle	WV	Gainesville	GA	NS CINTI-CSXT	2813980	$10,487	$1,648	$2,966	$2,500	$2,966
90	Belle	WV	Port Bienville	MS	NS-ATLA-CSXI-ANSLE-PBVR	2813934	$12,839	$2,775	$4,994	$4,209	$4,994
91	Belle	WV	Theodore	AL	NS CINTI CSXI	2813934	$10,487	$1,637	$2,947	$2,484	$2,947
92	Bellwood	VA	Dallas	GA	CSXI-PTRSB NS	2819315	$8,926	$2,622	$4,719	$3,977	$4,719
93	Bellwood	VA	Fort Mill	SC	CSXT-CHLTE-NS	2819315	$1 061	$648	$1,166	$983	$1 166
94	Bellwood	VA	Rockwell	NC	CSXT-PTRSB-NS	2819315	$3,431	$1,114	$2,006	$1,690	$2,006
95	Removed										
96	Danville	VA	Ampthill	VA	NS-PTRSB-CSXI	3274110	$1,910	$723	$1,302	$1,097	$1,302
97	Edgemoor	DE	New Johnsonville	TN	NS CINTI CSXI	2816130	$9,594	$2,393	$4,307	$3,630	$4,307
98	Enid	OK	Edgemoor	DE	BNSF-LSTL-NS	2991315	$14,518	$3,630	$6,534	$5,506	$6,534
99	Loudon	TN	Grainger	NC	NS CHATT CSXI	2818512	$1,490	$647	$1,164	$981	$1 164
100.	Loudon	TN	Grainger	NC	NS CHATT CSXT	2818512	$1,684	$497	$894	$754	$894
101	Miami Fort	OH	Dallas	GA	CSXI CINTI-NS	2819315	$5,084	$1,771	$3,187	$2,686	$3,187
102.	Miami Fort	OH	Gracewood	GA	CSXI-CHATT-NS	2819325	$9,761	$1,563	$2,813	$2,371	$2,813
103.	Miami Fort	OH	McIntosh	AL	CSXI-CHATT-NS	2819340	$8,664	$1,098	$1,977	$1,666	$1,977
104	Removed										
105	Removed										
106	Miami Fort	OH	Pepper	VA	CSXT-CINTI-NS	2819345	$5 174	$2,368	$4,263	$3,593	$4,263
107	Natrium	WV	Belle	WV	CSXI CINTI-NS	2812220	$8,532	$1,677	$3,019	$2,545	$3,019
108	Natrium	WV	Danville	VA	CSXI-LYNCH-NS	2812220	$2,696	$429	$772	$651	$772
109	New Johnsonville	TN	Chapman	PA	CSXT-CINTI-NS	2816130	$7,652	$2,374	$4,273	$3,602	$4,273
110.	Removed										
111.	New Johnsonville	TN	Murray	GA	CSXT-CHATT-NS	2816130	$4,815	$758	$1 364	$1,149	$1,364
112	Niagara Falls	NY	Belle	WV	CSXT-CLMBO NS	2812220	$3,269	$847	$1,507	$1,270	$1,507
113	Niagara Falls	NY	Edgemoor	DE	CSXT-BUFF-NS	*2812815*	*$12 375*	*$1,633*	*$2 940*	*$2 478*	*$2,940*
114	Niagara Falls	NY	Edgemoor	DE	CSXI BUFF-NS	2812220	$4,444	$1,666	$2,999	$2,527	$2,999

Comparison of NS Tariff Rates and
Maximum Rates Per Car for DuPont Movements - 1Q12

	Origin City (1)	ST	Destination City (2)	ST	Railroad(s) (3)	Commodity (4)	1Q2012 Tariff Rate 1/ (5)	Phase III Cost 1/ (6)	Jurisdictional Threshold 1/ (7)	SAC Rate 2/ (8)	STB Maximum Rate 3/ (9)
115	Pascagoula	MS	Fort Mill	SC	CSXT-ATLA-NS	2815112	$5 350	$1,347	$2,125	$2,044	$2,425
116	Starke	FL	Huntsville	AL	CSXT-DCTUR-NS	1441325	$1 910	$323	$581	$490	$581
117	Starke	FL	Huntsville	AL	CSXT-DCTUR-NS	1441325	$1 910	$515	$927	$781	$927
118	Wurtland	KY	Fort Mill	SC	CSXT-CHLTB-NS-	2819315	$1,061	$651	$1,172	$987	$1,172
119	Wurtland	KY	McIntosh	AL	CSXT BHAM-NS	2819315	$2 633	$882	$1 587	$1,337	$1 587
120	Belle	WV	Divine	IL	NS-PINE-CN	2813980	$11,542	$1,696	$3 052	$2,573	$3 052
121	Belle	WV	Mapleton	IL	NS-LOGPT-UPW	2813934	$7,845	$1,499	$2,699	$2,274	$2,699
122	Burnside	LA	Gracewood	GA	CN-NI WOR-NS	2819325	$18,406	$2,175	$3 915	$3,300	$3,915
123	Lemont	IL	Edgemoor	DE	BNSF-CHGO NS	2991315	$9,864	$3,049	$5,187	$4,625	$5,487
124	New Johnsonville	TN	McDonough	GA	CSXT CHATT-NS	2816130	$4,815	$1,064	$1 916	$1,615	$1 916
125	Charleston	TN	Woodstock	TN	NS-MEMPH CN	2812410	$9,265	$1,198	$2 157	$1,818	$2,157
126	Reybold	DE	Albuquerque	NM	NS-STRTR-BNSF	2819315	$10,844	$2,599	$4,679	$3,943	$4,679
127	Reybold	DE	Baltimore	MD	NS-BALHV-CSXT	2819315	$3,900	$453	$815	$687	$815
128	Reybold	DE	Blair	NT	NS CHGO-UP	2819315	$10,008	$2,411	$4,344	$3,661	$4,344
129	Reybold	DE	Brewton	AL	NS-BHAM-CSXT	2819315	$10 176	$2,731	$4 916	$4,143	$4 916
130	Reybold	DE	Castle Hayne	NC	NS CHLTB-CSXT	2819315	$5,844	$1 894	$3,408	$2,873	$3,408
131	Reybold	DE	Clinton	AZ	NS KCITY-UP	2819315	$14 928	$3 471	$6,247	$5,265	$6,247
132	Reybold	DE	Corson	SD	NS-CHGO BNSF	2819315	$10,008	$2,412	$4,342	$3,660	$4,342
133	Removed										
134	Reybold	DE	Ferguson	MS	NS-MEMPHIS-CN	2819315	$12,882	$3 154	$5,677	$4,785	$5,677
135	Reybold	DE	Hastings	NE	NS CHGO BNSF	2819315	$10,008	$2 413	$4 343	$3,660	$4,343
136	Reybold	DE	Indianapolis	IN	NS CINTI CSXT	2819315	$8,880	$2 180	$3 924	$3,307	$3,924
137	Reybold	DE	Omaha	NE	NS-CHGO UP	2819315	$10,008	$2,413	$4,344	$3,661	$4,344
138	Reybold	DE	Orange	TX	NS-ESTL-BNSF	2819315	$12,192	$2,881	$5,185	$4,370	$5 185
139	Reybold	DE	Phoenix	AZ	NS STRTR-BNSF	2819315	$10,844	$2,599	$4,678	$3,943	$4,678
140	Reybold	DE	Sioux City	IA	NS CHGO-BNSF	2819315	$10 008	$2,413	$4,343	$3,660	$4,343
141	Reybold	DE	Toledo	OH	NS-TOLHD-CSXT	2819315	$7,200	$3,026	$5,446	$4,590	$5,446
142	Reybold	DE	Washington	WV	NS-HAGTN-CSXT	2819315	$6,444	$724	$1,303	$1 098	$1,303

1/ From Rebuttal Exhibit II-A-12
2/ MMM Ratio from Rebuttal Exhibit III-II-2 x Column (6)
3/ Greater of Column (7) or Column (8)