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September 9, 2004



Via HAND DELIVERY

The Honorable Vernon A. Williams
Secretary
Surface Transportation Board
1925 K Street, NW
Washington, DC 20423

PUBLIC VERSION

Re: **STB Docket No. 41191 (Sub-No.1), AEP Texas North Company v. The Burlington Northern and Santa Fe Railway Company**

Dear Secretary Williams:

Enclosed for filing in the above-captioned matter are the original and ten copies of the Public version of The Burlington Northern and Santa Fe Railway Company's Motion to Strike. This filing consists of a single volume containing the Motion and Exhibits with Attachments. BNSF is also filing three copies of a CD containing a PDF version of the Motion, Exhibits, and Attachments. The Motion contains color pages. BNSF is submitting a Highly Confidential version of this Motion under separate cover.

Please date stamp the extra copy of this cover letter and return it to the messenger who delivered this filing.

Sincerely,

Samuel M. Sipe, Jr.

Enclosures

cc: Counsel for Complainant

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Office of Procurement
SEP 10 2004
Public Hearing

WASHINGTON

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LONDON

BRUSSELS

PUBLIC VERSION

**BEFORE THE
SURFACE TRANSPORTATION BOARD**



AEP TEXAS NORTH COMPANY,

Complainant,

v.

**THE BURLINGTON NORTHERN AND
SANTA FE RAILWAY COMPANY,**

Defendant.

Docket No. 41191 (Sub-No. 1)

ENTERED
Office of Proceedings
SEP 10 2004
Part of
Public Record

DEFENDANT'S MOTION TO STRIKE

On July 27, 2004, complainant AEP Texas North Company ("AEP Texas") filed Rebuttal Evidence in the above-captioned proceeding.¹ In several areas, AEP Texas' Rebuttal Evidence exceeds the scope of permissible rebuttal under rules the Board has announced in recent SAC cases. For reasons explained in detail below, BNSF requests that the Board strike AEP Texas' impermissible rebuttal evidence in the following areas:

- A new projection of revenue escalation based on an EIA forecast that considers factors that are inapplicable to SAC calculations;
- New evidence relating to the calculation of the volume of coal traffic handled by the TNR in 2003;

¹ On August 9, 2004, The Burlington Northern and Santa Fe Railway Company ("BNSF") requested that the Board extend the time within which BNSF could file a responsive pleading until September 9, 2004. The Board granted that request by an order served August 12, 2004.

- A new and substantially modified Rail Traffic Controller (RTC) analysis purporting to show that the TNR could provide service that is as good or better than the incumbent's service on movements originating at southern PRB mines and rerouted over a longer TNR route;
- A new RCAF forecast that increases forecasted revenues while decreasing forecasted operating costs;
- New evidence purporting to demonstrate that locomotives would be available to the TNR under short-term leases;
- New evidence relating to the cost of acquiring land for a right-of-way through Denver, CO;
- New evidence relating to the cost of solid rock excavation;
- A new engineering factor to be added to the construction cost of the TNR;
- New evidence relating to the cost of ballast;
- Inaccurate and misleading statements regarding BNSF's production of information in discovery relating to the variable costs of the issue traffic movement.

The grounds for this Motion are set out in detail below.

I. THE STANDARD REGARDING THE SCOPE OF PERMISSIBLE REBUTTAL

In response to repeated abuses of rebuttal by complainants in recent SAC litigation, the Board has articulated strict limits on the introduction of new evidence on rebuttal. These limits have several objectives: to streamline SAC proceedings by eliminating evidentiary disputes that arise for the first time on rebuttal; to permit the development of a reliable record through the adversarial testing of evidentiary submissions; and to ensure that the defendant has a meaningful opportunity to reply to the complainant's case-in-chief. While the Board's objectives are clear, AEP Texas' Rebuttal Evidence indicates that complainants are unwilling to give up the strategic advantages that come from submitting new evidence on rebuttal. The Board should make it clear in this case that it is serious about its rebuttal limitations.

The Board's rules governing rebuttal are premised on the longstanding rule that, as the party with the burden of proof on all SAC issues, the complainant must present a fully-supported case-in-chief on opening.² In accordance with this rule, the Board has repeatedly found that a complainant cannot significantly alter the configuration of its SARR on rebuttal or alter the core assumptions on which it has based its case-in-chief.³ A second fundamental rule that flows from the complainant's burden of proof is that a complainant is prohibited from submitting evidence in its rebuttal filing that could have and should have been presented on opening.⁴ It is impermissible for a complainant to present its assumptions or calculations on opening without any explanation and then sandbag the defendant by presenting a justification for its assumptions on rebuttal, when the defendant does not have an opportunity to respond. Such an approach allows the complainant to introduce into the record evidence of questionable reliability that has not been tested through the adversarial process. It is also contrary to basic notions of fairness that require that a defendant be afforded an opportunity to address the validity of evidence on fundamental aspects of a complainant's case.⁵

² *General Procedures for Presenting Evidence in Stand-Alone Cost Rate Cases*, Ex Parte No. 347 (Sub-No.3), slip op. at 5 (served Mar. 12, 2001) ("*General Procedures*"); *Duke Energy Corp. v. Norfolk Southern Ry. Co.*, STB Docket No. 42069, slip op. at 13-4, 15 (served Nov. 5, 2003) ("*Duke/NS*"); *Wisconsin Power and Light v. Union Pacific R.R. Co.*, STB Docket No. 42051, slip op. at 72 (served Sept. 12, 2001).

³ *Duke/NS* at 15; *Duke Energy Corp. v. CSX Transp., Inc.*, STB Docket No. 42070, slip op. at 4 (served March 25, 2003) ("*Duke/CSX I*"), affirmed in *Duke Energy Corp. v. CSX Transp., Inc.*, STB Docket No. 42070, slip op. at 14 (served Feb. 3, 2004) ("*Duke/CSX II*").

⁴ *General Procedures* at 5; *Duke/CSX I* at 4.

⁵ *Duke/CSX I* at 4; see e.g., *Texas Municipal Power Agency v. BNSF*, STB Docket No. 42056, slip op. at 107, 138 (served March 24, 2003) ("*TMPA*"); *FMC Wyoming Corp. v. Union Pacific R.R.*, STB Docket No. 42022, slip op. at 172 (served May 12, 2000).

In the context of these two fundamental limitations, the Board has outlined three potential approaches a complainant may adopt on rebuttal.⁶ First, the complainant may present further argument in support of the assumptions it made on opening. However, the additional argument must be in response to the defendant's criticism and, as noted above, it cannot consist of argument that could have and should have been presented on opening. The complainant cannot sandbag the defendant by holding back relevant argument until rebuttal when the defendant no longer has an opportunity to respond.

Second, the complainant may accept the defendant's alternative evidence and incorporate that evidence into its rebuttal SAC calculations. However, in adopting the defendant's evidence, the complainant should not be permitted to modify the methodologies it presented on opening under the guise of merely incorporating the defendant's evidence into the complainant's case-in-chief.

Third, the complainant can acknowledge errors in its opening evidence and modify that evidence, but only in limited circumstances. A complainant cannot, without seeking permission, modify core SAC assumptions, as noted above. In addition, a complainant cannot submit new evidence unless (a) the defendant presents a well founded criticism of complainant's evidence but does not present alternative quantitative evidence, or (b) the complainant demonstrates that the defendant's alternative evidence is infeasible, unsupported or unrealistic. Where it is clear that the complainant's opening evidence on a particular matter is flawed, the complainant is not entitled to a second chance at submitting evidence on rebuttal merely because the complainant disagrees with the defendant's evidence or because the complainant believes that better evidence

⁶ See *Duke/NS* at 14-15.

exists.⁷ The Board has made it clear that when the complainant has failed to present viable opening evidence, the Board entertains a presumption in favor of the defendant's evidence that must be overcome with a strong showing that the defendant's evidence is *wrong* before any alternative rebuttal evidence will be considered.⁸ Without such a presumption in favor of the defendant's evidence, the prohibition on rebuttal articulated in *Duke/NS* would be illusory.

AEP Texas' Rebuttal Evidence in this case ignores these rules in several areas.

II. AEP TEXAS' IMPERMISSIBLE REBUTTAL ON ISSUES RELATING TO THE SARR TRAFFIC GROUP AND SARR REVENUES

AEP Texas sought to introduce new evidence on rebuttal relating to several important issues in the calculation of SARR revenues and traffic volumes. The Board should strike this new evidence from the record for the reasons set out below.

A. The Board Should Strike AEP Texas' New Approach To Forecasting SARR Revenues After Expiration Of Existing Contracts

AEP Texas improperly modified on rebuttal its methodology for forecasting future revenues upon expiration of a contract. On opening, AEP Texas projected future revenues for contract coal movements from contract expiration through the end of the discounted cash flow ("DCF") period using the so-called "forecast of changes in the western coal transportation rates as published in *AEO 2003*."⁹ AEP Texas Opening Nar. at III-A-45. This forecast was published by EIA in January 2003. On reply, BNSF made two modifications to AEP Texas' methodology for projecting future revenues upon expiration of a contract. First, BNSF used the BNSF long-

⁷ See *Duke/NS* at 94; *Duke/CSX II* at 64; *TMPA* at 132.

⁸ *Id.* at 14.

⁹ The *AEO 2003* is the forecast published in January 2003 by the U.S. Department of Energy's Energy Information Administration ("EIA") titled "*Annual Energy Outlook 2003 With Projections to 2025*." See AEP Texas Opening electronic workpaper "TNR Coal Revenue Forecast.xls," worksheet "EIA Transportation Forecast."

range plan for coal (“LRP”), rather than the EIA forecast, to project such revenues for the 2003 through 2008 period. Second, BNSF used the more recent EIA national forecast published in January 2004 to project such revenues for the 2009 through 2020 period.¹⁰ BNSF Reply Nar. at III.A-101 to 102.

On rebuttal, AEP Texas abandoned the methodology it sponsored in its Opening Evidence. In place of its opening methodology, AEP Texas accepted BNSF’s proposal to use the BNSF LRP to project revenues upon contract expiration for the period 2003 through 2008, but it rejected BNSF’s proposal to use the 2004 national forecast published by EIA to project such revenues from 2009 through 2020. AEP Texas Rebuttal Nar. at III-A-74 to 75, III-A-84 to 85. Instead, for those years, AEP Texas used an unpublished 2004 EIA “regional” forecast for Powder River Basin (“PRB”) coal that was used by the Board in its recent *Xcel* decision to project such revenues. *Id.* The EIA prepares, but does not publish, forecasts for 143 supply-demand regions, including the PRB supply-region.¹¹ These “regional” forecasts are available from the EIA upon request. Use of the unpublished EIA “regional” forecast rather than the published EIA national forecast to project rates upon contract expiration has the effect of increasing AEP Texas’ revenues by 1.2 percent.¹²

¹⁰ Escalation of rates upon contract expiration is only one of two issues raised by BNSF concerning AEP Texas’ methodology for forecasting revenues after a contract expires. The other issue is the level of the rate upon contract expiration. AEP Texas assumes the expired contract rate should equal the last contract rate, which is an assumption that is not supported by any evidence. BNSF demonstrates that the rates to competitively-served and sole-served rates should decline upon contract expiration. BNSF Reply Nar. at III.A-97 to 101. BNSF does not address this issue here because AEP Texas did not submit impermissible new evidence on rebuttal relating to its opening approach to this issue.

¹¹ Attachment 1 to the Verified Statement of Julie Murphy (hereafter “Murphy V.S.”) at 3. This Verified Statement is attached to this Motion as Exhibit 1.

¹² Murphy V.S. at 6.

The Board should strike AEP Texas' use of the unpublished EIA "regional" forecast to project expired contract revenues from 2009 through 2020 because it constitutes improper rebuttal. As explained above, a complainant cannot change its opening evidence on rebuttal without satisfying the conditions set forth in *Duke/NS*. AEP Texas clearly did not do so here. While it abandoned its opening approach, thus choosing not to pursue the first option under *Duke/NS*, AEP Texas neither adopted BNSF's approach to the projection of 2009-2020 revenues (the second option under *Duke/NS*) nor sought to demonstrate that BNSF's approach was infeasible (the third option under *Duke/NS*). Indeed, AEP Texas could not credibly have challenged the feasibility of BNSF's approach since BNSF accepted AEP Texas' use of the published national EIA forecast and merely used a more recent version. AEP Texas never affirmatively addressed BNSF's proposed use of the published EIA national forecast. It merely proposed an alternative methodology – an unpublished EIA "regional" forecast – stating that such a forecast was used by the Board in the recent *Xcel* and *Duke/CSX II* decisions. AEP Texas Rebuttal Nar. at III-A-74 to 75. However, the fact that the Board used an EIA "regional" forecast in other cases does not justify the complainant's use of it on rebuttal here, where BNSF has been deprived of any opportunity to submit evidence as to the reasonableness of that forecast.¹³

In fact, use of the EIA's 2004 unpublished "regional" PRB forecast to project revenues upon contract expiration is unreasonable in a SAC case. In such cases, the Board applies a forecast to project future revenues on coal transportation from a mine to each particular plant in the traffic group. It is improper to use the unpublished EIA "regional" forecast to make such

¹³ BNSF has objected to the Board's use of the "regional" PRB forecast in the *Xcel* case, raising that issue in its currently pending BNSF Petition for Reconsideration, STB Docket No. 42057 (filed June 28, 2004).

projections because that “regional” coal rate forecast is developed based upon a consideration of several factors that are irrelevant to a determination of how future rates from a particular mine origin to a particular plant are expected to change. While the published literature does not fully explain the methodology used by the EIA in its 2004 regional forecast to project future coal rates, it is apparent from the literature that the EIA regional forecast incorporates factors that are not relevant to rates for the transportation of coal to existing power plants included in the stand-alone shipper group. Specifically, in the literature, EIA explains that the 2004 forecast projects future coal rates using a two-tier rate structure and that the second tier transportation rate

is used to capture the higher cost of expanded shipping distances in large demand regions. The second tier is also used to capture costs associated with the use of subbituminous coal at units that were not originally designed for its use.¹⁴

A more detailed explanation of the EIA forecasting methodology provided by EIA to BNSF’s witness Ms. Murphy confirmed that EIA adjusted future coal rates in its 2004 regional forecast based upon factors that are irrelevant to forecasting how rates from a particular mine origin to a particular plant will change in the future.¹⁵ Specifically, in forecasting future rates in EIA’s 2004 forecast, EIA analyzed whether it expected the average length of haul for coal moving in a particular supply-demand region to change in the future. If EIA believed that a new power plant would be built in a particular supply-demand region and, as a result of the location of the new plant, the average length of haul for coal in that region would increase, EIA increased the average transportation rate in that supply-demand region to reflect the increased average

¹⁴ EIA, *Assumptions to the Annual Energy Outlook 2004*, at 120 (dated February 2004). See [http://www.eia.doe.gov/oiaf/aeo/assumption/pdf/0554\(2004\).pdf](http://www.eia.doe.gov/oiaf/aeo/assumption/pdf/0554(2004).pdf).

¹⁵ Murphy V.S. at 4-5 and Attachment 1 thereto.

length of haul.¹⁶ In addition, EIA increased future coal rates in a particular supply-demand region if it believed that a plant in that region would be converted to burn sub-bituminous coal, like PRB coal, for the first time. EIA assumed that transportation rates to that plant would increase by \$1.27 per ton in the year such conversion is expected to occur to account for the conversion costs, including the cost of purchasing additional plant specific-equipment (such as scrubbers).¹⁷

Neither of these factors should be considered in projecting rates in a stand-alone rate case which seeks to determine how rates from each mine origin to each particular plant in the traffic group will change in the future. The length of haul from a particular mine origin to a particular plant in the traffic group will not change in the future and, consequently, that plant's future rate should not increase as a result of the future construction of a plant outside the shipper group that causes the average length of haul in the supply-demand region to increase. Similarly, all the plants in the shipper group already burn sub-bituminous coal and, consequently, their transportation rates should not increase to account for the conversion costs that a plant outside the traffic group may face if it decides to purchase additional equipment to burn sub-bituminous coal. Thus, it is inappropriate to use the unpublished EIA "regional" forecast to project future rates in a stand-alone rate case.

Some of the numbers in the unpublished 2004 EIA "regional" forecast used by AEP Texas provide further evidence that the forecast should not be used to project future rates in a stand-alone case. For example, that forecast provides that coal transportation rates will increase

¹⁶ Murphy V.S., Attachment 1 at 2.

¹⁷ Murphy V.S. at 4-5 and Attachment 1 thereto at 2.

by 22.8 percent in 2009 in the PRB supply region/Montana demand region.¹⁸ That “regional” forecast then projects that coal transportation rates will increase by another 17.44 percent in 2010.¹⁹ Whatever factors produced those very significant rate increases in the EIA forecast, there is no conceivable basis for assuming that existing, point-to-point rates will experience such sharp, single-year increases. Indeed, the published EIA national forecast for 2004 shows much more modest growth with the high annual change equaling 2.32 percent during the 2002 to 2021 period²⁰ – than the EIA “regional” forecast for that supply-demand region.

In sum, the unpublished EIA “regional” PRB forecast used by AEP Texas to project future revenues upon contract expiration should be struck because it constitutes improper rebuttal and it is an inappropriate forecast to use to project future rates in a SAC case.

B. The Board Should Strike AEP Texas’ New Calculation Of 2003 Coal Volumes

The Board should also strike new evidence in AEP Texas’ Rebuttal on the calculation of 2003 coal volumes. On opening, AEP Texas used a comparison of coal consumption to coal deliveries to determine the volume of coal traffic transported by the TNR in the year 2003.²¹ On reply, BNSF rejected AEP Texas’ methodology, explaining that it involved a convoluted and erroneous apples-to-oranges comparison. BNSF Reply Nar. at III.A-53. Instead, BNSF used an

¹⁸ Murphy V.S. at Table 1. These figures were converted by AEP Texas from real to nominal dollars for the purpose of developing a nominal rate forecast for the stand-alone railroad. See AEP Texas Rebuttal electronic workpaper “TNR Coal Revenue Forecast Reb revised.xls” worksheet “EIA Transportation Forecast.”

¹⁹ Murphy V.S. at Table 1.

²⁰ Murphy V.S. at 3, n.5.

²¹ BNSF Reply Nar. at III.A-53; AEP Texas Opening electronic workpaper “SARR Traffic Group Model 12-31-2003 DELIVERED.xls,” worksheets “Heat Input Growth” and “TNR Tonnage.”

alternate methodology that multiplied BNSF coal deliveries in 2002 by the average decline in BNSF coal volumes between 2002 and 2003 (as calculated by AEP Texas) to derive 2003 coal volumes. BNSF Reply Nar. at III.A-55.

On rebuttal, AEP Texas modified its methodology for calculating 2003 coal volumes “in response to points raised by BNSF on Reply.” AEP Texas Rebuttal Nar. at III-A-4. Specifically, AEP Texas “re-computed the 2003 coal volumes by adjusting 2002 deliveries as reported in the BNSF traffic tapes by the rate implied by BNSF’s Long Range Plan or holding them constant if the volumes are equivalent to the plant operating at or above an 85% capacity factor.” *Id.* AEP Texas incorrectly claims that this approach eliminates “any dispute between the parties on this issue.” AEP Texas Rebuttal Nar. at III-A-4. In fact, under AEP Texas’ rebuttal methodology, the volumes to 13 plants were held constant between 2002 and 2003.²² Under BNSF’s alternate methodology, volumes to those plants declined between 2002 and 2003 consistent with the overall average decline in BNSF coal volumes between 2002 and 2003.²³ Due to this difference, AEP Texas’ rebuttal methodology overstated 2003 volumes by almost 1 million tons.²⁴

As explained above, under the standards established in *Duke/NS*, a complainant cannot present on rebuttal an alternative methodology to that presented by defendant on reply unless it demonstrates that defendant’s reply methodology is infeasible. AEP Texas did not even attempt to make such a showing here. Instead, it disingenuously suggested that it had eliminated “any dispute” between the parties on this issue. In any event, AEP Texas could not show that BNSF’s calculations were infeasible since BNSF’s methodology is consistent with the downward trend in

²² Murphy V.S. at 6-7.

²³ BNSF Reply electronic workpaper “SARR Traffic Group Tonnage Model_BNSF Reply.xls” worksheet “TNR Tonnage.”

²⁴ Murphy V.S. at Table 2.

BNSF coal volumes between 2002 and 2003 while AEP Texas' rebuttal methodology clearly is not. As explained above, AEP Texas' rebuttal methodology assumes 2003 volumes will equal 2002 volumes for several plants in the traffic group despite its recognition that overall coal volumes declined between 2002 and 2003.²⁵

The Board should strike AEP Texas' rebuttal methodology for calculating 2003 coal volumes as improper rebuttal.

C. The Board Should Strike AEP Texas' Rebuttal Evidence Purporting To Show That Rerouted Traffic Can Be Handled Over The Longer TNR Route Without A Degradation In Service

A critical issue in this case involves AEP Texas' inclusion of a large volume of traffic in the SARR traffic group that originates at southern PRB mine origins and is assumed to be rerouted from the real-world route of movement to a longer TNR route. BNSF demonstrated on reply that AEP Texas should not be able to include this rerouted coal traffic because that traffic would travel from 25 to more than 100 miles farther over the AEP Texas route but AEP Texas had failed to demonstrate that its SARR could provide the same level of service over the longer route that BNSF provides in the real world. BNSF Reply Nar. at III.A-24 to 29, III.A-34 to 37. For rerouted traffic that moved on the real-world BNSF in 2003, AEP Texas' only evidence that it could provide service at levels comparable to BNSF was a transit time analysis based on AEP Texas' RTC simulation.²⁶ BNSF demonstrated that AEP Texas' RTC analysis depended upon

²⁵ As explained in the Murphy V.S. at 6-7, there is no logical reason to assume that plants operating at or above 85% capacity were immune from the decline in demand. Moreover, even if it were true that those plants were not affected by declining demand, then the other plants would have experienced more than a { } decline. Holding some plants at the 2002 volume levels while reducing consumption at other plants by only { } is inconsistent with BNSF's overall decline of { }.

²⁶ For rerouted traffic that did not move on the BNSF in 2003, such as the movements to Georgia Power's Scherer plant, there is no basis for making a transit time comparison. AEP Texas did not submit any other evidence to show how it would transport the Georgia Power

unrealistic assumptions – including the absence of any UP trains at the mines and no unplanned track outages – in order to produce unrealistic transit times. When appropriate modeling assumptions were made, the AEP Texas RTC model run ended in gridlock. BNSF Reply Nar. at III.A-28 to 29. Since AEP Texas’ RTC model could not be run with its selected traffic group under realistic operating conditions, AEP Texas failed to make a credible showing that the TNR was capable of handling the selected traffic group, including the rerouted traffic. As a result, AEP Texas failed to support its burden of demonstrating that the TNR could meet existing service levels for the rerouted traffic.

On rebuttal, AEP Texas acknowledged that in several important respects, the operating assumptions used in its RTC model were not appropriate.²⁷ In some areas, AEP Texas accepted defendant’s alternative evidence. *See, e.g.*, AEP Texas Rebuttal Nar. at III-B-13, III-B-15 to 20. In other areas, discussed below, AEP Texas acknowledged that its Opening Evidence was deficient but it did not accept BNSF’s evidence and instead submitted new assumptions and new methodologies in violation of the Board’s rules governing rebuttal evidence. In addition, AEP Texas submitted a new RTC analysis that failed to include 17% of the coal train movements that AEP Texas itself assumes are part of the TNR traffic group. The discussion of these issues below is based on the Verified Statements of BNSF witness David R. Wheeler, attached as

traffic over a longer, more congested route without a degradation in service. *See* BNSF Reply Nar. at III.A-36.

²⁷ AEP Texas did not accept BNSF’s criticism that the TNR must account for the presence of UP trains at the mines and could not, therefore, assume availability of a mine loading slot whenever TNR trains are ready to be loaded. AEP Texas Rebuttal Nar. at III-B-8. Since AEP Texas has not changed its position on this matter in its Rebuttal Evidence, BNSF does not address it here. However, for reasons stated in its Reply Evidence at III.B-4 to 5, III.B-19, 20. BNSF continues to believe that AEP Texas’ failure to account for the presence of the UP at the mines makes its RTC analysis untenable regardless of how the other issues discussed in this Motion are treated.

Exhibit 2, and BNSF witness Robert J. Plum and David T. Witherspoon, attached as Exhibit 3. Because the modifications AEP Texas made to the RTC model constitute impermissible rebuttal, AEP Texas' Rebuttal RTC analysis should be struck and the Board should also strike any conclusions that AEP Texas purports to draw from its flawed Rebuttal RTC analysis.

Treatment of Random Failures: AEP Texas acknowledged on Rebuttal that its failure to include any random or unplanned track outages in its Opening RTC model was improper. AEP Texas Rebuttal Nar. at III-B-11 to 12. Having admitted that its Opening Evidence was flawed in this area, under *Duke/NS*, AEP Texas was obligated to accept defendant's outage evidence unless it first showed that BNSF's evidence on the random failures that would be experienced by the TNR was infeasible, unrealistic or unsupported. AEP Texas could not possibly make such a showing here since BNSF simply used evidence of actual outages that occurred on the real-world segments replicated by AEP Texas during the 2002 time-period modeled by AEP Texas. See BNSF Reply Nar. at III.B-20.

In fact, AEP Texas merely expressed disagreement with BNSF that the TNR could be expected to experience random failures that are comparable to the real-world failures experienced by the railroad that the TNR is supposed to replace. If the Board's limitations on rebuttal evidence are to have any meaning at all, a complainant may not simply disagree with the defendant's evidence but it must show that defendant's evidence is infeasible. If a mere disagreement with the defendant is sufficient to support the submission of new evidence on rebuttal, then the Board's limitations on rebuttal could always be circumvented, since a complainant will always be able to manufacture some type of disagreement with the defendant's evidence.

Moreover, the opinion of AEP Texas' witness Mr. Reistrup that the TNR would experience only a small fraction of the actual outages experienced by the real-world BNSF (13 out of 137) is based on faulty premises.²⁸ For example, Mr. Reistrup, AEP Texas' witness, asserts that the TNR would not experience as many random failures as the BNSF because "random failures are less of a problem with a new, state-of-the art railroad design." AEP Texas Rebuttal Nar. at III-C-41. Mr. Reistrup assumes away equipment failures, locomotive failures, and train handling problems on the basis that they are the result of old equipment. AEP Texas Rebuttal Nar. at III-C-51. But AEP Texas overlooks the fact that the RTC models the peak year of TNR operations – 2020 – when the railroad is 20 years old.

In addition, Mr. Reistrup disregarded many outages on grounds that "[a]lthough the duration of the reported events is shown, BNSF has not provided any evidence of the extent to which any trains were actually delayed by these events." AEP Texas Rebuttal Nar. at III-C-43. This criticism is a red herring. As BNSF's witness Mr. Wheeler indicates in his Verified Statement, information about the extent to which real world trains were actually delayed by outages is neither necessary nor useful in the RTC simulation of TNR operations.²⁹ Both in preparing BNSF's Reply RTC model and in evaluating AEP Texas' Rebuttal RTC model, Mr. Wheeler merely programmed the failure event into the simulation of the rail network in the RTC model and let the RTC determine whether any trains would actually be delayed by the event.³⁰

²⁸ Attachment 3 to the Wheeler V.S. is a comparative listing of the random failures used by Mr. Wheeler in BNSF's Reply RTC model and in his testing of AEP Texas' Rebuttal RTC model and those accepted by Mr. Reistrup.

²⁹ Wheeler V.S. at 2.

³⁰ Mr. Wheeler points out in his Verified Statement that random failures did not always result in train delays in the BNSF Reply RTC simulation. Wheeler V.S. at 2 n.1.

This approach most closely represents real-world conditions where it is impossible to know in advance whether an unplanned outage will affect train operations.

Finally, Mr. Reistrup assumed that all track maintenance outages identified by BNSF are of the type that can be planned and implemented by a dispatcher as opposed to requiring immediate attention. AEP Texas Rebuttal Nar. at III-C-50. AEP Texas presented no support for this assumption. A complainant cannot possibly support new rebuttal evidence based merely on the say-so of its witnesses.

Having conceded that it failed to account for random failures on opening, AEP Texas was required to accept BNSF's evidence of random failures unless that evidence was demonstrably wrong. AEP Texas did not come close to meeting this standard. BNSF's witness Mr. Wheeler demonstrates that AEP Texas' failure to comply with the Board's rules on this issue had a material impact on the results of its RTC analysis. As explained in the attached Verified Statement, Mr. Wheeler reran the AEP Texas' Rebuttal RTC simulation, keeping all assumptions as AEP Texas presented them on rebuttal, except that he replaced AEP Texas' random failure assumptions with BNSF's. When he did so, the simulation ended in gridlock.³¹ Thus, if AEP Texas had followed the Board's rules governing rebuttal, it would have concluded that the TNR cannot handle the shipper group posited by AEP Texas without experiencing gridlock.

Manual Adjustments To Avoid Gridlock: AEP Texas also admitted that it manually intervened in the running of the Rebuttal RTC model to delay trains because "there were occasions where traffic congestion was too intense at certain locations on the TNR system to permit the program to efficiently dispatch the trains." AEP Texas Rebuttal Nar. at III-C-55. In other words, when the RTC model was run as programmed, even with the vastly reduced

³¹ Wheeler V.S. at 2.

maintenance outages discussed above, the simulation ended in gridlock. This manual intervention in the running of the RTC model is a new, inappropriate methodology introduced for the first time on rebuttal. Standing alone, this manual intervention warrants striking the AEP Texas Rebuttal RTC model.

AEP Texas attempts to pass off its manipulation of the model as minimal, amounting to “an average of about one train per day over the 19 days simulated.” *Id.* In fact, as shown in Attachment 4 to the Wheeler V.S., 15 of the 19 manipulations, or 78.9 percent, were made during the 7-day peak week (the period actually used for modeling capacity as opposed to the warm-up and wind-down periods). The second day of that week required five “adjustments” and the fourth and fifth days required four each.

Mr. Reistrup’s claim that his manual adjustments are the equivalent of a routine dispatching exercise akin to that performed on real-world railroads every day is disingenuous. AEP Texas’ Narrative implies that when it identified a “snarled” train in the RTC analysis, that train was held at or near the location of the snarl until the congestion cleared, the way a dispatcher might deal with congestion. AEP Texas Rebuttal Nar. at III-C-55. In fact, as shown in Attachment 5 to the Wheeler V.S., for each manipulation AEP Texas’ experts actually held a train at the point where it entered the TNR system, not at the point where a “snarl” occurred. In other words, AEP Texas’ experts ran the RTC model to identify which train appeared to cause congestion, reset the time the train entered the network by holding it at its origination point on the network, and then reran the RTC to determine whether the particular “snarl” caused by that train had been relieved and the RTC could be run to completion without gridlock.³² This is not

³² As AEP Texas described it: “Messrs. Reistrup and Schuchmann used the simulation to determine what trains were ‘snarled’ and the time and location. They would then select one of the trains involved and hold it on the TNR system for an amount of time sufficient to remove it

similar to the way in which a real-world dispatcher controls train movements. A real-world dispatcher does not have the perfect foresight to know that a particular train will encounter congestion at a given time and place down the line. A real-world dispatcher also cannot travel backward in time and decide to hold a train at a convenient point because a model has foretold that the train will encounter congestion due to meets, passes, or unexpected outages if he does not. Nor does the real-world dispatcher have the ability to run repeated tests on the real-world network to determine if his decision to hold a train for a particular time at a particular point will relieve congestion.

AEP Texas should not be permitted to introduce its new manual adjustment methodology on rebuttal. Mr. Wheeler ran the AEP Texas Rebuttal RTC model without the manual “holds” placed on trains to determine whether this modified approach had a significant impact on the RTC. As Mr. Wheeler explains, when the manual adjustments are eliminated, gridlock results even if the reduced random failures sponsored by AEP Texas on rebuttal are left in the model.³³

Flawed Implementation of the RTC: In addition to the deliberate modifications to the RTC analysis that AEP Texas sponsors on rebuttal, which exceed the scope of proper rebuttal as discussed above, AEP Texas made what may be an inadvertent modification to the RTC analysis that completely undermines the validity of AEP Texas’ Rebuttal RTC Evidence. As demonstrated in the Verified Statement of Robert J. Plum and David T. Witherspoon (hereafter “Plum/Witherspoon V.S.”), AEP Texas only modeled 83 percent of the loaded coal trains it says

from the snarl and permit the program to continue dispatching the trains.” AEP Texas Rebuttal Nar. at III-C-55.

³³ Wheeler V.S. at 3. Needless to say, when both sets of improper rebuttal assumptions are eliminated from the RTC model – the improper “holds” and the reduced random failures – the simulation ends in gridlock even if all other AEP Texas assumptions are left unchanged. *Id.* at 3 n.3.

were supposed to run on the TNR during the simulation period.³⁴ AEP Texas asserts that its Rebuttal Exhibit III-B-5, entitled “Trains Used in AEP Texas’ Rebuttal RTC Model Run,” contains the peak period trains for its rebuttal traffic group. AEP Texas Rebuttal Nar. at III-B-4. That Exhibit identifies 710 loaded coal trains that, according to AEP Texas, needed to be run through the RTC model. Mr. Wheeler extracted from the AEP Texas Rebuttal RTC simulation a list of trains that were actually run through the simulation.³⁵ Mr. Wheeler’s list indicates that AEP Texas only modeled 592 loaded coal trains instead of the 710 trains AEP Texas said needed to be run through the model.³⁶ This substantial omission of trains renders AEP Texas’ Rebuttal RTC analysis invalid, wholly apart from the other errors discussed above.

For the foregoing reasons, the Board should strike AEP Texas’ Rebuttal Evidence relating to the RTC model and it should strike all conclusions that AEP Texas purports to reach based on the Rebuttal RTC analysis.

III. IMPROPER UPDATING OF THE RCAF USED TO PROJECT REVENUE ESCALATION AND FUTURE OPERATING COSTS

On opening, AEP Texas used the RCAF forecast published by Global Insights (formerly DRI-WEFA) in September 2003 to forecast future rates for shippers in the traffic group prior to

³⁴ Plum/Witherspoon V.S. at 2. The Plum/Witherspoon V.S. is attached to this Motion as Exhibit 3.

³⁵ Wheeler V.S. at 4 to 5. The list appears as Attachment 2 to the Plum/Witherspoon V.S.

³⁶ Plum/Witherspoon V.S. at 2. In addition, AEP Texas only modeled 608 of the corresponding 710 empty coal trains. Plum/Witherspoon V.S. at 2. As discussed in the attached Plum/Witherspoon Verified Statement, their analysis revealed that in a number of instances AEP Texas entirely failed to model trains to a given destination plant while in many others AEP Texas modeled only some of the trains destined for a plant. *Id.* at 3. The most glaring example of AEP Texas’ faulty modeling is that it entirely omitted any traffic to Georgia Power’s Scherer plant, which AEP Texas believes would be by far the TNR’s largest movement in 2020. *See* AEP Texas Rebuttal electronic workpaper “Simulation Trains – peak calc rebut.xls,” worksheet “Growth Factors,” cell AH76.

the expiration of their existing contracts and to project future common carrier rates to Xcel's Pawnee plant.³⁷ This methodology allowed AEP Texas to adjust the rates for each shipper whose coal moved by contract in accordance with the individual rate adjustment mechanism (based on changes in the RCAF) in that contract during the remaining term of the contract; it also allowed AEP Texas to adjust Xcel's future Pawnee rate according to the RCAF-based adjustment mechanism in the common carrier pricing authority.³⁸ On reply, BNSF agreed to use that same September 2003 RCAF forecast to project such rates.³⁹ AEP Texas' Opening Evidence also used the same September 2003 RCAF forecast published by Global Insights to adjust future operating expenses⁴⁰ and BNSF accepted use of that published forecast to project future operating expenses.⁴¹

On rebuttal, with no mention of the change in its Narrative, AEP Texas modified its methodology for forecasting future revenues and operating expenses by using an "updated" RCAF forecast that actually consisted of a combination of a new June 2004 RCAF forecast (published by Global Insights) for some time periods and the older September 2003 RCAF forecast (published by Global Insights) for other time periods. Specifically, AEP Texas used

³⁷ AEP Texas Opening Nar. at III-A-43; AEP Texas Opening workpaper 07650-53, AEP Texas Opening electronic workpaper "TNR Coal Revenue Forecast.xls," worksheet "RCAF-U Forecast."

³⁸ BNSF Reply Nar. at III.A-92, III.A-94 to 95.

³⁹ BNSF Reply Nar. at III.A-92, III.A-94 to 95; BNSF Reply electronic workpaper "TNR Coal Revenue Forecast_BNSF Reply.xls," worksheet "RCAF-U Forecast."

⁴⁰ AEP Texas Opening electronic workpaper "GlobalInsightRCAF-ex5-Table4.xls, worksheet "Ex5." AEP Texas' supposed productivity adjustment to the expected changes in the RCAF for operating expense purposes are not at issue here.

⁴¹ See BNSF Reply electronic workpaper "Exhibit III-H-1.xls," worksheet "Inflation Index."

index values included in the June 2004 RCAF forecast to develop rates for the first three quarters of 2004 but then used the September 2003 RCAF forecast to develop rates for the fourth quarter 2004 and 2005 through 2020.⁴² However, this new methodology produced substantial increases in RCAF values after the Third Quarter 2004 for purposes of AEP Texas' revenue forecast but a substantial *decline* in RCAF values after the Third Quarter 2004 for purposes of AEP Texas' operating cost forecast.⁴³

AEP Texas cannot modify its RCAF forecast on rebuttal since BNSF accepted AEP Texas' opening forecast. The Board has repeatedly held that once the defendant accepts a complainant's opening assumptions, the complainant may not change those assumptions on rebuttal.⁴⁴ The fact that AEP Texas' new RCAF forecast relies on updated data does not justify the submission of a new forecast on rebuttal. Even if the new forecast consisted of the mere substitution of a new version of the same forecast used on opening (which it does not, as discussed below), it would be impermissible. The complainant in a SAC case should not be able to selectively update evidence on rebuttal. Piecemeal updating of the record can unfairly distort the results of the SAC analysis. Use of an updated forecast in one section of the SAC analysis while failing to update all other data or indices used in other portions of the SAC analysis (or updating the data using inconsistent methodologies) can create anomalous results. The Board should therefore not allow a complainant to use "updated" data for the first time on rebuttal.

⁴² See Murphy V.S. at 8-9.

⁴³ Murphy V.S. at 11-12 and Table 4.

⁴⁴ *Public Service Co. of Colorado d/b/a Xcel Energy v. Burlington Northern and Santa Fe*, STB Docket No. 42057, slip op. at 61 (served June 7, 2004) ("Xcel"); *Duke/CSX II* at 49, 73, 77; *Carolina Power & Light Co. v. Norfolk Southern Railway Co.*, STB Docket No. 42072, slip op. at 79-80 (served Dec. 22, 2003) ("CP&L"); *Duke/NS* at 14 n.18, 50; *TMPA* at 125, 155.

In addition, AEP Texas seeks to manipulate the SAC results in this case under the guise of “updating” its RCAF forecast. AEP Texas’ new RCAF forecast is a result-oriented, made-for-litigation forecast that is inconsistent with both the September 2003 and June 2004 RCAF forecasts published by Global Insights. For example, the “updated” RCAF forecast used by AEP Texas to project revenues on rebuttal assumes that the annual RCAF-U index will increase by 3.9 percent in 2005.⁴⁵ This assumed increase is much higher than the projected annual 2005 increase in that index appearing in either the published September 2003 RCAF forecast (2.43 percent increase) or the June 2004 RCAF forecast (2.2 percent increase).⁴⁶ AEP Texas’ new RCAF forecast results in an overstatement of revenues by approximately \$8.6 million per year beginning in 2004.⁴⁷

AEP Texas’ new RCAF forecast is also internally inconsistent. While AEP Texas produced substantial increases in the RCAF values when using the forecast to project revenues, it produced a substantial *reduction* in the RCAF values when using the forecast to project operating expenses. This perverse result appears to flow from AEP Texas’ inconsistent use of projected RCAF index values and projected rates of change.⁴⁸ The impact of this new methodology on operating costs is also substantial. If AEP Texas had used the same RCAF index for both

⁴⁵ Murphy V.S. at Table 3.

⁴⁶ *Id.* Similarly, the “updated” RCAF-A index used by AEP Texas on rebuttal assumes a much higher increase in that forecast in years 2004 and 2005 than either the September 2003 or June 2004 published RCAF forecast. *Id.*

⁴⁷ *Id.* at 9-11.

⁴⁸ *Id.* at 11-12 and Table 4.

operating expenses and revenues on rebuttal, its operating expenses would have been approximately \$214 million higher over the 20-year DCF period.⁴⁹

In sum, the Board should strike all rebuttal evidence relating to the “updated” RCAF forecast used by AEP Texas to project revenues and operating costs for the first time on rebuttal not only because that new forecast constitutes improper rebuttal but because that new forecast is made-for-litigation, inconsistent with the RCAF forecasts published by Global Insights, and internally inconsistent.

IV. NEW EVIDENCE RELATING TO SARR LOCOMOTIVE REQUIREMENTS

AEP Texas’ Rebuttal Evidence concerning the number of SD70MAC locomotives the TNR would require is improper rebuttal and should be struck by the Board. AEP Texas seeks to introduce new evidence in the guise of justifying the peaking factor it used on opening. BNSF pointed out on reply that the peaking factor used by AEP Texas would not, in fact, guarantee that the TNR would have sufficient locomotives on the busiest days throughout the year. BNSF Reply Nar. at III.C-7, III.D-3. AEP Texas did not contest this assertion, but instead argued for the first time on rebuttal that the TNR should not be required to have enough locomotives to satisfy its needs on the busiest days.⁵⁰ The supposed basis for this novel proposition is that “it is common practice in the industry for railroads to acquire additional equipment on a short-term basis to meet their peak-period needs.” AEP Texas Rebuttal Nar. at III-C-14.

This argument is neither timely nor persuasive. In its Opening Evidence, AEP Texas did not include a single word on the possibility that the TNR would satisfy locomotive requirements

⁴⁹ *Id.* at 11-12.

⁵⁰ AEP Texas framed the argument in terms of meeting requirements for the TNR’s single “peak” day, but this is misleading. Peaks of a magnitude similar to that on the “peak” day occur unpredictably throughout the year.

through short-term leases. Its attempt to introduce evidence concerning the use of such leases on rebuttal as a justification for its approach on opening is a classic example of sandbagging that should be rejected by the Board. In fact, AEP Texas has simply presented a post-hoc rationalization for its unsupported Opening Evidence that it lifted nearly verbatim (including the footnotes) from the complainant's Rebuttal Evidence in the Otter Tail case.⁵¹

AEP Texas' new evidence concerning short-term leases also lacks any probative value. Under AEP Texas' proposed approach, the TNR would require "on-demand" locomotives available for short-term lease to respond to frequent surges in demand that cannot be predicted significantly in advance of when they occur. These "on-demand" locomotives would also need to be available exactly where the TNR required them – for example, an SD70MAC located in Chicago would not help the TNR in the PRB. None of the evidence submitted by AEP Texas suggests that SD70MACs are available for short-term lease at all, let alone on the "on-demand" basis that the TNR would require.

AEP Texas cited to a reference on a webpage for General Motor's ElectroMotive Division to show that EMD began leasing locomotives to railroads to meet peak demand in 1987. AEP Texas Rebuttal Nar. at III-C-14 n.9. There is no reference to either the type of locomotive or the term of the lease. Moreover, AEP Texas has provided no basis to believe that whatever EMD may have done in 1987 has any relevance to market conditions decades later. AEP Texas also cited a 2001 press release by EMD and a Montana Rail Link webpage suggesting that locomotives can be leased for periods as short as "a few months" in the case of EMD and three months for Montana Rail Link. *Id.* As noted above, a multi-month lease would do the TNR no good since traffic surges may be of relatively short duration while nevertheless occurring

⁵¹ Compare AEP Texas Rebuttal Nar. at III-C-14, III-C-16 to 17 with OTP Rebuttal Nar. at III-C-40 to 41 (Public Version).

intermittently over the entire year. Nor is there any mention in either of these documents of what type of locomotives could be leased. If one follows the “Leasing” link on the Montana Rail Link webpage, however, it reveals that Montana Rail Link has nothing comparable to a SD70MAC available for lease. Instead, Montana Rail Link offers a variety of lower-power, decades-old locomotives introduced by EMD in the 1950s and 1960s: SW-12, GP-9, SD40-2, SD45, SD45-2, and F45.⁵² Finally, AEP Texas cited a 2003 *Forbes* article concerning heavy demand by grain shippers which states that “BNSF has leased 232 additional locomotives to handle the peak conditions.” AEP Texas Rebuttal Nar. at III-C-14 n.9. Again, there is no mention of either the type of locomotive leased or the term of the leases.

AEP Texas also purported to find support for its notion that SD70MACs could be leased on a short-term basis in BNSF lease documents. AEP Texas claimed that a lease between BNSF and First Union Rail Corporation demonstrates that BNSF leases some locomotives for six months or less. AEP Texas Rebuttal Nar. at III-C-15. That lease, however, concerns SD40-2 locomotives, not SD70MACs.⁵³ In addition, AEP Texas pointed to a provision in a BNSF SD70MAC lease agreement that permits BNSF to sublease SD70MACs if it so chooses. AEP Texas Rebuttal Nar. at III-C-15. All that provision does is grant BNSF the *right* to sublease; it does not demonstrate that BNSF does so, nor does it indicate what the terms of a sublease might be. Neither of the contracts offers any support for the proposition that SD70MAC locomotives could be leased on an “on-demand” basis.

The numerous flaws in AEP Texas’ new short-term lease evidence demonstrate the importance of enforcing strict limits on the submission of new evidence on rebuttal. When new

⁵² See <http://www.montanarail.com/leasing/leasing.htm> (accessed Aug. 27, 2004).

⁵³ See AEP Texas Opening workpaper pp. 8768-94, at 8793 (indicating that equipment leased was SD40-2 locomotives).

evidence is submitted on rebuttal, there is insufficient opportunity to probe the validity or relevance of the evidence. The Board should make it clear that it will not tolerate the submission of evidence on rebuttal that could have and should have been submitted on opening.

V. NEW EVIDENCE RELATING TO SARR CONSTRUCTION COSTS

In several important areas, AEP Texas submitted new evidence on rebuttal relating to the construction costs of the TNR. The Board should strike AEP Texas' Rebuttal Evidence in the following areas.

A. Land

The only land valuation dispute in this case involves the value of the TNR right-of-way ("ROW") through Denver, the most expensive land to be acquired by the TNR. AEP Texas dramatically understated the cost of Denver land on opening and then submitted extensive new evidence on rebuttal to support its unprecedented valuation methodology. The Board should strike AEP Texas' entire rebuttal discussion of the Denver ROW on grounds that it exceeds the bounds of permissible rebuttal.

On opening, AEP Texas noted that the TNR would traverse a wide variety of land through the city of Denver. *See* AEP Texas Rebuttal Exhibit III-F-2 at 25-27. According to AEP Texas, the ROW passes through both low and heavy-grade industrial areas, it skirts a major amusement park and an existing community college, and it runs alongside moderate-income apartment complexes. Notwithstanding the wide variety of land at issue in the Denver area, AEP Texas did not carry out an across-the-fence appraisal of the ROW. As the Board is aware from prior SAC cases, an across-the-fence appraisal involves a careful analysis of the specific land that would need to be acquired to form the ROW. Instead AEP Texas took a shortcut approach that produced extremely low values for the Denver ROW and resulted in a dramatic understatement of the investment needed by the TNR for land.

First, it obtained data on 1,773 land sales in the Denver area.⁵⁴ It then eliminated 1,681 of those transactions to produce a set of 92 land sales to be used in the assessment of the TNR ROW.⁵⁵ There is not a single word in AEP Texas' Opening Evidence or Exhibits about the methodology or assumptions it used to reduce its starting universe of land sales by almost 95% to produce a set of supposedly comparable sales. AEP Texas divided these 92 sales into zoning categories so that they could be compared to land on the TNR ROW with supposedly similar zoning classifications. Once again, AEP Texas' Opening Evidence did not explain how it arrived at the zoning categories for the TNR ROW. Finally, within each zoning category, AEP Texas assumed that the TNR ROW could be acquired at a value equal to the "first quartile" of the comparable sales for that zoning category.⁵⁶ The first quartile is obtained by arraying a data set from the lowest value to the highest value and identifying the number in the list as to which 25% of the data set are below. In other words, 75% of the values in a data set exceed the "first quartile" value. AEP Texas' Opening Evidence does not contain a single word describing its "quartile" approach or explaining why such an approach would be justified in the acquisition of a railroad right-of-way.

Notwithstanding the bias in AEP Texas' set of 92 supposedly comparable land sales toward low value land and the lack of any explanation of how the data set was created, BNSF accepted it as the basis for the evaluation of the Denver ROW.⁵⁷ BNSF also accepted AEP

⁵⁴ AEP Texas Opening electronic workpaper "DENVER1.xls," worksheet "DENVER."

⁵⁵ AEP Texas Opening electronic workpaper "DENVER1.xls," worksheets "I-2 (2)," "I-1 (2)," "I-0 (2)," "B-8 (2)," "B-4 (2)," "B-3," "B-2 (2)," and "R-3 (2)."

⁵⁶ *Id.*

⁵⁷ The downward bias in the data set results from the fact that all of the sales are of vacant land. In an urban area, undeveloped land tends to be the least desirable land and it tends to be located in the least desirable areas.

Texas' allocation of those sales into zoning categories and AEP Texas' assignment of the TNR ROW into comparable zones for purposes of estimating land values. The only issue BNSF contested was the use of the "quartile" approach for identifying representative land sales in a particular zoning category, since that approach looked only at the lowest value land sales in the data set. BNSF pointed out that a railroad constructing a ROW does not have the luxury of purchasing only the lowest value land in a particular area. BNSF Reply Nar. at III.F-4 to 6. It must acquire contiguous parcels of land, even if some of those land parcels are highly valued. Any approach to a railroad's ROW land acquisition that focuses exclusively on the lowest value land in a particular area would result in a patchwork of non-contiguous property that was useless for a railroad ROW. Instead of the quartile approach, BNSF proposed a straight average of the comparable land values that AEP Texas presented and used on opening as the basis for its cost assessment. *Id.*

On rebuttal, AEP Texas attempted to salvage its quartile approach with the submission of new evidence in several areas. First, it argues that the 92 land sales it presented on opening actually included some erroneous sales values and it replaces those values with "corrected" values.⁵⁸ The supposed "corrections" are made to more than one-quarter of the original 92 values, and not surprisingly, the supposedly erroneous sales included the highest value land sales in the original data set. AEP Texas then recalculates the first quartile of the revised data set and compares that to a modified simple average of the revised data set. *See* AEP Texas Rebuttal Exhibit III-F-15 at 11.

It is too late for AEP Texas to argue that the data it sponsored on opening were erroneous or to sponsor new evidence based on supposed corrections to those data since BNSF accepted the

⁵⁸ AEP Texas' Rebuttal electronic workpaper "Methodology_Comparative_Testing.xls," worksheet "Modified_Sale_Data (1)."

data as the basis for the calculation of the Denver ROW. The Board has repeatedly held that a complainant cannot modify its opening assumptions after the defendant has accepted those assumptions on reply.⁵⁹ The equitable basis for such a rule is clear in this case. If AEP Texas had suggested on opening that there was a problem with the comparable sales data it was sponsoring, BNSF would have had an opportunity to investigate the circumstances of the individual sales included in AEP Texas' set of 92 comparable sales, to investigate the other 1,681 sales that AEP Texas eliminated from its universe of comparable sales, or to try to eliminate the downward bias in the data set. BNSF had no reason to carry out such an investigation because it had no reason to believe that AEP Texas would turn around on rebuttal and repudiate the data on which AEP Texas had based its calculations. Indeed, on opening, AEP Texas appeared to stand firmly behind the Colorado sales data, noting that AEP Texas had "intensified our research efforts" in Colorado, where land values were "comparatively higher." AEP Texas Opening Exhibit III-F-2 at 15.⁶⁰

The second area in which AEP Texas exceeded the bounds of permissible rebuttal was in the presentation of a purported justification for its quartile approach. AEP Texas claims on rebuttal that a quartile approach is appropriate because such an analysis "is adept at dealing with atypical data points." AEP Texas Rebuttal Exhibit III-F-15 at 7. The Board should strike AEP

⁵⁹ *Xcel* at 49, 73, 77; *CP&L* at 79-80; *Duke/NS* at 14 n.18, 50; *TPMA* at 125, 155.

⁶⁰ Moreover, the supposed corrections that AEP Texas now sponsors to the original data are totally arbitrary. AEP Texas' methodology consists of little more than adding or subtracting a zero from the sales price or land size on transactions that AEP Texas concludes are out of the ordinary. For example, AEP Texas concludes that one sale of \$50.91 per square foot appears to be too high, so it arbitrarily assumes that the decimal point for the land size was misplaced and that the value must have been \$5.09 per square foot. *See* AEP Texas Rebuttal electronic workpaper "Methodology_Comparative_Testing.xls," worksheet "Modified_Sale_Data (1)." Whether the original data set contained errors or not, such an arbitrary approach produces data that are completely unreliable.

Texas' entire discussion of the quartile approach. AEP Texas did not say a word in support of this unusual methodology on opening. BNSF only discovered AEP Texas' use of this approach through a detailed review of AEP Texas' Opening electronic workpapers. A complainant cannot sandbag the defendant in a SAC case by withholding any description or explanation of its methodology until rebuttal.⁶¹

Fortunately, it does not take much to show that AEP Texas' defense of the quartile approach is a contrivance. AEP Texas claimed that the quartile method is well suited to an analysis of data that contains atypical values. It does not cite anything to support this claim and its own example illustrating the quartile approach belies the assertion. The data set used in AEP Texas' example contains values that range from 6 to 49. AEP Texas Rebuttal Exhibit III-F-15 at 9. It is quite clear that most of the values cluster around the mid-30s to the mid-40s. AEP Texas' quartile approach, however, produces a value of 15, which is clearly not a "representative" value for the data set. *Id.* Contrary to AEP Texas' claim, the quartile approach has actually given *more* emphasis to the "atypical" values at the low end of the range of data. If the data set presented in AEP Texas' example corresponded to the "wide variety" of land sales across Denver, it is clear that a prospective buyer of land could never prudently assume that it could acquire all land at the value represented by AEP Texas' quartile approach, even if it was buying only a single land parcel rather than a collection of land parcels needed for a ROW. AEP Texas' own example therefore illustrates the unreliability of its quartile methodology.

Perhaps recognizing the implausibility of its quartile approach, AEP Texas argued that if the Board uses an average of the comparable land sales to assess the value of the TNR ROW, it should use a weighted average instead of a straight average. AEP Texas Rebuttal Exhibit III-F-

⁶¹ See *General Procedures* at 5; *Duke/CSX* at 3.

15 at 11. Once again, it is impermissible for AEP Texas to advance a new methodology for assessing land values in Denver on rebuttal. Neither party advocated the use of a weighted average approach on opening or reply. The Board cannot accept a new weighted-average methodology on rebuttal as a substitute for AEP Texas' flawed quartile methodology.⁶²

In any event, a weighted-average approach would be improper in valuing the land needed to put together a railroad right-of-way through a developed urban area. The weighted average approach that AEP Texas advocates would weight individual land sales (after arbitrarily modifying those land sales as discussed above) by the amount of land involved in the sale. Accordingly, sales of large tracts of vacant land would be weighed more highly than sales of small tracts. This approach is inappropriate for valuing a railroad ROW in a developed urban area because it produces an estimate of land value that is weighted toward lower-value land that is not representative of the land that would be needed for the ROW.

Large land sales tend to have lower costs per square foot than smaller land sales. In addition, large tracts of vacant land in an urban area such as Denver (AEP Texas' data contain only sales of vacant land) are likely to be the most distressed and lowest value land in the area. If the land had been suitable for development, it already would have been broken up into smaller parcels. There is no reason to believe that the TNR could construct a ROW through Denver relying predominantly with the purchase of large, distressed tracks of land. AEP Texas' weighted average approach, however, gives more weight to these unrepresentative land sales. Where the land sales are particularly large (and therefore particularly unrepresentative), AEP

⁶² AEP Texas' purported weighted average land value should also be disregarded for the simple reason that it is calculated based on the modified set of comparable sales, sponsored improperly for the first time on rebuttal, as discussed above.

Texas' approach gives overwhelming weight to those sales.⁶³ While the large land sale transactions in AEP Texas' data set should not be discarded altogether in assessing the cost of the Denver ROW because some ROW land might fall into this category, large land sales should not be given an exaggerated weight by using a weighted-average methodology rather than a straight average.

There is no reliable or accurate substitute for an across-the-fence appraisal in assessing the prospective cost of a railroad ROW. However, if a simplified approach is to be used, a straight average of the set of comparable sales is the only approach that takes into account all comparable land sales in recognition of the fact that the railroad will have to acquire a wide variety of land, particularly in an urban area. By contrast, any single-point average, like the first quartile or the median, treats a single value as representative of the entire data set and therefore ignores the range of values on either side of the single point. A weighted-average approach would be appropriate only if the weighting was applied to the most representative land sales, but this requires a parcel-by-parcel analysis to determine which land sales are most representative, and neither party has carried out such an analysis here. It would clearly be inappropriate to weight the land sales toward the least representative land in the set of comparable data, as AEP Texas proposed to do here.

B. Solid Rock Excavation

AEP Texas seeks to introduce new evidence on rebuttal on the costs of solid rock excavation. This new cost evidence, which AEP Texas submitted in support of the cost

⁶³ For example, AEP Texas included six sales in the I-0 zoning category, totaling 13.2 acres. One of those sales represented 10.1 acres, thus accounting for more than three-quarters of the resulting weighted-averaged price in that category. This sale also represented the second lowest price per acre, less than one-half that of the other four sales that comprise the majority of records that AEP Texas included in the I-0 group. See AEP Texas Opening electronic workpaper "DENVER1.xls," worksheet "I-0 (2)."

assumptions it presented on opening, is not a proper response to evidence submitted by BNSF, and it should be struck as impermissible rebuttal.

In its Reply Narrative, BNSF argued that AEP Texas understated the cost of solid rock excavation because it did not include any costs for the secondary handling of oversized boulders that are the byproduct of the initial blasting of solid rock. In support of this argument, BNSF submitted a photograph from a roadway widening project in Colorado showing that the initial blasting of rock produces boulders of varying size, including boulders that could not be handled by the equipment posited by AEP Texas without secondary blasting.⁶⁴ BNSF did not submit any cost evidence relating to the Colorado project, since BNSF used RS Means costs for excavation costs, consistent with Board practice.

On rebuttal, AEP Texas purported to submit cost information for the Colorado project referred to by BNSF on reply, claiming that the solid rock excavation costs from that project support the costs that AEP Texas submitted on opening. AEP Texas Rebuttal Nar. at III-F-50 to 51. For two reasons, this cost evidence constitutes impermissible rebuttal. First, it does not respond to the evidence BNSF submitted on reply. BNSF's evidence addressed the blasting activities that are required for the construction of a roadbed, not the unit costs of those activities. Second, the cost evidence that AEP Texas submitted does not even relate to the project that BNSF discussed on reply. As noted in the attached Verified Statement of Ms. Cassandra Gouger (hereafter "Gouger V.S."), BNSF's construction cost witness, BNSF's Reply Evidence related to a roadway widening project in Black Hawk, CO, while the cost evidence submitted by AEP Texas related to a different private highway construction in nearby Central City, CO. Accordingly, AEP Texas' cost evidence actually bears no relationship at all to the evidence

⁶⁴ BNSF Reply workpaper III.F-0352 to 0354; Gouger Verified Statement (attached as Exhibit 4) at 4 and Attachment 2.

BNSF submitted on reply and it should not have been included in AEP Texas' Rebuttal Evidence.⁶⁵

Moreover, as discussed in the *Gouger V.S.*, AEP Texas' new cost evidence is highly misleading. Little information is available about the Central City project beyond the total cost of the project and a vague statement that the project involves 5.5 million cubic yards of "rock." But both parties acknowledge that rock excavation involves both loose and solid rock, and that the costs for the two activities are very different. Without knowing the amount of solid rock involved in the Central City project, it is impossible to draw any conclusions about the project costs for the excavation of *solid* rock.⁶⁶ In addition, as Ms. Gouger explains, it is clear that the 5.5 million cubic yards of excavation for the Central City project includes some common excavation in addition to the excavation of loose and solid rock, making AEP Texas' conclusions about the cost of solid rock excavation even less tenable. Ms. Gouger also explains that the sponsors of the Central City project used immense excavation equipment that achieves highly efficient excavation operations. Neither party assumed that the TNR would or could use such equipment to achieve similar economies of scale. In short, the evidence submitted by AEP Texas on the Central City project provides no basis for drawing any conclusions about the reasonableness of either parties' solid rock excavation cost assumptions in this case.⁶⁷

Ms. Gouger further demonstrates that if AEP Texas had in fact used cost data relating to the Black Hawk project that was the subject of BNSF's Reply Evidence, it would have found that those costs are fully consistent with the RS Means costs that BNSF sponsored for the TNR.

⁶⁵ *Gouger V.S.* at 3.

⁶⁶ *Id.* at 5.

⁶⁷ *Id.* at 5-6, 7 and Attachment 5.

The successful bid for excavation on the Black Hawk project was \$19.85 per cubic yard. Excavation on the Black Hawk project involves almost exclusively solid rock, since the nature of the project is to excavate a solid rock ledge adjacent to the existing highway. This bid is slightly lower than the amount assumed by BNSF for TNR solid rock construction based on RS Means: \$22.47. However, the Black Hawk bid did not include any costs for spreading or compaction, which are needed to create an embankment on the TNR construction project. When appropriate costs are added to the \$19.85 bid for these activities, the resulting amount – \$21.35 per cubic yard – is very close to the costs submitted by BNSF on reply. Thus, contrary to AEP Texas' assertion on rebuttal, the cost evidence relating to the Black Hawk project fully supports the costs posited by BNSF for solid rock excavation on the TNR.⁶⁸

C. Engineering

In its Opening Evidence, AEP Texas proposed a 6.8% additive for engineering, based on an assumption of 5% for basic engineering and 1.8% for inspection. AEP Texas Opening Nar. at 106, 110. In its Reply, BNSF submitted evidence demonstrating the inadequacy of AEP Texas' 6.8% factor. BNSF also sponsored an alternative engineering factor that was developed through a detailed analysis of the engineering activities that would be required to construct the TNR and the associated costs for those activities. BNSF showed that the engineering costs for the TNR would equal 14% of BNSF's total construction costs. BNSF Reply Nar. at III.F-263 to 277. On rebuttal, AEP Texas acknowledged that its Opening Evidence on engineering costs was inadequate in light of the Board's rejection of that same evidence in *Xcel*. AEP Texas therefore abandoned its Opening Evidence and simply adopted the 10% additive that the Board used in *Xcel*. AEP Texas Rebuttal Nar. at III-F-194.

⁶⁸ Gouger V.S. at 7-8 and Attachment 4.

AEP Texas is not entitled to sponsor a new engineering additive on rebuttal. BNSF acknowledges that the Board stated in the *Xcel* decision that “a 10% estimate is appropriate here and in future cases for the aggregate of all engineering components.” *Xcel* at 118. But it would be improper for the Board to establish engineering costs in this case solely by reference to a decision in another case. The Board has repeatedly stated that it bases SAC costs on the best evidence of record.⁶⁹ To implement that practice, the Board must examine the evidence submitted and it cannot simply adopt evidentiary determinations from other cases. In this case, there is no evidence supporting the use of a 10% engineering additive, since AEP Texas chose simply to adopt that factor from the *Xcel* decision. The best evidence of record in this case is BNSF’s evidence on the 14% engineering additive.

Moreover, AEP Texas’ use of a 10% additive violates the Board’s procedural rules governing rebuttal evidence. Under the *Duke/NS* criteria, once AEP Texas acknowledged that its Opening Evidence was inadequate, it was not entitled to posit a new number on rebuttal without first demonstrating that BNSF’s proposed costs were infeasible or incorrect. AEP Texas did not carry that burden here. Instead, AEP Texas merely referred to publications that suggest that activities such as construction stakeout and materials testing can be performed by a contractor rather than an engineer and that contractors now have available to them new modern GPS and robotic equipment that may enable them to undertake these tasks more efficiently than using traditional approaches. AEP Texas Rebuttal Nar. at III-F-200 to 203. But this evidence does not show that BNSF’s costs for activities such as construction stakeout and materials testing were

⁶⁹ See e.g., *Duke/NS* at 5, n.11 (“... the Board’s analytical process ... is to base Board decisions on the best evidence of record.”); see also, e.g., *Xcel* (best evidence of record on forecasts, locomotive spare margins, MOW staffing; and locomotive repair facility); *Duke/CSX* (accepting best evidence of record on volumes, fencing, and mobilization); *CP&L* (accepting best evidence of record for yardmasters, MOW staffing, fencing and mobilization.)

infeasible or incorrect. At most, it demonstrates that it is possible to hire a contractor to perform these services and it is possible that the contractor has invested in new technology that will allow the tasks to be performed efficiently. But AEP Texas based its construction costs on a quote from a specific contractor, and there is no evidence whatsoever indicating that the quote from that contractor includes the cost of these activities. BNSF's evidence supporting a 14% factor is the only valid evidence of record on the engineering additive in this case.

D. Ballast

On opening, AEP Texas submitted a unit cost for ballast that was determined by averaging ballast quotes from various suppliers along the SARR route to determine a single unit cost for all TNR ballast.⁷⁰ On reply, BNSF demonstrated that AEP Texas' ballast price was flawed on a number of grounds. Among other things, BNSF showed that in determining transportation costs for ballast being supplied to Sterling, CO, AEP Texas relied on a segment of railroad no longer in existence. In addition, AEP Texas used in its calculation a cost for Davis ballast that was different from the cost it had specified in its Opening Narrative. BNSF Reply Nar. at III.F-101 to 102. BNSF's Engineering Consultants provided an adjusted unit cost for ballast on reply that addressed all the flaws evident in AEP Texas' Opening unit price.⁷¹

On rebuttal, AEP Texas acknowledged that it relied on the non-existent railroad and accepted BNSF's revised transportation mileage count in recalculating the total cost of Sterling

⁷⁰ AEP Texas Opening Nar. at III-F-60; AEP Texas Opening electronic workpaper "IIIFTOTAL.xls" worksheet "BALLAST UNIT COSTS."

⁷¹ BNSF Reply Nar. at III.F-100 to 102; BNSF Reply electronic workpaper "III F TNR Construction.xls," worksheet "BALLAST UNIT COSTS." After correcting for the errors in AEP Texas' Opening unit cost, the parties' unit costs continue to differ, as BNSF's ballast price reflects transportation to an additional railhead that is required to meet AEP Texas' aggressive track laying schedule. See BNSF Reply Nar. at III.F-100-1, 125-6. While AEP Texas wrongly excludes this transportation adjustment from its Rebuttal Evidence, this issue is not addressed in this Motion.

ballast. AEP Texas also acknowledged its error in assessing the base cost for Davis ballast, and it claimed to substitute the correct cost into its calculations. However, in implementing this substitution, AEP Texas committed a further methodological error and treated the Davis base cost as a 2003 cost that needed to be indexed downward to 2000, even though AEP Texas actually extracted the Davis base cost from a 2000 BNSF price list.⁷² This resulted in a significant and improper reduction in the final unit cost AEP Texas developed to apply to the total ballast quantities for the TNR. While a complainant may accept a defendant's alternative evidence and incorporate that evidence into its rebuttal SAC calculations, it cannot be permitted to do so in a manner that incorporates new errors such as incorrect calculations.

VI. THE BOARD SHOULD STRIKE INACCURATE REFERENCES TO BNSF'S PRODUCTION OF DISCOVERY DATA ON VARIABLE COSTS

In several instances, AEP Texas alleges on rebuttal that BNSF refused to produce variable cost data that AEP Texas requested in discovery or in a workpaper request. Based on these allegations, AEP Texas asks the Board to ignore BNSF's evidence or to accept AEP Texas' clearly inferior evidence. Some of these allegations are simply a reprise of allegations made in earlier filings to which BNSF has already responded. Several new allegations are made for the first time on rebuttal. In addition to constituting improper rebuttal, AEP Texas allegations are false and misleading and should be stricken from the record

Especially troubling are two allegations regarding BNSF's production of road property data. First, AEP Texas alleges that BNSF refused to provide route-specific FADB data for the years 2001 and 2002. AEP Texas Rebuttal Nar. at II-A-17 to 18; AEP Texas Rebuttal Exhibit II-A-91 at 21 to 22. But BNSF in fact produced 2001 and 2002 FADB route-specific data in

⁷² See AEP Texas Rebuttal electronic workpaper "IIIFTOTAL.xls," worksheet "Ballast Unit Costs." The BNSF price list produced in discovery was included in AEP Texas' Opening workpaper 10750 and clearly shows that the prices are from 2000.

discovery and AEP Texas used these very data to develop its flawed adjustment to BNSF's system-average road property investment and depreciation. On opening, AEP Texas expressly states that its calculations are based on the 2001 and 2002 route-specific FADB data provided by BNSF. AEP Texas Opening Exhibits II-A-15 at 6 n.5, II-A-16 at 7 n.5.

AEP Texas also makes the false claim that BNSF refused to produce data supporting its claim that the FADB accumulated depreciation data are unusable. Specifically, AEP Texas claims that BNSF refused to produce the underlying data supporting Table 1 of Cami Elliott's Verified Statement. AEP Texas Rebuttal Exhibit II-A-91 at 21 to 22. That table shows the dramatic overstatement of accumulated depreciation by the FADB calculator and the resulting understatement of net investment on a system-wide basis using year 2000 data. AEP Texas incorrectly alleges that, in response to a workpaper request for data "supporting its Table 1 for 2000," BNSF stated that "BNSF did not consult or rely on the information or data requested in preparing reply evidence in this case." AEP Texas Rebuttal Exh. II-A-91 at 21, 21-22. AEP Texas grossly misrepresents BNSF's response. In fact, in response to AEP Texas' workpaper request for the year 2000 data underlying Table 1, BNSF pointed out that AEP Texas already had the year 2000 data.⁷³ See AEP Texas Rebuttal workpaper 0026. BNSF even identified the specific cell numbers in AEP Texas' own opening electronic workpapers where those data appear. *Id.* At best, AEP Texas' mischaracterization of the record is sloppy and irresponsible. In any event, it should be stricken as improper rebuttal.

⁷³ BNSF's statement that it "did not consult or rely on the information or data requested," was made in response to AEP Texas' workpaper request for comparable data for year 2001-2002 – data that were neither used by BNSF in calculating the year 2000 figures shown in Table 1 nor requested by AEP Texas in discovery. See AEP Texas Rebuttal workpaper 0026. Indeed, since BNSF had not used the requested data in its evidence, AEP Texas' workpaper request constituted inappropriate discovery.

Several of AEP Texas' discovery allegations that appear for the first time on rebuttal relate to data that BNSF simply does not maintain in the ordinary course of business. These allegations include AEP Texas' claims that BNSF "refused" to produce locomotive maintenance costs by unit, type, or series (AEP Texas Rebuttal Nar. at 97, 98, 103); route-specific maintenance-of-way costs (*id.* at 90); route-specific accumulated depreciation based on group life accounting (*id.* at 40); and freight car operating costs (*id.* at 49). The claim that BNSF "refused" to produce such data is misleading since BNSF does not have the data to produce. BNSF is not required to manufacture data or undertake special studies for rate cases and it would be wrong to penalize BNSF for not doing so. Moreover, to the extent BNSF had responsive data, BNSF produced that data, even where the data were clearly incomplete.

None of AEP Texas' allegations regarding discovery has any place in the evidentiary phase of this case. During discovery, the parties engaged in a Board-sponsored Technical Conference to address discovery issues. That process was intended to avoid the types of allegations that AEP Texas now makes, which are clearly intended to prejudice the Board in its assessment of the complex record created in this SAC case. AEP Texas did not raise any of these discovery issues at the Technical Conference nor did it seek to compel production of the data it claims BNSF withheld. It is entirely inappropriate for AEP Texas to sandbag BNSF with such allegations now after discovery has closed and the evidence has been filed.

VII. CONCLUSION

The Board should strike from the record of this proceeding the new evidence submitted by AEP Texas in its July 27, 2004 Rebuttal Evidence in the areas described above on grounds that such new evidence exceeds the proper scope of rebuttal.

CERTIFICATE OF SERVICE

I hereby certify that this 9th day of September, 2004, I served a copy of the foregoing

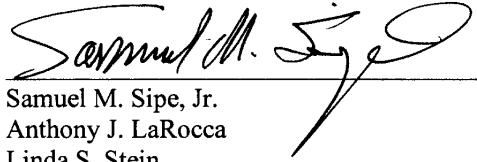
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Respectfully submitted,

A handwritten signature in black ink, reading "Samuel M. Sipe, Jr.", written over a horizontal line.

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September 9, 2004

Docket No. 41191 (Sub-No.1)

On rebuttal, AEP Texas relied upon a regional transportation rate forecast for coal

originating from Wyoming and Montana supply states (hereafter, unpublished EIA “regional” PRB transportation rate forecast)¹ in order to project revenues in the 2009-2020 period for TNR customers whose current transportation contracts have expired. This new unpublished EIA regional forecast is different than the published national EIA forecast AEP Texas used on opening and that BNSF relied upon on in reply for the period 2009 through 2020.²

My review of the unpublished EIA “regional” PRB transportation rate forecast used by AEP Texas in its rebuttal evidence uncovered numerous significant data anomalies. As the following table demonstrates, extremely large increases in rates are projected in some years by the EIA’s unpublished “regional” PRB transportation rate forecast. While projected increases in transportation rates of this order of magnitude ought to raise serious caution and concern, AEP Texas neither identified these large swings nor provided a reasoned basis for relying upon such erratic results.

¹ See AEP Texas Rebuttal electronic workpaper “TNR Coal Revenue Forecast Reb revised.xls,” worksheet “ELECTR AVG TRANSP RATE NOMINAL.”

² During that period, BNSF used the same published EIA national transportation rate forecast that AEP Texas used on opening but merely updated the national forecast to rely on the published 2004 forecast rather than the published 2003 forecast used by AEP Texas. Compare AEP Texas Rebuttal electronic workpaper “TNR Coal Revenue Forecast Reb revised.xls,” worksheet “ELECTR AVG TRANSP RATE NOMINAL” to AEP Texas Opening electronic workpaper “TNR Coal Revenue Forecast.xls,” worksheet “EIA Transportation Forecast” and BNSF Reply electronic workpaper “TNR Coal Revenue Forecast_BNSF Reply.xls,” worksheet “EIA Transportation Forecast.”

Table 1
Large Annual Increases in Transportation Rates Forecast by the PRB "Regional" Forecast
Used in AEP Texas' Rebuttal³

Demand (or Destination) Region	Year	Percentage Change
AL,MS	2005	11.60%
MT,WY,ID	2009	22.80%
MT,WY,ID	2010	17.44%
MT,WY,ID	2012	9.24%
MT,WY,ID	2014	8.33%
MT,WY,ID	2015	9.70%
MT,WY,ID	2016	11.73%
MT,WY,ID	2017	10.41%
AK,HI,WA,OR,CA	2020	8.81%
AK,HI,WA,OR,CA	2021	13.58%
CO,UT,NV	2023	35.79%
CO,UT,NV	2024	9.42%
CO,UT,NV	2025	31.37%

Furthermore, these anomalies contrast significantly to the relatively stable published national EIA transportation rate forecasts relied upon by AEP Texas on opening and BNSF on reply.⁴ For example, the EIA transportation rate forecast relied upon by AEP Texas on opening observed an average annual increase equal to 1.2 percent per year from 2002 to 2021. In addition, the projected annual rate of change did not rise above 1.94% or fall below .51% in any given year.⁵ This tight band of forecasted annual changes in the transportation rate is a stark

³ See attached BNSF electronic workpaper "BNSF summary of AEP TX T Rate assumption.xls."

⁴ This national EIA forecast is the official transportation rate forecast published in EIA's documentation of the Annual Energy Outlook. See EIA, Assumptions to the Annual Energy Outlook 2004, at 120 (dated February 2004).
[http://www.eia.doe.gov/oiaf/aeo/assumption/pdf/0554\(2004\).pdf](http://www.eia.doe.gov/oiaf/aeo/assumption/pdf/0554(2004).pdf)

⁵ See AEP Texas Opening electronic workpaper "TNR Coal Revenue Forecast.xls," worksheet "EIA Transportation Forecast." The AEP 2004 is a similarly stable forecast. The average annual increase in the AEO 2004 is approximately 1.5%. The annual increases do not exceed 2.32% or fall below -.53 percent in any given year. See attached BNSF electronic workpaper "TNR Coal Revenue Forecast Reb revised_National EIA.xls," worksheet "ELECTR AVG TRANSP RATE 2002 DOL."

contrast to the erratic nature of the outlier values identified in table 1. Furthermore, a 37 percentage point gap between the highest and lowest annual change (ranging from -2.08% to 35.79%) is exhibited by the EIA “regional” PRB transportation rate forecast relied upon by AEP Texas.⁶

Due to observing the extremely large and erratic changes in transportation rates projected by the unpublished EIA “regional” PRB transportation rate forecast used by AEP Texas on rebuttal, I sought to understand what factors caused these anomalous results. To make sure that I fully understood how EIA developed its 2004 EIA “regional” transportation rate forecast, I conducted a meeting with an EIA representative, Diane Kearney who, along with Mike Melish, is responsible for the development and implementation of the EIA transportation rate forecast. Attachment 1 to this verified statement is my notes from that meeting.

As Attachment 1 demonstrates, the 2004 unpublished EIA regional transportation rate forecast is developed by a two-tier rate adjustment. The first tier rate adjustment strictly models the changes in the transportation rates that EIA expects to observe during the forecast period, which is based on the historic average transportation rate. The second tier rate adjustment considers the changes in transportation rates that EIA expects to observe during the forecast period (also considered in tier 1), as well as many other factors that are unrelated to forecasting transportation rates, such as “the higher cost of expanding shipping distances in larger demand region” and “costs associated with use of subbituminous coal at units that were not originally designed for its use.”⁷ For example, the second tier rate adjustment attempts to capture the cost

⁶ See AEP Texas Rebuttal electronic workpaper “TNR Coal Revenue Forecast Reb revised.xls,” at worksheet “ELECTR AVG TRANSP RATE NOMINAL.”

⁷ See EIA, Assumptions to the Annual Energy Outlook 2004, at 120 (dated February 2004). [http://www.eia.doe.gov/oiaf/aeo/assumption/pdf/0554\(2004\).pdf](http://www.eia.doe.gov/oiaf/aeo/assumption/pdf/0554(2004).pdf)

incurred by a power plant switching coal origins in order to consume sub-bituminous coal, such as the investment in plant equipment to deal with the additional fuel handling issues and/or emissions. The tier 2 rate adjustment also increases the transportation cost to such a converted plant to reflect the fact that the plant will have to purchase and burn a larger quantity of coal in order to produce the same amount of electricity. This phenomenon results because sub-bituminous coal has a lower BTU content than other types of coal.⁸ EIA increases the transportation cost to the converted plant by \$1.27 per ton in 1987 dollars from the conversion point forward to estimate the cost of the conversion. These adjustments are incorporated within the transportation rate forecast only for modeling ease, not because the EIA expects the transportation rate to increase because of these factors. The tier 2 rate adjustments appear to cause the large swings in the forecasted annual change of transportation rates found in the unpublished EIA "regional" PRB transportation rate forecast and they account for the substantial increase in projected "regional" rates as compared to EIA's national rate forecast.⁹

In short, by relying on the unpublished "regional" EIA transportation rate forecast that includes the effect of the tier 2 rate adjustment, AEP Texas has dramatically overstated the transportation rate escalation inherent in its traffic and revenue forecast. Use of the unpublished EIA "regional" PRB forecast rather than the published EIA national forecast to project transportation rates to the TNR customers upon contract expiration during the post 2009

⁸ See http://www.eia.doe.gov/oiaf/servicerpt/epp/table_6.html

⁹ While the EIA makes certain "regional" adjustments (*i.e.* tier 2) to transportation rates, this is not a regionally developed forecast because the underlying regression model that develops the base escalation forecast of transportation rates is based on national indices of (1) the average cost of labor in the railroad industry, (2) the average price of fuel paid by the railroad industry, (3) the average price of railroad equipment, and (4) a railroad productivity trend. See "Forecasting *Annual Energy Outlook* Coal Transportation Rates," by Jim Watkins, 1997. A copy of this article is contained within my electronic workpapers at "EIA Coal T Rate Forecasting060797.pdf."

period has the effect of increasing AEP Texas' revenues by \$228 million (1.2 percent) over the DCF period.¹⁰

II. AEP Texas Used a New Methodology to Calculate 2003 Coal Volumes

In its Rebuttal Evidence, AEP Texas changed its methodology for calculating 2003 coal volumes. On Opening, AEP Texas based its 2003 volume assumption for the coal traffic for the TNR on a comparison of coal consumption to coal deliveries.¹¹ On reply, BNSF rejected AEP Texas' methodology, explaining that it involved a convoluted and erroneous apples-to-oranges comparison.¹² Instead, BNSF developed the 2003 volume levels for each TNR customer by reducing the 2002 volumes for each customer by { } percent, which is the percentage that BNSF coal deliveries declined between 2002 and 2003.¹³ Indeed, AEP Texas calculated this { } percent decline in BNSF volumes on opening using BNSF's data.¹⁴

On rebuttal, AEP Texas modified its methodology for calculating 2003 coal volumes to incorporate the { }% volume reduction proposed by BNSF to all plants except those that were operating at or above an 85 percent capacity factor in 2002.¹⁵ For the 13 plants that AEP Texas indicates were operating at or above the 85 percent utilization level, AEP Texas held the volumes flat at the 2002 level instead of reflecting the { }% volume reduction in 2003. AEP

¹⁰ See attached BNSF electronic workpaper "TNR Coal Revenue Forecast Revised_National EIA.xls" worksheet "SAC Rev."

¹¹ BNSF Reply Nar. at III.A-53; AEP Texas Opening electronic workpapers "SARR Traffic Group Model 12-31-2003 DELIVERED.xls," worksheets "Heat Input Growth" and "TNR Tonnage."

¹² BNSF Reply Nar. at III.A-53.

¹³ BNSF Reply Nar. at III.A-55.

¹⁴ AEP Texas Opening electronic workpapers "SARR Traffic Group Model 12-31-2003 DELIVERED.xls," worksheet "Heat Input Growth."

¹⁵ AEP Texas Rebuttal Nar. at III-A-44.

Texas' decision to hold volumes to those plants constant in 2003 is not reasonable for at least two reasons. First, there is no reason why AEP Texas should assume that a plant operating at or above an 85 percent capacity factor in 2002 will not reduce its coal deliveries in 2003 consistent with BNSF's average decline in coal deliveries in 2003. Such plants can experience the same reduced demand that other plants operating below 85 percent capacity experience. Second, by keeping the volumes to those 13 plants constant between 2002 and 2003, AEP Texas' methodology is inconsistent with the evidence that BNSF overall coal volumes declined by { } percent between 2002 and 2003.

The effect of AEP Texas' error of holding volumes to these 13 power plants constant between 2002 and 2003 instead of observing the { } percent volume decline that it applied to the other power plants (and BNSF applied to all TNR power plants) overstates 2003 volumes by almost 1 million tons. The following table summarizes the overstatement in tonnage resulting from this error.

Table 2
Summary of Tonnage Overstatement from AEP Texas' New Calculation of 2003 Coal Volumes¹⁶

Owner	Plant	Plant State	AEP Texas Rebuttal TNR Tons ¹⁷			Corrected 2003 Tons	Tonnage Overstatement
			2002	2003	Percentage Change		
{ }	{ }	CO	{ }	{ }	0.00%	{ }	{ }
{ }	{ }	MI	{ }	{ }	0.00%	{ }	{ }
{ }	{ }	NE	{ }	{ }	0.00%	{ }	{ }
{ }	{ }	TX	{ }	{ }	0.00%	{ }	{ }
{ }	{ }	MO	{ }	{ }	0.00%	{ }	{ }

¹⁶ See attached BNSF electronic workpaper "SARR Traffic Group Tonnage Model 7-12-2004-FINAL 2003 Error.xls," worksheet "2003 Error."

¹⁷ AEP Texas rebuttal electronic workpaper "SARR Traffic Group Tonnage Model 7-12-2004-FINAL.xls," worksheet "TNR Tonnage."

{	}	{	MO	{	}	{	0.00%	{	}	{	}
{	}	{	WY	{	}	{	0.00%	{	}	{	}
{	}	{	WY	{	}	{	0.00%	{	}	{	}
{	}	{	ND	{	}	{	0.00%	{	}	{	}
{	}	{	TX	{	}	{	0.00%	{	}	{	}
{	}	{	CO	{	}	{	0.00%	{	}	{	}
{	}	{	MO	{	}	{	0.00%	{	}	{	}
{	}	{	MI	{	}	{	0.00%	{	}	{	}
				32,092,657	32,092,657			31,113,831	978,826		

III. AEP Texas Used Hybrid, Made-For-Litigation RCAF Forecasts to Project Revenues During Contract Term and to Project Operating Expenses

On opening, AEP Texas used the RCAF forecasts published by DRI-WEFA (now Global Insights) in September 2003 to forecast transportation rates to the TNR customers during the remaining term of their contracts and to forecast future operating expenses to the TNR railroad.¹⁸

On reply, BNSF accepted use of those same September 2003 Global Insight forecasts to project such revenues and operating expenses.¹⁹ On rebuttal, AEP Texas used a new methodology based upon hybrid, made-for-litigation RCAF indices that were not published by Global Insight to

¹⁸ AEP Texas Opening Nar. at III-A-43 and AEP Texas Opening workpaper 07650-53, AEP Texas Opening electronic workpaper, "TNR Coal Revenue Forecast.xls" worksheet "RCAF-U Forecast" (shows AEP Texas used September 2003 Global Insight forecast to project revenues); AEP Texas Opening electronic workpaper "GlobalInsightRCAF-ex5-Table4.xls," worksheet "Ex5" (shows AEP Texas also used September 2003 Global Insight forecast to project operating expenses). AEP Texas' supposed productivity adjustment to the expected changes in the RCAF are not at issue here.

¹⁹ See BNSF Reply electronic workpaper "Exhibit III-H-1.xls," worksheet "Inflation Index."

project such revenues and operating expenses.²⁰ Specifically, on rebuttal, AEP Texas modified its revenue and operating expense forecasts by selectively “updating” forecasted RCAF indices for the first 3 quarters of 2004 based on the AAR’s updated forecast that is incorporated in the June 2004 Global Insight forecast while continuing to use the outdated September 2003 RCAF forecast for the subsequent time periods.²¹ As shown below, the new made-for-litigation methodology used by AEP Texas on rebuttal produced a substantially higher growth rate for TNR revenues and, at the same time, a *lower* growth rate for operating expenses.

With respect to AEP Texas’ projections of revenues prior to contract expiration on rebuttal, the following Table 3 demonstrates that AEP Texas’ selective, made-for-litigation RCAF forecasts result in a higher percentage increase in revenues for the stand-alone railroad than either the September 2003 Global Insight published forecast used by AEP Texas on opening and BNSF on reply, or the June 2004 Global Insight published forecast. The substantial increase appears to be the result of applying the older percentage change assumption from the September 2003 forecast as of the 4th quarter 2004 to the new, higher RCAF values from the Global Insight’s June 2004 forecast for the first three quarters of 2004.²² This results in an inappropriate apples-to-oranges combination of values from the two forecasts that renders the new, hybrid forecast meaningless. Using this hybrid, made-for-litigation forecasts causes AEP Texas rebuttal forecast of TNR revenues to be overstated annually by approximately \$8.6 million from 2004

²⁰ See AEP Texas Rebuttal (errata) electronic workpaper “Exhibit-III-G-16.xls.”

²¹ See AEP Texas Rebuttal (errata) electronic workpaper “Exhibit-III-G-16.xls.”

²² Part of the divergence in RCAF values results from the fact that the September 2003 Global Insight Forecast projected an *increase* of 1.3% while the June 2004 Global Insight Forecast projects a *decline* of 1.4% for the 4th quarter 2004. Thus, AEP Texas’ revenue forecast overstated revenues by incorporating rate increases instead of rate reductions in that quarter.

through 2020.²³

Table 3
Comparison of Global Insight Annual RCAF Forecast Assumptions to AEP Texas Annual RCAF Forecast Assumptions on Rebuttal²⁴

Year	Annual RCAF-U Forecast			Annual RCAF-A Forecast		
	Global Insight Sept. 2003 (Used in AEP TX Open/ BNSF Reply)*	AEP TX Rebuttal**	Global Insight June 2004***	Global Insight Sept. 2003 (Used in AEP TX Open/ BNSF Reply)*	AEP TX Rebuttal**	Global Insight June 2004***
2004	1.38%	3.9%	3.3%	-0.97%	1.8%	1.2%
2005	2.43%	3.9%	2.2%	0.00%	1.2%	-0.4%
2006	2.47%	2.5%	2.0%	-0.59%	-0.6%	-1.0%
2007	2.4%	2.4%	2.4%	-0.20%	-0.2%	-0.1%
2008	2.2%	2.2%	2.3%	0.39%		0.4%
2009	2.3%	2.3%	2.4%	0.39%		0.4%
2010	2.3%	2.3%	2.4%	0.20%		0.3%
2011	2.5%	2.5%	2.6%	0.39%		0.6%
2012	2.3%	2.3%	2.3%	0.39%		0.3%
2013	2.5%	2.5%	2.4%	0.39%		0.2%
2014	2.7%	2.5%	2.4%	0.39%		0.2%
2015	2.5%	2.5%		0.39%		
2016	2.5%	2.5%		0.39%		
2017	2.5%	2.5%		0.39%		
2018	2.5%	2.5%		0.39%		
2019	2.5%	2.5%		0.39%		
2020	2.5%	2.5%		0.39%		

* See AEP Texas Opening electronic workpaper, "TNR Coal Revenue Forecast.xls" worksheets "RCAF-U Forecast" rows 8-9 and "RCAF-A Forecast" rows 6-7 and BNSF Reply electronic workpaper, "TNR Coal Revenue Forecast_BNSF Reply.xls" worksheets "RCAF-U Forecast" rows 8-9 and "RCAF-A Forecast" rows 6-7. See also September 2003 Rail Cost Adjustment Factor Forecast, Global Insights, p.3. This September 2003 Global Insights forecast is included in attached BNSF electronic workpaper "Rail Cost Adjustment Forecast by Global Insight Sept 20 2003.pdf."

²³ See attached BNSF electronic workpaper "TNR Coal Revenue Forecast Reb revised_Updated RCAF Forecast.xls," worksheet "SAC Rev."

²⁴ See attached BNSF electronic workpaper "Summary of RCAF Assumptions.xls." There is an additional complication raised by AEP Texas' new methodology since AEP Texas uses both the quarterly forecasts and the annual forecasts to project revenues. Table 3 presents the annual RCAF values, but AEP Texas' quarterly RCAF values are also higher than the corresponding Global Insight quarterly RCAF values.

**** See AEP Texas Rebuttal electronic workpaper, "TNR Coal Revenue Forecast Reb revised.xls" worksheets "RCAF-U Forecast" rows 8-9 and "RCAF-A Forecast" rows 6-7.**

***** See Rail Cost Adjustment Factor Forecast, Global Insight, June 2004, p. 3. The June 2004 Global Insight forecast is included in attached BNSF electronic workpaper "RCAF2Q2004.pdf."**

While AEP Texas' use of its hybrid, made-for litigation RCAF indices overstated revenues, it understated operating expenses.²⁵ This appears to be the result of an inconsistency between the methodology used by AEP Texas on rebuttal to project the RCAF values for purposes of the revenue and operating expenses forecasts. Specifically, it appears that AEP Texas used the RCAF index values from the June 2004 Global Insights forecast for the first three quarters of 2004 which are consistent with the updated AAR forecast, but then reverts back to the projected index value for the Fourth Quarter 2004 from the September 2003 Forecast. On the revenue side, AEP Texas used the percentage change rather than the index values, thus allowing projected revenues to go up while projected operating costs went down. As a result, for purposes of projecting operating expenses, AEP Texas effectively assumes that the RCAF-U (and projected operating expenses) will fall by 2.7 percent between 3rd and 4th quarter 2004, whereas for purposes of projecting revenues, AEP Texas assumes that the RCAF-U (and projected revenues) will increase by 1.2 percent between 3rd and 4th quarter 2004.²⁶ Thus, even though AEP Texas allegedly uses the same RCAF forecast on rebuttal to project future revenues and operating expenses, it, in fact, increases revenues by a much higher percentage than it increases operating expenses. If, on rebuttal, AEP Texas had used the same RCAF-U indices to project operating expenses that it used to project revenues, the TNR operating expenses would have

²⁵ In addition, to the mathematical error in AEP Texas' operating expense calculations, AEP Texas also failed to use reflect the more current Global Insight RCAF forecast in the operating expense calculations.

²⁶ Specifically, this error results because AEP Texas failed to recalibrate its operating expense index for the post 3rd Quarter 2004 period to be based on the base quarter index (Second Quarter 2000).

been \$214 million higher than AEP Texas projected for the DCF period.²⁷

Table 4
Comparison of AEP Texas' RCAF Forecast Assumptions within the Operating Expense
Calculations and Revenue Forecast

Period	AEP Texas Opening ²⁸			AEP Texas Rebuttal ²⁹		
	Operating Expense Calculations	Revenue Forecast	Difference	Operating Expense Calculations	Revenue Forecast	Difference
2004:Q1	101.7	101.7	-	102.5	102.5	-
2004:Q2	101.7	101.7	-	103.3	103.3	-
2004:Q3	103.0	103.0	-	107.1	107.1	-
2004:Q4	104.2	104.2	-	104.2	108.3	(4.1)
2005:Q1	104.4	104.4	-	104.4	108.6	(4.2)
2005:Q2	104.6	104.6	-	104.6	108.8	(4.2)
2005:Q3	105.4	105.4	-	105.4	109.6	(4.2)
2005:Q4	106.4	106.4	-	106.4	110.6	(4.2)
			-			-
2020:Q1	150.9	149.8	1.1	150.9	155.4	(4.5)
2020:Q2	150.9	150.7	0.2	150.9	156.4	(5.5)
2020:Q3	150.9	151.6	(0.7)	150.9	157.3	(6.4)
2020:Q4	150.9	152.6	(1.7)	150.9	158.3	(7.4)

²⁷ See attached BNSF electronic workpaper "Exhibit III-H-3FP (BNSF revised1).xls."

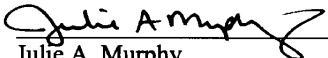
²⁸ See AEP Texas Opening electronic workpaper "TNR Coal Revenue Forecast.xls," worksheet "RCAF-U Forecast" rows 18-19 and AEP Texas Opening electronic workpaper "GlobalInsightRCAF-ex5-Table4.xls," worksheet "Ex5."

²⁹ See AEP Texas Rebuttal electronic workpaper "TNR Coal Revenue Forecast Reb revised.xls," worksheet "RCAF-U Forecast" rows 21-22 and AEP Texas Rebuttal (errata) electronic workpaper "Exhibit-III-G-16.xls."

VERIFICATION

COMMONWEALTH OF VIRGINIA)
)
CITY OF ALEXANDRIA)

I, JULIE A. MURPHY, verify under penalty of perjury that I have read the foregoing Verified Statement of Julie A. Murphy, 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.


Julie A. Murphy

Sworn to and subscribed
before me on September 8, 2004.


Janet Cashion
Notary Public for the Commonwealth of Virginia

My commission expires: September 30, 2007



**Note from Discussions with EIA Regarding the Development of its Transportation
Rate Forecast**

The following is our understanding of the steps that were taken to generate the average transportation rates per ton for the West Montana/Wyoming Supply States and various demand regions in the electricity sector shown in AEO 2004 (AEO 2004/d 101703e).

1. Base year transportation costs for the year 2002 were calculated by EIA by estimating average transportation costs for each origin mine/ destination plant pair (i.e. origin-destination pair) in a particular supply-demand region. These costs were calculated by subtracting the average mine mouth price (from the EIA Form 7A, *Coal Production Report*) from the average delivered price for a demand region,¹ for each origin-destination pair.
2. Then the rates for origin-destination pairs were weighted (on the basis of tons) for all origin-destination pairs in a particular supply-demand region to develop an average transportation rate per ton for that supply-demand region.
3. Future transportation rates in a particular supply-demand region for years subsequent to 2002 were developed by a two-tiered approach.
 - a. Tier 1 rate adjustment: The transportation rate escalation, referred to as tier 1, applies a regression analysis, similar to the regression described in the Jim Watkins paper "Forecasting *Annual Energy Outlook* Coal Transportation Rates." The equation used for forecasting future changes in historic average transportation rates in tier 1 specifies that the average price that shippers pay to transport coal is a function of (1) the average cost of labor in the railroad industry, (2) the average price of fuel paid by the railroad industry, (3) the average price of railroad equipment, and (4) a railroad productivity trend. The EIA uses a log-linear equation for forecasting the coal transportation rate index factor.

¹ This data comes from a combination of sources including Form EIA-3, *Quarterly Coal Consumption Report - Manufacturing Plants*, Form EIA-5, *Quarterly Coke Consumption and Quality Report, Coke Plants*, Form EIA-423, *Monthly Cost and Quality of Fuels for Electric Plants Report*, FERC Form 423, *Monthly Cost and Quality of Fuels for Electric Plants*, and the U.S Bureau of the Census's Monthly Report EM-545.

This tier 1 change in rail transportation rates per ton is applied to all 143 supply-demand region base-year transportation rates across all sectors.

b. Tier 2 rate adjustment: EIA recognizes that over time, existing coal supply contracts expire, new demand points will come on line (*e.g.*, a new power plant), and mine mouth prices in various supply regions will change at different rates (as a function of both changes in mining costs and economies of scale). The combined effects of these changes can cause shifts in the average length of haul within a given supply - demand region, and/or changes in the mix of supply regions that move coal to a particular demand region.

In addition to the transportation rate escalation described in the tier 1 adjustment, the tier 2 adjustment may include one or both of the following two types of projected changes in a particular supply-demand region: (1) A change in the average length of haul that coal is expected to be transported in a particular supply-demand region. For example, if EIA had evidence that a new power plant is likely to be built in a particular supply-demand region and, as a result of the location of the new plant, the average length of haul for coal in that region is expected to increase, EIA increased the average projected rate in that supply-demand region to reflect the increased average length of haul. (2) Conversion of a plant in a supply-demand region to allow that plant to burn sub-bituminous coal, like PRB coal, for the first time. Specifically, if the EIA had evidence that a plant in a particular supply-demand region would be converting to use sub-bituminous coal, the EIA increased the transportation rate to that plant to reflect the estimated cost of the conversion, which included the cost of additional plant specific equipment related costs, and the higher transportation costs per BTU reflecting the larger quantities of coal required by the lower BTU content per ton of sub-bituminous coal. This conversion cost was estimated by EIA to be \$1.27 per ton in 1987 dollars, which was added to the transportation rate to the particular plant being converted (and thus affected the weighted-average transportation rate for that supply-demand region) from the conversion point forward.²

² EIA recognizes that this sub-bituminous conversion cost does not actually represent a change in rail transportation rates. It is part of the tier 2 transportation rate adjustment *only* because this is the most feasible place to enter this cost component into the calculation of delivered costs.

These factors, in turn, could affect the relative cost of supplying different categories of demand in a given demand region from various supply regions, which could affect the mine mouth price in a particular supply region (due to changes in production scale) and the cost of transporting coal, which in turn could affect the relative cost vis-à-vis competing supply regions and so on. Thus, once each of the supply, price and demand factors was forecast for a given year, EIA iteratively ran a linear programming model within the coal market module that simultaneously matched coal supply costs at the calculated production scale, transportation costs and demand until convergence was achieved with respect to equilibrium prices to all demand sectors, thereby minimizing the total delivered cost of coal across all supply region/demand region combinations across all sectors and for export.

4. Once this entire iterative process was completed, the EIA model produced what it refers to as “Average Transportation Rates Per Ton for the Electricity Sector” for each of the 143 supply-demand regions. These data were not officially published by EIA but are available upon request. These average transportation rates reflected the combined effects of tier 1 and tier 2 rate adjustments, and the non-transportation effects of the iterative linear programming model, including the possibility of plants shifting coal origins.

**BEFORE THE
SURFACE TRANSPORTATION BOARD**

AEP TEXAS NORTH COMPANY,	)	
	)	
Complainant,	)	
	)	
v.	)	Docket No. 41191 (Sub-No. 1)
	)	
THE BURLINGTON NORTHERN AND SANTA FE RAILWAY COMPANY,	)	
	)	
Defendant.	)	

VERIFIED STATEMENT OF DAVID R. WHEELER

I am David R. Wheeler. I am the founder and President of Rail Network Analytics. My business address is 9222 Nottingham Way, Mason, Ohio 45040.

I received a Bachelor of Science degree in engineering and computer science from Merrimack College in 1985. In 1992, I received a Masters of Business Administration degree in finance and operations management from Miami University. My qualifications are further described in BNSF's May 24, 2004 Reply Evidence in this proceeding, in which I submitted evidence relating to the Rail Traffic Controller ("RTC") model.

In the context of this filing, I was requested by BNSF to evaluate a new RTC simulation submitted by AEP Texas as part of its Rebuttal Evidence. In particular, I reviewed AEP Texas' treatment of unplanned track outages and maintenance events ("random failures") in its new RTC simulation and certain manual adjustments that AEP Texas made in the operation of the model. I also identified the trains that were included in AEP Texas' new RTC simulation.

With respect to random failures, I compared the real-world random failures I used in

programming BNSF's Reply RTC model to the much more limited set of failures used by AEP Texas in its Rebuttal RTC model. While BNSF used 137 failures over the course of the simulation period on reply, AEP Texas accepted only 13 of those events on rebuttal. Attachment 1 to this statement is a list of the 13 random failures used by AEP Texas. Attachment 2 to this statement shows the random failures used in the BNSF Reply RTC model. Attachment 3 contains a comparison of BNSF random failures with those accepted by AEP Texas in their Rebuttal.

I tested the AEP Texas Rebuttal RTC model to determine whether it would run to completion if the BNSF random failure data were used rather than the more limited set accepted by AEP Texas. To do this, I programmed the list of random failures contained in Attachment 2 into the AEP Texas Rebuttal RTC model. As was the case with BNSF's Reply RTC model, I did not specify as part of this programming that particular trains would be delayed. Rather, I programmed the location and duration of the event and let the RTC model determine whether any delays for trains would be caused.¹ I did not make any other changes to the AEP Texas Rebuttal RTC model. When the AEP Texas Rebuttal RTC model was run using BNSF random failure data, the simulation ended in gridlock.²

I also evaluated the manual delays that AEP Texas specified for some trains in its Rebuttal RTC model. The adjustments are identified in AEP Texas' Rebuttal electronic workpaper "Rebuttal Dispatching Adjustments.doc." These adjustments were a new

¹ For BNSF's Reply RTC model, this meant that in some cases a random failure did not result in any train delays. For example, it is possible to see by watching the animation in BNSF's Reply RTC model that the 124th failure event (a broken knuckle failure that occurs at 9:45 on the 3rd Sunday of the simulation near Boise City) did not result in any delays.

² The electronic workpapers for this modified run of the AEP Texas Rebuttal RTC model are contained in BNSF Motion to Strike electronic workpaper "BNSFmaintenance.zip."

methodology that AEP Texas introduced on rebuttal. Moreover, they were necessary for the AEP Texas Rebuttal RTC model to run to completion. I confirmed that when the adjustments were eliminated, the simulation ended in gridlock, even if all other assumptions were left unchanged.³

AEP Texas asserts that the adjustments “amounted to an average of about one train per day over the 19 days simulated.” AEP Texas Rebuttal Nar. at III-C-55. This statement is misleading and understates the real impact of the adjustments. Attachment 4 to this Verified Statement plots the number of adjustments by day during the simulation period. It shows that 15 of the 19 adjustments (or 78.9 percent) were made during the 7-day peak week. The peak week was, of course, the period actually being modeled and the remaining days were the warm-up and cool-down period for the model. On the second day of the peak week (July 2), AEP Texas adjusted 5 trains, and on the fourth (July 4) and fifth (July 5) days of the peak week AEP Texas adjusted four trains each day. Attachment 5 to this Verified Statement shows the location at which a manual delay was imposed on each of the “adjusted” trains and the length of the hold placed on that train.

AEP Texas maintains that the manual adjustments are similar to what a real-world dispatcher would do, but this is not the case. According to AEP Texas, “Messrs. Reistrup and Schuchmann used the simulation to determine what trains were ‘snarled’ and the time and location. They would then select one of the trains involved and hold it on the TNR system for an amount of time sufficient to remove it from the snarl and permit the program to continue

³ The electronic workpapers for this modified run of the AEP Texas Rebuttal RTC model are contained in BNSF Motion to Strike electronic workpaper “Noadjustments.zip.” I also confirmed that when the model was run including the BNSF random failures and excluding the manual adjustments it ended in gridlock. See BNSF Motion to Strike electronic workpaper “NoadjBNSFmaint.zip.”

dispatching the trains.” AEP Texas Rebuttal Nar. at III-C-55. This statement implies that AEP Texas held the trains at or near the location of the “snarl” until the snarl was relieved and the train could move on. As Attachment 5 shows, however, AEP Texas actually held each train where it entered the TNR network, not at the location of snarl.⁴ In other words, AEP Texas’ experts ran the RTC model to identify trains involved in congestion, then reset the time the train entered the network by holding it at its origination point on the network, then reran the RTC to determine whether the particular “snarl” caused by the adjusted train had been relieved and the RTC could be run to completion without gridlock.⁵

This process is in no way similar to what a real-world dispatcher does. A real-world dispatcher does not have perfect foresight to know that a particular train will encounter congestion at a specified time and place down the line. A real-world dispatcher also cannot travel backwards in time and decide to hold a train at a convenient point because a model has foretold that the train will encounter congestion due to meets, passes, or unexpected outages if he does not. Nor does the real-world dispatcher have the ability to run repeated tests on the real-world network to determine if his decision to hold a train for a particular time at a particular point will relieve congestion.

As a final part of my analysis, in order to enable BNSF witnesses Robert J. Plum and David T. Witherspoon to evaluate whether AEP Texas had included sufficient traffic in its model, I determined what trains AEP Texas had actually modeled in its Rebuttal RTC

⁴ Four empty coal trains returning from the Holcomb plant were held at the Las Animas yard, 0.4 miles from the point at which they were interchanged to the TNR by BNSF.

⁵ A “snarl” cannot be resolved while the RTC simulation is running by holding a train part way through a simulation. Instead, the simulation is aborted after gridlock, the “hold” is hard coded into the simulation and the simulation is started over. This iterative process is not possible in the real world of railroading.

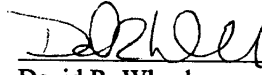
simulation. I provided this list of the trains modeled by AEP Texas to Messrs. Plum and Witherspoon and it is included as Attachment 2 to the Verified Statement of Robert J. Plum and David T. Witherspoon. I created the list by running the AEP Texas' RTC case files through the RTC model and simply summarized the detailed "ROUTE" output file produced by RTC. I included descriptive information about the trains (empty cars, loaded cars, origin and destination) from the RTC "TRAIN" file.

Verification of David R. Wheeler

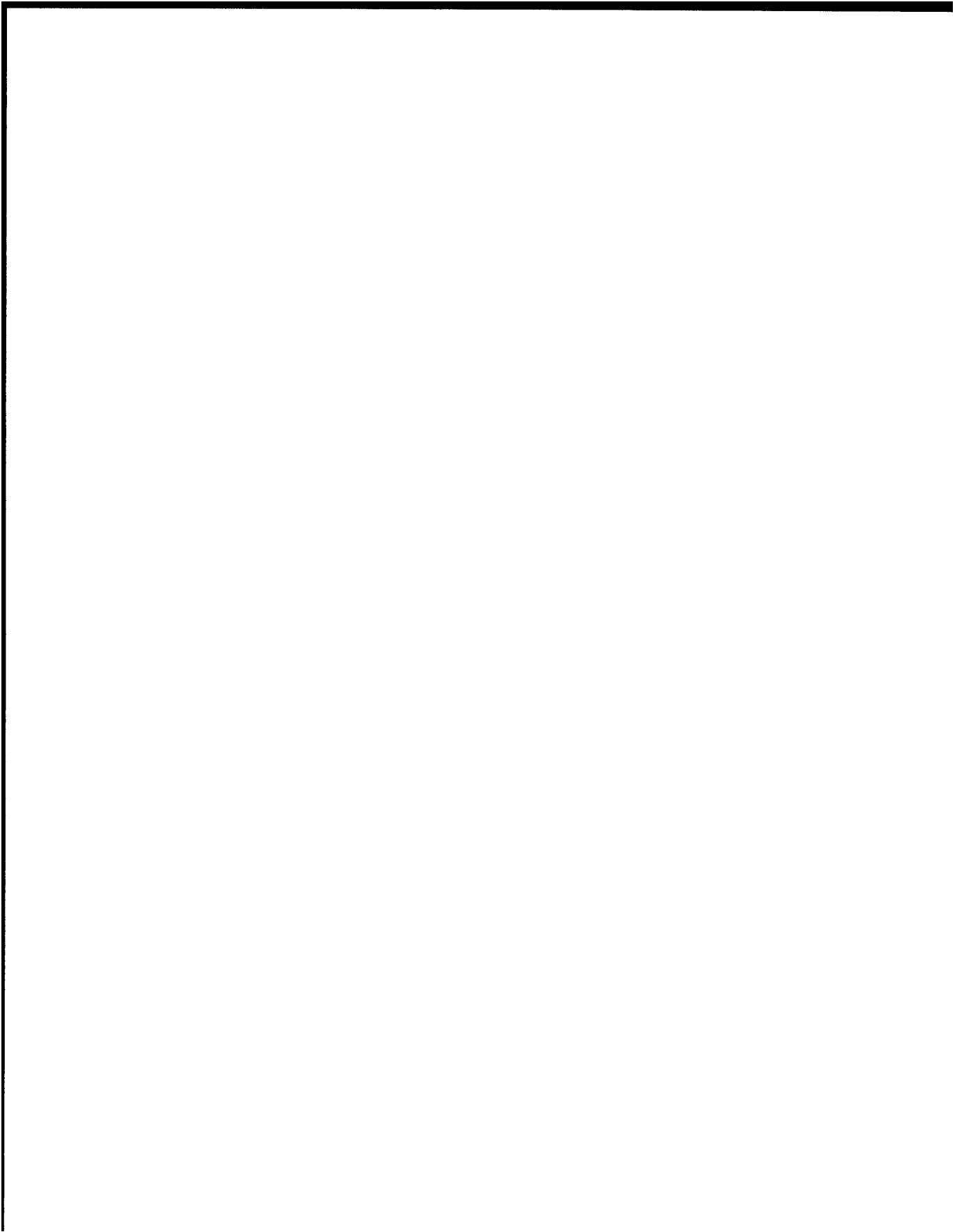
I, David R. Wheeler, verify under penalty of perjury that the foregoing is true and correct.

Further, I certify that I am qualified and authorized to file this Verified Statement.

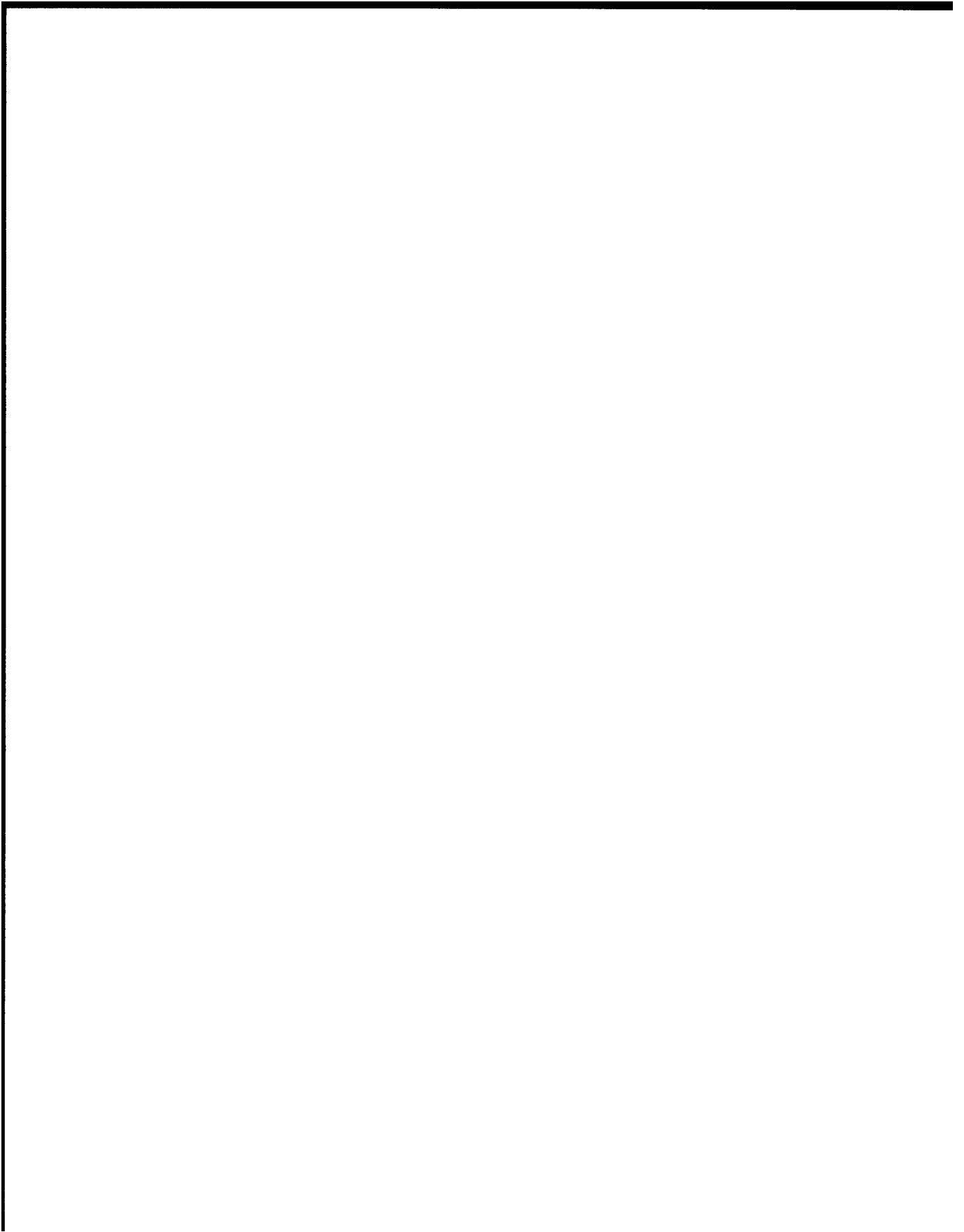
Executed on September 1, 2004



David R. Wheeler



----- R T C 2.60 FORM B FILE									
Subdivision	Beginning Field MP	Ending Field MP	Trk #	Starting Time	Ending Time	Psg	Exp	Frt	Description
xxxxxxxxxxxxxxxxxxxx	xxxxxxxx.xxxx	xxxxxxxx.xxxx	xxxxx	DD:HH:MM:SS--	--DD:HH:MM:SS--	xxx	xxx	xxx	xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
La Junta	534.94	535.7	1	18:13:30:00	18:16:55:00	0	0	0	DERAILMENT
Angora	27.6	30.2	1	12:02:00:00	12:02:50:00	0	0	0	FIRE
Angora	68.96	69.01	1	7:18:52:00	7:20:24:00	10	10	10	HIGH HEAT, CTC FAILURE
Black Hills	482.6	484.25	2	13:20:40:00	13:22:00:00	0	0	0	SIGNAL
Brush	501.3	503.69	1	9:02:55:00	9:06:55:00	0	0	0	TRAIN FAILURE
Butte	409.15	409.85	1	12:01:15:00	12:02:30:00	0	0	0	SIGNAL
Butte	409.15	409.85	AUX	12:01:15:00	12:02:30:00	0	0	0	SIGNAL
Butte	409.15	409.85	AUX	12:01:15:00	12:02:30:00	0	0	0	SIGNAL
Campbell	4.7	6	1	12:03:05:00	12:04:35:00	0	0	0	WAYSIDE FIRE
Orrin	28.3	30	1	12:05:57:00	12:08:04:00	10	10	10	SIGNAL BULB
PikesPeak	27.4	29.7	1	12:09:40:00	12:12:32:00	0	0	0	BROKEN RAIL
PikesPeak	35.84	37.34	1	16:16:00:00	16:16:30:00	0	0	0	WAYSIDE FIRE
PikesPeak	35.84	37.34	S	16:16:00:00	16:16:30:00	0	0	0	WAYSIDE FIRE
PikesPeak	53.3	56.5	1	16:07:20:00	16:08:05:00	0	0	0	POWER LINE
Boise City	173.8	174.4	1	11:12:42:00	11:15:11:00	10	10	10	DETECTOR ALARM
Red River Valley	166.4	168	1	9:09:30:00	9:12:15:00	0	0	0	TRAIN FAILURE
Red River Valley	292.3	295.2	1	8:17:15:00	8:18:55:00	0	0	0	BRAKE RIG



BNSF REPLY RTC RANDOM FAILURES

Wheeler VS Attachment 2
Page 1 of 4

EVENT #	Subdivision	Beginning Field MP	Ending Field MP	Trk #	Starting Time	Ending Time	Psg -xxx-	Exp xxx-	Frt xxx-	Description	TZ
1	La Junta	534.94	535.7	1	18:13:30:00	18:16:55:00	0	0	0	DERAILMENT	MT
2	Angora	0.7	0.75	1	17:14:41:00	17:20:18:00	10	10	10	SWITCH POINTS	MT
3	Angora	13.62	15.5	1	15:17:55:00	5:19:15:00	10	10	10	SWITCH POINTS	MT
4	Angora	27.6	30.2	1	12:02:00:00	12:02:50:00	0	0	0	FIRE	MT
5	Angora	27.6	30.2	1	13:04:55:00	13:06:45:00	0	0	0	LOCO	MT
6	Angora	30.2	32	1	18:13:10:00	8:15:30:00	0	0	0	KNUCKLE	MT
7	Angora	34.4	36.74	1	11:17:56:00	11:19:36:00	10	10	10	SWITCH POINTS	MT
8	Angora	43.1	43.54	1	14:21:47:00	5:02:52:00	10	10	10	SIGNAL BULB	MT
9	Angora	56.33	57.83	1	12:16:50:00	12:19:43:00	10	10	10	SWITCH POINTS	MT
10	Angora	56.33	57.83	S	12:16:50:00	12:19:43:00	10	10	10	Track Maintenance	MT
11	Angora	56.33	57.83	1	15:03:00:00	15:04:20:00	0	0	0	BROKEN KNUCKLE	MT
12	Angora	57.88	60.6	1	12:15:05:00	12:16:45:00	0	0	0	LOCO FAILURE	MT
13	Angora	60.6	62.3	1	17:16:39:00	7:21:28:00	10	10	10	SWITCH POINTS	MT
14	Angora	68.96	69.01	1	17:18:52:00	7:20:24:00	10	10	10	HIGH HEAT, CTC FAILURE	MT
15	Angora	68.96	69.01	1	18:18:50:00	18:21:20:00	10	10	10	SWITCH MACHINE	MT
16	Black Hills	482.6	484.25	1	13:20:40:00	13:22:00:00	10	10	10	Track Maintenance	MT
17	Black Hills	482.6	484.25	2	13:20:40:00	13:22:00:00	0	0	0	SIGNAL	MT
18	Black Hills	492.9	494.6	1	14:17:00:00	4:20:37:00	10	10	10	Track Maintenance	MT
19	Black Hills	492.9	494.65	2	14:17:00:00	4:20:37:00	10	10	10	Track Maintenance	MT
20	Black Hills	497.9	499.6	1	15:05:20:00	5:06:38:00	10	10	10	Track Maintenance	MT
21	Black Hills	497.9	499.6	2	15:05:20:00	5:06:38:00	10	10	10	Track Maintenance	MT
22	Black Hills	528.75	530.7	2	18:18:50:00	9:20:45:00	10	10	10	Track Maintenance	MT
23	Black Hills	528.8	530.7	1	19:18:50:00	9:20:45:00	0	0	0	Track Maintenance	MT
24	Black Hills	534.1	534.15	1	10:16:59:00	10:21:19:00	10	10	10	Track Maintenance	MT
25	Black Hills	534.1	534.15	2	10:16:59:00	10:21:19:00	10	10	10	Track Maintenance	MT
26	Black Hills	547.15	547.2	1	14:16:03:00	14:20:45:00	10	10	10	Track Maintenance	MT
27	Black Hills	547.15	547.2	2	14:16:03:00	14:20:45:00	10	10	10	Track Maintenance	MT
28	Black Hills	547.3	549.4	1	11:10:59:00	11:14:14:00	10	10	10	Track Maintenance	MT
29	Black Hills	547.3	549.4	2	11:10:59:00	11:14:14:00	10	10	10	Track Maintenance	MT
30	Black Hills	556.25	556.3	1	19:15:53:00	9:18:39:00	10	10	10	Track Maintenance	MT
31	Black Hills	556.25	556.3	1	19:18:54:00	9:20:07:00	10	10	10	Track Maintenance	MT
32	Black Hills	556.3	558.3	2	19:15:53:00	9:18:39:00	10	10	10	Track Maintenance	MT
33	Black Hills	556.3	558.3	2	19:18:54:00	9:20:07:00	10	10	10	Track Maintenance	MT
34	Black Hills	562.05	563.8	2	13:15:45:00	13:18:30:00	0	0	0	LOCO FAILURE	MT
35	Black Hills	567.1	568.95	1	17:16:30:00	7:20:37:00	10	10	10	Track Maintenance	MT
36	Black Hills	567.1	568.95	2	17:16:30:00	7:20:37:00	10	10	10	Track Maintenance	MT
37	Black Hills	576.5	576.55	1	19:20:53:00	9:21:06:00	10	10	10	Track Maintenance	MT

BNSF REPLY RTC RANDOM FAILURES

Wheeler VS Attachment 2
Page 2 of 4

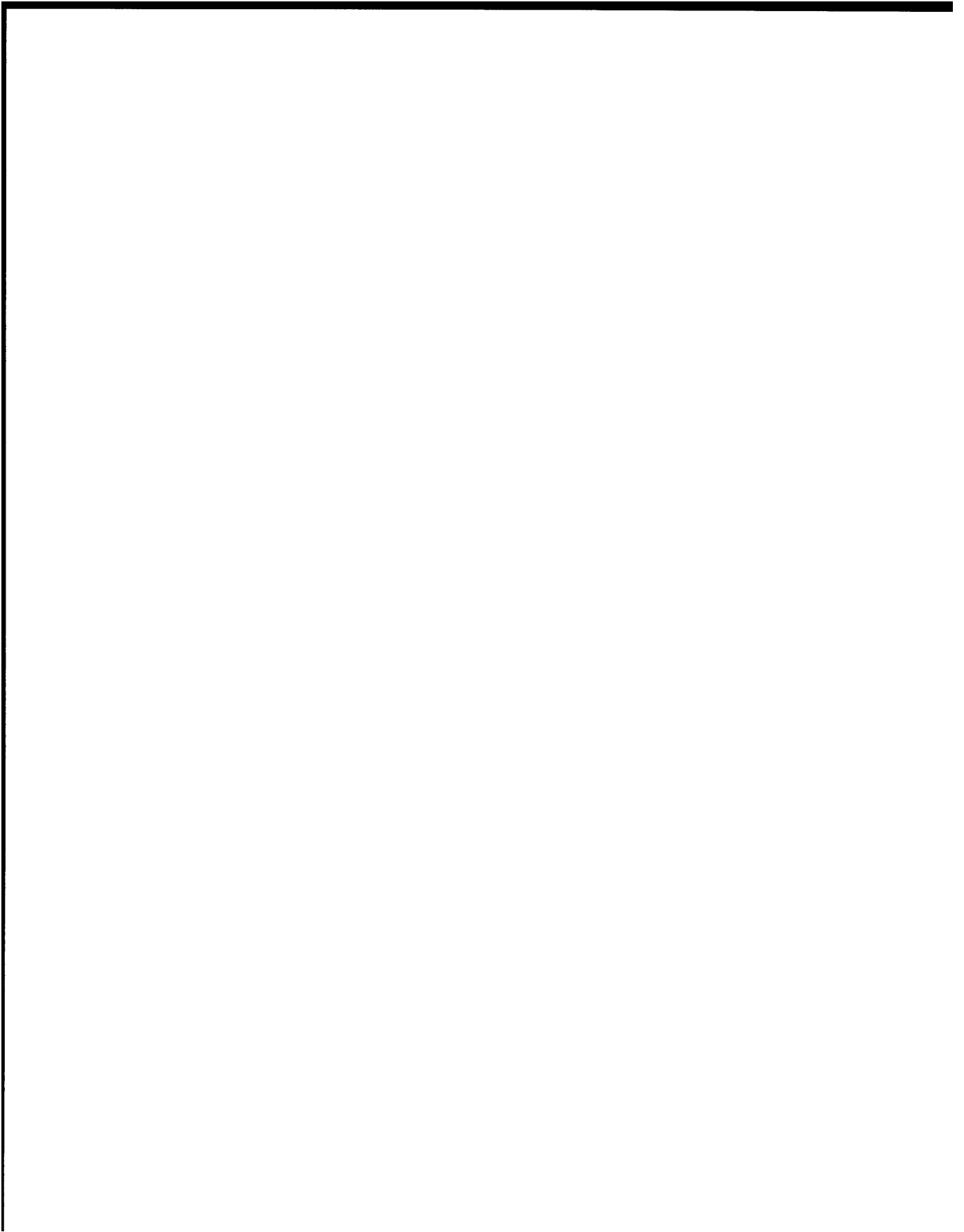
EVENT #	Subdivision	Beginning Field MP	Ending Field MP	Trk #	Starting Time	Ending Time	Psg xxx-	Exp xxx-	Frt xxx-	Description	TZ
	xxxxxx	xxxxxx	xxxxxx	xxxxxx	DD:HH:MM:SS	D:HH:MM:SS	-xxx-	---	---	xxxxxxxxxxxxxxxxxxxxxxxxxxxx-	-----
38	Black Hills	576.5	576.55	2	9:20:53:00	9:21:06:00	10	10	10	Track Maintenance	MT
39	Black Hills	586.4	587.15	1	9:21:52:00	9:22:39:00	10	10	10	Track Maintenance	MT
40	Black Hills	586.4	587.15	1	14:16:03:00	14:20:45:00	10	10	10	Track Maintenance	MT
41	Black Hills	587.15	587.2	1	15:15:03:00	5:17:18:00	10	10	10	Track Maintenance	MT
42	Black Hills	589.95	590	1	15:18:18:00	15:19:27:00	10	10	10	Track Maintenance	MT
43	Brush	140.55	141.2	1	12:21:04:00	12:22:12:00	10	10	10	Track Maintenance	MT
44	Brush	464.3	467.3	1	14:08:42:00	14:09:59:00	10	10	10	Track Maintenance	MT
45	Brush	474.8	477.8	1	13:18:38:00	13:22:02:00	10	10	10	Track Maintenance	MT
46	Brush	474.8	477.8	1	14:13:21:00	14:16:39:00	10	10	10	Track Maintenance	MT
47	Brush	474.8	477.8	1	14:16:40:00	14:17:37:00	10	10	10	Track Maintenance	MT
48	Brush	498.5	501.3	1	12:05:41:00	12:07:36:00	10	10	10	Track Maintenance	MT
49	Brush	501.3	503.69	1	19:02:55:00	9:06:55:00	0	0	0	TRAIN FAILURE	MT
50	Brush	511.3	513	1	19:07:42:00	9:10:57:00	10	10	10	Track Maintenance	MT
51	Brush	539.6	540.7	1	15:08:33:00	15:10:47:00	10	10	10	Track Maintenance	MT
52	Butte	365.9	366.1	1	17:03:17:00	7:06:55:00	10	10	10	SWITCH POINTS	MT
53	Butte	365.9	366.1	1	15:22:16:00	15:22:53:00	10	10	10	Track Maintenance	MT
54	Butte	374.4	376.15	2	16:19:25:00	6:20:38:00	10	10	10	TRACK CURRENT	MT
55	Butte	374.4	376.15	2	16:19:25:00	6:20:38:00	10	10	10	TRACK CURRENT	MT
56	Butte	383	384.6	1	15:17:44:00	5:20:16:00	10	10	10	SWITCH POINTS	MT
57	Butte	383	384.6	2	5:17:44:00	5:20:16:00	10	10	10	SWITCH POINTS	MT
58	Butte	383	384.6	2	14:19:20:00	14:20:20:00	0	0	0	LOCO FAILURE	MT
59	Butte	391.3	392.05	1	17:20:43:00	7:22:34:00	10	10	10	SWITCH POINTS	MT
60	Butte	391.3	392.05	2	17:20:43:00	7:22:34:00	10	10	10	SWITCH POINTS	MT
61	Butte	399.8	400.2	1	11:11:40:00	11:13:59:00	10	10	10	RED SIGNAL	MT
62	Butte	409.15	409.85	1	12:01:15:00	12:02:30:00	0	0	0	SIGNAL	MT
63	Butte	409.15	409.85	AUX	12:01:15:00	12:02:30:00	0	0	0	SIGNAL	MT
64	Butte	409.15	409.85	AUX	12:01:15:00	12:02:30:00	0	0	0	SIGNAL	MT
65	Butte	418.8	419.85	1	17:20:43:00	7:22:34:00	10	10	10	SWITCH POINTS	MT
66	Butte	418.8	419.85	2	17:20:43:00	7:22:34:00	10	10	10	SWITCH POINTS	MT
67	Butte	418.8	419.85	3	17:20:43:00	7:22:34:00	10	10	10	SWITCH POINTS	MT
68	Butte	422.9	422.95	1	14:03:48:00	14:04:13:00	10	10	10	Track Maintenance	MT
69	Butte	422.9	422.95	2	14:03:48:00	14:04:13:00	10	10	10	Track Maintenance	MT
70	Butte	422.9	422.95	3	14:03:48:00	14:04:13:00	10	10	10	Track Maintenance	MT
71	Butte	422.9	422.95	1	15:17:02:00	15:22:41:00	10	10	10	Track Maintenance	MT
72	Butte	422.9	422.95	2	15:17:02:00	15:22:41:00	10	10	10	Track Maintenance	MT
73	Butte	422.9	422.95	3	15:17:02:00	15:22:41:00	10	10	10	Track Maintenance	MT
74	Butte	423.55	423.6	1	18:22:41:00	19:00:13:00	10	10	10	Track Maintenance	MT

[illegible]

BNSF REPLY RTC RANDOM FAILURES

Wheeler VS Attachment 2
Page 4 of 4

EVENT #	Subdivision	Beginning Field MP	Ending Field MP	Trk #	Starting Time	Ending Time	Psg -xxx-	Exp xxx-	Frt xxx-	Description	TZ
	xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx	xxxxxx.xxx-	xxxxxx.xxx-	xxxxx--	DD:HH:MM:SS	D:HH:MM:S	--	--	--	xxxxxxxxxxxxxxxxxxxxxxxxxxxx-	---
112	PikesPeak	53.3	56.5	1	16:07:20:00	16:08:05:00	0	0	0	POWER LINE	MT
113	PikesPeak	56.5	56.55	1	18:07:21:00	18:11:25:00	10	10	10	TRANSFORMER	MT
114	PikesPeak	63.9	66.8	1	19:16:42:00	9:23:07:00	10	10	10	SWITCH POINTS	MT
115	PikesPeak	72.3	74.6	1	17:05:03:00	7:07:56:00	10	10	10	ELECTRIC LOCK	MT
116	PikesPeak	82.6	85.1	1	11:00:23:00	11:04:26:00	10	10	10	WIRE ON TRACK	MT
117	PikesPeak	85.1	86.3	1	14:20:31:00	14:22:52:00	10	10	10	REBAR ON TRACK	MT
118	PikesPeak	93.8	94.9	1	18:05:35:00	8:07:30:00	0	0	0	BROKEN KNUCKLE	MT
119	PikesPeak	117.8	118.4	1	16:16:53:00	16:19:21:00	10	10	10	BREAKER	MT
120	Pueblo	568.3	570	1	13:16:15:00	13:20:09:00	0	0	0	BROKEN RAIL	MT
121	Pueblo	586	589	1	18:05:30:00	8:07:30:00	0	0	0	BROKEN KNUCKLE	MT
122	Pueblo	600.6	603.21	1	15:16:06:00	15:20:19:00	10	10	10	TRACK BOND	MT
123	Boise City	0.95	1	1	15:10:28:00	15:11:58:00	10	10	10	TRACK INDICATION	MT
124	Boise City	106.6	109.7	1	15:09:45:00	15:10:45:00	0	0	0	BROKEN KNUCKLE	MT
125	Boise City	173.8	174.4	1	11:12:42:00	11:15:11:00	10	10	10	DETECTOR ALARM	MT
126	Red River Valley	155.7	156.75	1	13:23:59:00	14:02:04:00	10	10	10	Track Maintenance	MT
127	Red River Valley	166.4	168	1	9:09:30:00	9:12:15:00	0	0	0	TRAIN FAILURE	MT
128	Red River Valley	168	171	1	15:13:35:00	15:14:40:00	0	0	0	BROKEN KNUCKLE	MT
129	Red River Valley	189.1	191.8	1	11:23:50:00	12:04:21:00	10	10	10	Track Maintenance	MT
130	Red River Valley	222.2	222.25	1	15:08:21:00	15:14:07:00	10	10	10	Track Maintenance	MT
131	Red River Valley	235.86	237.36	1	15:08:59:00	15:12:23:00	10	10	10	Track Maintenance	MT
132	Red River Valley	243	246	1	11:12:14:00	11:15:30:00	10	10	10	Track Maintenance	MT
133	Red River Valley	273	275.7	1	11:11:32:00	11:15:29:00	10	10	10	Track Maintenance	MT
134	Red River Valley	289.43	291.5	1	9:09:06:00	9:11:15:00	0	0	0	Track Maintenance	MT
135	Red River Valley	292.3	295.2	1	18:17:15:00	8:18:55:00	0	0	0	BRAKE RIG	MT
136	Red River Valley	302	303.87	1	10:04:48:00	10:07:19:00	10	10	10	Track Maintenance	MT
137	Red River Valley	317.7	318.47	1	12:02:59:00	12:05:41:00	10	10	10	Track Maintenance	MT



For example, July 3, 2002 Daily Performance Report: C055... Powder River Div, Angora Subdiv. C.BTMSKO44 at MP 30. Reported second locomotive RN 9625 failed account low water. E BENBTMO 30 cut off the power at Angora and pulled this train to Bonner. Dailys CBTMSKO44 0150 (hrs). EMEK

sol:weeds 4404 44 000000 = 000000

COMPARISON OF TRACK OUTAGES: AEP REBUTTAL VERSUS BNSF REPLY RTC CASES

Subdivision	Beginning Field MP	Ending Field MP	Trk #	Starting Time	Ending Time	Psg	Exp	Frt	Description	TZ
	-xxxxx.xxx-	-xxxxx.xxx-	-xxxxx-	DD:HH:MM:SS-	DD:HH:MM:SS-	-xxx-	xxx-	xxx-	xx	-----
BNSF REPLY FOR BLACK HILLS SUB										
Black Hills	482.6	484.25	1	13:20:40:00	13:22:00:00	10	10	10	10 Track Maintenance	MT
Black Hills	482.6	484.25	2	13:20:40:00	13:22:00:00	0	0	0	0 SIGNAL	MT
Black Hills	492.9	494.6	1	4:17:00:00	4:20:37:00	10	10	10	10 Track Maintenance	MT
Black Hills	492.9	494.65	2	4:17:00:00	4:20:37:00	10	10	10	10 Track Maintenance	MT
Black Hills	497.9	499.6	1	5:05:20:00	5:06:38:00	10	10	10	10 Track Maintenance	MT
Black Hills	497.9	499.6	2	5:05:20:00	5:06:38:00	10	10	10	10 Track Maintenance	MT
Black Hills	528.75	530.7	2	9:18:50:00	9:20:45:00	10	10	10	10 Track Maintenance	MT
Black Hills	528.8	530.7	1	9:18:50:00	9:20:45:00	0	0	0	0 Track Maintenance	MT
Black Hills	534.1	534.15	1	10:16:59:00	10:21:19:00	10	10	10	10 Track Maintenance	MT
Black Hills	534.1	534.15	2	10:16:59:00	10:21:19:00	10	10	10	10 Track Maintenance	MT
Black Hills	547.15	547.2	1	14:16:03:00	14:20:45:00	10	10	10	10 Track Maintenance	MT
Black Hills	547.15	547.2	2	14:16:03:00	14:20:45:00	10	10	10	10 Track Maintenance	MT
Black Hills	547.3	549.4	1	11:10:59:00	11:14:14:00	10	10	10	10 Track Maintenance	MT
Black Hills	547.3	549.4	2	11:10:59:00	11:14:14:00	10	10	10	10 Track Maintenance	MT
Black Hills	556.25	556.3	1	9:15:53:00	9:18:39:00	10	10	10	10 Track Maintenance	MT
Black Hills	556.25	556.3	1	9:18:54:00	9:20:07:00	10	10	10	10 Track Maintenance	MT
Black Hills	556.3	558.3	2	9:15:53:00	9:18:39:00	10	10	10	10 Track Maintenance	MT
Black Hills	556.3	558.3	2	9:18:54:00	9:20:07:00	10	10	10	10 Track Maintenance	MT
Black Hills	562.05	563.8	2	13:15:45:00	13:18:30:00	0	0	0	0 LOCO FAILURE	MT
Black Hills	567.1	568.95	1	7:16:30:00	7:20:37:00	10	10	10	10 Track Maintenance	MT
Black Hills	567.1	568.95	2	7:16:30:00	7:20:37:00	10	10	10	10 Track Maintenance	MT
Black Hills	576.5	576.55	1	9:20:53:00	9:21:06:00	10	10	10	10 Track Maintenance	MT
Black Hills	576.5	576.55	2	9:20:53:00	9:21:06:00	10	10	10	10 Track Maintenance	MT
Black Hills	586.4	587.15	1	9:21:52:00	9:22:39:00	10	10	10	10 Track Maintenance	MT
Black Hills	586.4	587.15	1	14:16:03:00	14:20:45:00	10	10	10	10 Track Maintenance	MT
Black Hills	587.15	587.2	1	5:15:03:00	5:17:18:00	10	10	10	10 Track Maintenance	MT
Black Hills	589.95	590	1	15:18:18:00	15:19:27:00	10	10	10	10 Track Maintenance	MT
AEP REBUTTAL FOR BLACK HILLS SUB										
Black Hills	482.6	484.25	2	13:20:40:00	13:22:00:00	0	0	0	0 SIGNAL	MT

Green = common in both scenarios

COMPARISON OF TRACK OUTAGES: AEP REBUTTAL VERSUS BNSF REPLY RTC CASES

Subdivision	Beginning Field MP -xxxxxx-xxx-xxxxxx-xxx-	Ending Field MP -xxxxxx-xxx-xxxxxx-xxx-	Trk #	Starting Time DD:HH:MM:SS--	Ending Time --DD:HH:MM:SS--	Psg -xxx-	Exp xxx-	Frt xxx-	Description	TZ
BNSF REPLY FOR BRUSH SUB										
Brush	140.55	141.2	1	12:21:04:00	12:22:12:00	10	10	10	10 Track Maintenance	MT
Brush	464.3	467.3	1	14:08:42:00	14:09:59:00	10	10	10	10 Track Maintenance	MT
Brush	474.8	477.8	1	13:18:38:00	13:22:02:00	10	10	10	10 Track Maintenance	MT
Brush	474.8	477.8	1	14:13:21:00	14:16:39:00	10	10	10	10 Track Maintenance	MT
Brush	474.8	477.8	1	14:16:40:00	14:17:37:00	10	10	10	10 Track Maintenance	MT
Brush	498.5	501.3	1	12:05:41:00	12:07:36:00	10	10	10	10 Track Maintenance	MT
Brush	501.3	503.69	1	9:02:55:00	9:06:55:00	0	0	0	0 TRAIN FAILURE	MT
Brush	511.3	513	1	9:07:42:00	9:10:57:00	10	10	10	10 Track Maintenance	MT
Brush	539.6	540.7	1	15:08:33:00	15:10:47:00	10	10	10	10 Track Maintenance	MT
AEP REBUTTAL FOR BRUSH SUB										
Brush	501.3	503.69	1	9:02:55:00	9:06:55:00	0	0	0	0 TRAIN FAILURE	MT

SPREADSHEET # common in both scenarios

COMPARISON OF TRACK OUTAGES: AEP REBUTTAL VERSUS BNSF REPLY RTC CASES

Subdivision	Beginning Field MP	Ending Field MP	Trk #	Starting Time	Ending Time	Psg	Exp	Frt	Description	TZ
-xxxxxx-xxx-xxxxx-xxx--xxxx-	DD:HH:MM.SS-	DD:HH:MM.SS-	--xxxx-	DD:HH:MM.SS-	DD:HH:MM.SS-	-xxx-	xxx-	xxx-	xx	

COMPARISON OF TRACK OUTAGES: AEP REBUTTAL VERSUS BNSF REPLY RTC CASES

[illegible]

Subdivision	Beginning Field MP	Ending Field MP	Trk #	Starting Time	Ending Time	Psg	Exp	Frt	Description	TZ
	-xxxxx.xxx--xxxxx.xxx-	-xxxxx.xxx-	-xxxxx-	DD:HH:MM:SS-	DD:HH:MM:SS-	-xxx-	xxx-	xxx-	xx	xxxxx
BNSF REPLY FOR ORIN SUB										
Orin	14.55	14.85	1	14:19:11:00	4:23:28:00	10	10	10	FROG ISSUE	MT
Orin	16.35	16.4	1	15:17:23:00	5:18:40:00	10	10	10	Track Maintenance	MT
Orin	19.2	21	1	17:13:00:00	7:15:00:00	0	0	0	TRAIN STALL	MT
Orin	23.8	23.85	1	18:06:39:00	8:10:29:00	10	10	10	RAIL ISSUE	MT
Orin	24.5	28.3	1	15:14:57:00	5:20:16:00	10	10	10	FAULTY JOINT	MT
Orin	28.3	30	1	12:05:57:00	12:08:04:00	10	10	10	SIGNAL BULB	MT
Orin	35.9	37.8	1	17:10:30:00	7:12:30:00	0	0	0	TRAIN STALL	MT
Orin	37.8	40	2	16:03:50:00	16:05:50:00	0	0	0	BROKEN KNUCKLE	MT
Orin	40	41.4	1	18:00:20:00	8:02:09:00	10	10	10	SIGNAL BULB	MT
Orin	43.6	43.65	1	11:03:10:00	11:09:10:00	0	0	0	BROKEN KNUCKLE	MT
Orin	43.6	43.65 AUX	1	11:03:10:00	11:09:10:00	0	0	0	BROKEN KNUCKLE	MT
Orin	50.7	52.5	1	19:21:06:00	9:23:43:00	10	10	10	SWITCH POINTS	MT
Orin	63.6	65.25	1	18:19:39:00	18:22:01:00	10	10	10	SWITCH POINTS	MT
Orin	65.4	67.8	1	17:10:50:00	7:12:30:00	0	0	0	TRAIN STALL	MT
Orin	72.3	72.35	1	11:06:23:00	11:10:51:00	10	10	10	SWITCH POINTS	MT
Orin	72.35	73	1	10:18:23:00	10:21:14:00	10	10	10	FROG ISSUE	MT
AEP RESUTAL FOR ORIN SUB										
Orin	28.3	30	1	12:05:57:00	12:08:04:00	10	10	10	SIGNAL BULB	MT

செய்தியைக் கருத்துக்கு மாற்றுவதில்

COMPARISON OF TRACK OUTAGES: AEP REBUTTAL VERSUS BNSF REPLY RTC CASES

[illegible][illegible]

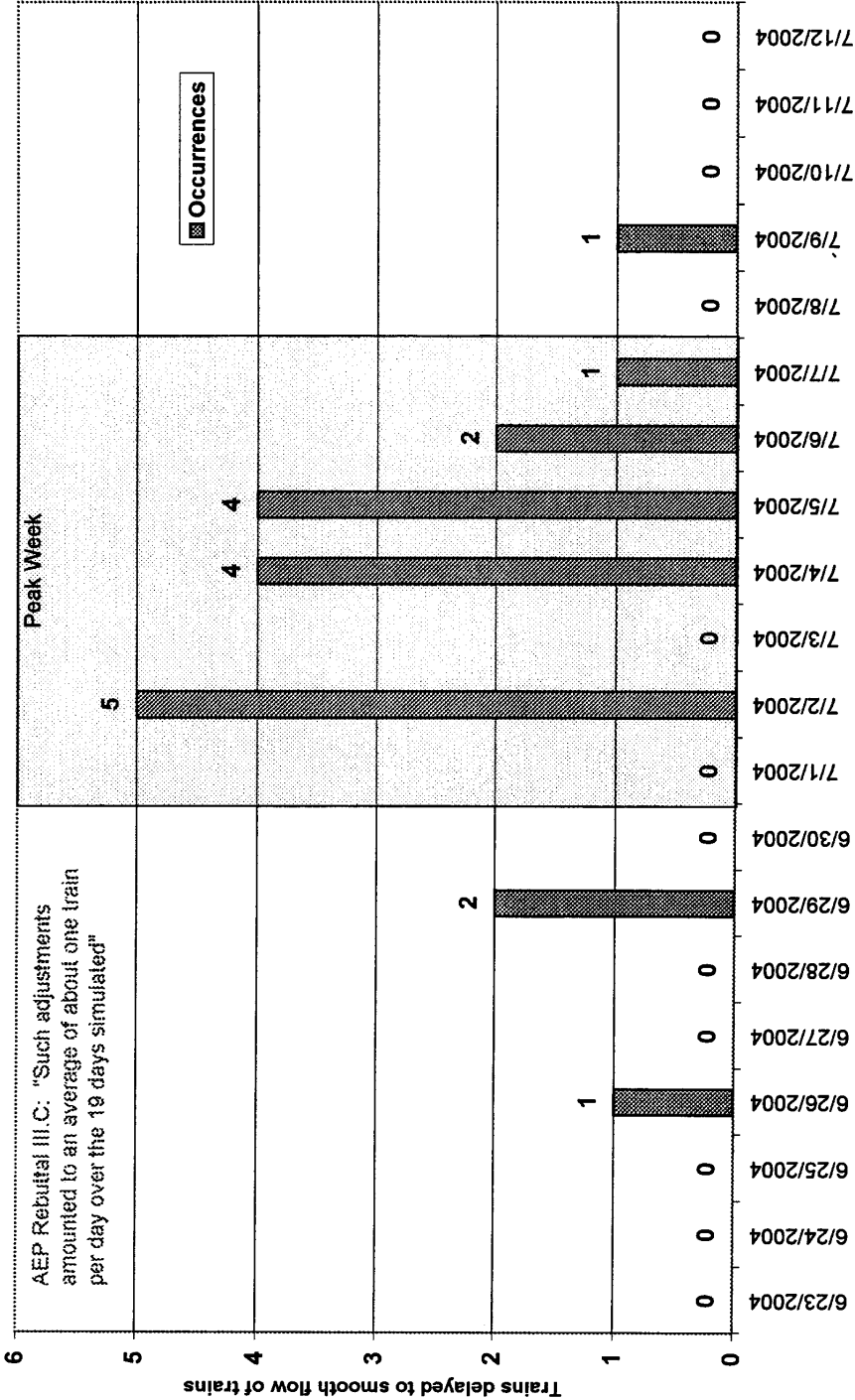
COMPARISON OF TRACK OUTAGES: AEP REBUTTAL VERSUS BNSF REPLY RTC CASES

Subdivision	Beginning Field MP	Ending Field MP	Trk #	Starting Time	Ending Time	Psg	Exp	Frt	Description	TZ
BNSF REPLY FOR RED RIVER VALLEY SUB										
Red River Valley	155.7	156.75	1	13:23:59:00	14:02:04:00	10	10	10	Track Maintenance	MT
Red River Valley	166.4	168	1	9:09:30:00	9:12:15:00	0	0	0	TRAIN FAILURE	MT
Red River Valley	168	171	1	15:13:35:00	15:14:40:00	0	0	0	BROKEN KNUCKLE	MT
Red River Valley	189.1	191.8	1	11:23:50:00	12:04:21:00	10	10	10	Track Maintenance	MT
Red River Valley	222.2	222.25	1	15:08:21:00	15:14:07:00	10	10	10	Track Maintenance	MT
Red River Valley	235.86	237.36	1	15:08:59:00	15:12:23:00	10	10	10	Track Maintenance	MT
Red River Valley	243	246	1	11:12:14:00	11:15:30:00	10	10	10	Track Maintenance	MT
Red River Valley	273	275.7	1	11:11:32:00	11:15:29:00	10	10	10	Track Maintenance	MT
Red River Valley	289.43	291.5	1	9:09:06:00	9:11:15:00	0	0	0	Track Maintenance	MT
Red River Valley	292.3	295.2	1	8:17:15:00	8:18:55:00	0	0	0	BRAKE RIG	MT
Red River Valley	302	303.87	1	10:04:48:00	10:07:19:00	10	10	10	Track Maintenance	MT
Red River Valley	317.7	318.47	1	12:02:59:00	12:05:41:00	10	10	10	Track Maintenance	MT
AEP REBUTTAL FOR RED RIVER VALLEY SUB										
Red River Valley	166.4	168	1	9:09:30:00	9:12:15:00	0	0	0	TRAIN FAILURE	MT
Red River Valley	292.3	295.2	1	8:17:15:00	8:18:55:00	0	0	0	BRAKE RIG	MT

green = common in both scenarios



Manual manipulation of trains: Trains delayed per day





AEP TEXAS MANUAL MANIPULATIONS

Wheeler VS Attachment 5
Page 1 of 1

AEP train id	corrected trn id	sim day	date	location of delay	delay
14ENLTBTM145A_D1	14MNLBTBTM145A_D1	weds wk 1	26-Jun	AMINT 1200	2'00
12ESLPJRM1	12ESLPJRM1	sat wk 1	29-Jun	Oklaunion 6674	6'00
23EHOHCRM1_D1-07	23EHOHCRM1_D1-07	sat wk 1	29-Jun	Las Animas	4'00
20E THHNAM902A_D1-10	20ETHHNAM902A_D1-10	tues wk 2	2-Jul	Oklaunion 6673	2'00
47E THHNAM926A_D1-10	47ETHHNAM926A_D1-10	tues wk 2	2-Jul	Oklaunion 6673	6'00
200Q1ALTCL002A_D1-10	200Q1ALTCL002A_D1-10	tues wk 2	2-Jul	Oklaunion OKINT 100	2'00
24ESLPCAM1	24ESLPCAM1	tues wk 2	2-Jul	Oklaunion	2'00
44E 001_D1-14	44EOKOCAM001A_D1-14	tues wk 2	2-Jul	Amarillo	2'30
47ETHHNAM1-12	47ETHHNAM1-12	thur wk 2	4-Jul	Oklaunion 6673	4'30
23EHOHCRM3-12	23EHOHCRM3-12	thur wk 2	4-Jul	Las Animas 5294	3'00
20EIOGCDM 041D_D1-12	20EIOGCDM 041D_D1-12	thur wk 2	4-Jul	Oklaunion 6673	3'30
20EDOLCDM001A_D1-12	20EDOLCDM001A_D1-12	thur wk 2	4-Jul	Oklaunion 6673	4'00
23EHOHCRM6-13	23EHOHCRM6-13	fri wk 2	5-Jul	Las Animas 5294	1'00
23EHOHCRM5-13	23EHOHCRM5-13	fri wk 2	5-Jul	Las Animas 5294	1'00
2EAMHATM012A_D1-13	2EAMHATM012A_D1-13	fri wk 2	5-Jul	Harrington	8'15
5ENAMTEPX61_D1-13	5ENAMTEPX61_D1-13	fri wk 2	5-Jul	AMINT 1200	3'00
47EHAFBKM1-14	47EHAFBKM1-14	sat wk 2	6-Jul	Oklaunion 6673	4'30
400FC127_D1-14	400FCAICL127D_D1-14	sat wk 2	6-Jul	Amarillo	1'30
200B5PEAWAT06A_D1-15	200B5PEAWAT06A_D1-15	sun wk 3	7-Jul	Oklaunion OKINT100	1'30
28EMICBAM128A_D1-13	28EMICBAM128A_D1-13	tues wk 3	9-Jul	COM 130	3'00

AEP TEXAS NORTH COMPANY,

Complainant,

v.

**THE BURLINGTON NORTHERN AND
SANTA FE RAILWAY COMPANY,**

Defendant.

Docket No. 41191 (Sub-No. 1)

Mr. Plum is a Director of FTI Consulting, Inc., with offices at 1201 Eye Street, N.W., Suite 400, Washington, DC 20005. Mr. Plum holds a Bachelor's Degree in Accounting and an M.B.A. degree with a concentration in finance. He began his career in 1979 with Wyer Dick & Company, a consulting firm that specialized in railroad costing issues. Since that time he has been involved continuously in analyzing accounting, cost, financial and engineering issues associated with railroad operations and pricing. He has conducted numerous variable and stand-alone cost studies, conducted and evaluated railroad contract provisions, field studies of railroad operations, and developed computer models to evaluate railroad engineering and operating requirements. Mr. Plum submitted evidence in this proceeding in support of BNSF's May 24, 2004, Reply Evidence.

Mr. Witherspoon is a Senior Consultant at FTI Consulting, Inc., with offices at 1201 Eye Street, N.W., Suite 400, Washington, DC 20005. Mr. Witherspoon holds a Bachelor's Degree in Mathematics and an M.B.A. degree with concentrations in Corporate Finance and Corporate Strategy. He began his career in 1997 at General Electric as an internal audit specialist. Mr. Witherspoon joined FTI in 2002 and has since worked on railroad rate cases. He has conducted numerous analyses in the areas of traffic operating characteristics, revenue allocation, train movement statistics and railroad SAC modeling.

BNSF asked us to determine whether AEP Texas' Rebuttal RTC simulation modeled all of the trains AEP Texas stated would be required for the AEP Texas traffic group. We conclude that AEP Texas failed to model all of the trains that it stated should be modeled within the RTC simulation.

AEP Texas asserts that its Rebuttal Exhibit III-B-5, entitled "Trains Used in AEP Texas' Rebuttal RTC Model Run," contains the peak period trains for its rebuttal traffic group. AEP Texas Rebuttal Nar. at III-B-4.¹ That exhibit identifies 710 loaded coal trains that, according to AEP Texas, should have been run through its RTC model.² We asked BNSF witness Wheeler to generate for us, using AEP Texas' Rebuttal RTC model, a list of trains that were actually modeled.³ Mr. Wheeler's list reveals that only 592 loaded coal trains were run through the AEP Texas Rebuttal RTC simulation. It is clear, therefore, that AEP Texas modeled only 83% of the loaded coal trains that it asserts were required. In addition, Mr. Wheeler's list reveals that only 608 (instead of the expected 710) empty coal trains were included in the AEP Texas Rebuttal

¹ A copy of AEP Texas Rebuttal Exhibit III-B-5 is included with this Verified Statement as Attachment 1.

² In addition, AEP Texas Rebuttal Exhibit III-B-5 identifies 138 non-coal trains.

³ The list of trains actually modeled provided by Mr. Wheeler is included with this Verified Statement as Attachment 2.

RTC simulation.

We compared the number of trains that should have run to each destination according to AEP Texas Rebuttal Exhibit III-B-5 to the number of trains actually modeled to each destination as determined by Mr. Wheeler. To perform this comparison, we first created separate lists of all the unique train symbols from Exhibit III-B-5 and from Mr. Wheeler's list. We then associated each unique train symbol with its destination. This permitted us to count how many trains there were for each destination in each list. We were then able to conduct a side-by-side comparison of the two lists by destination. Our analysis is contained in BNSF Motion to Strike electronic workpaper "AEP Texas Rebuttal RTC Failings.xls."

Our analysis revealed that in a number of instances AEP Texas entirely failed to model trains to a given destination plant while in many others AEP Texas modeled only some of the trains destined for a plant. AEP Texas completely omitted any trains to Georgia Power's Scherer plant, even though AEP Texas asserts that the movement to that plant would be by far the largest on the TNR in 2020.⁴

⁴ See AEP Texas Rebuttal electronic workpaper "Simulation Trains – peak calc rebut.xls," worksheet "Growth Factors," cell AH76.

Verification of Robert J. Plum

I, Robert J. Plum, verify under penalty of perjury that the foregoing is true and correct.

Further, I certify that I am qualified and authorized to file this Verified Statement.

Executed on September 8, 2004

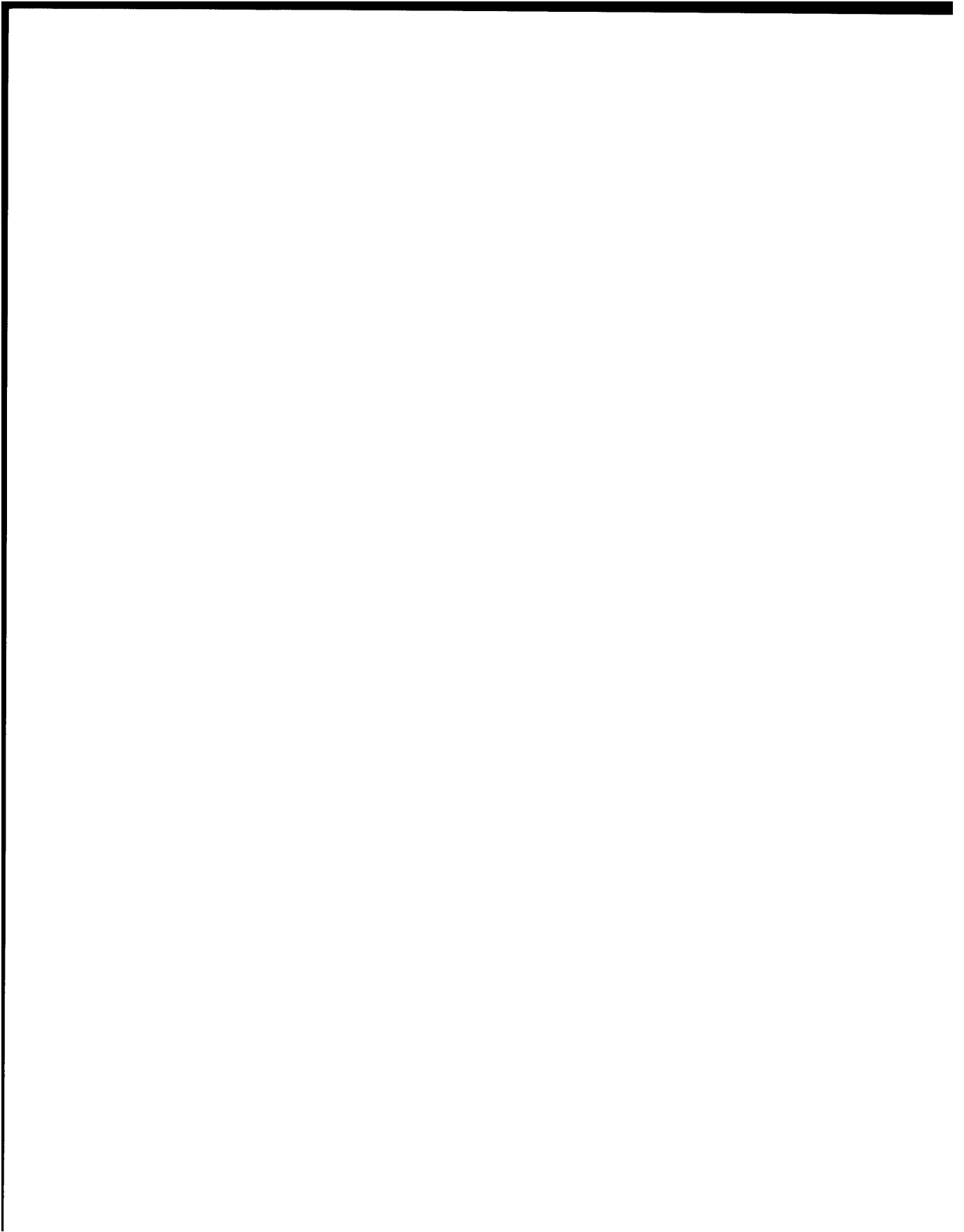

Robert J. Plum

Verification of David T. Witherspoon

I, David T. Witherspoon, verify under penalty of perjury that the foregoing is true and correct. Further, I certify that I am qualified and authorized to file this Verified Statement.

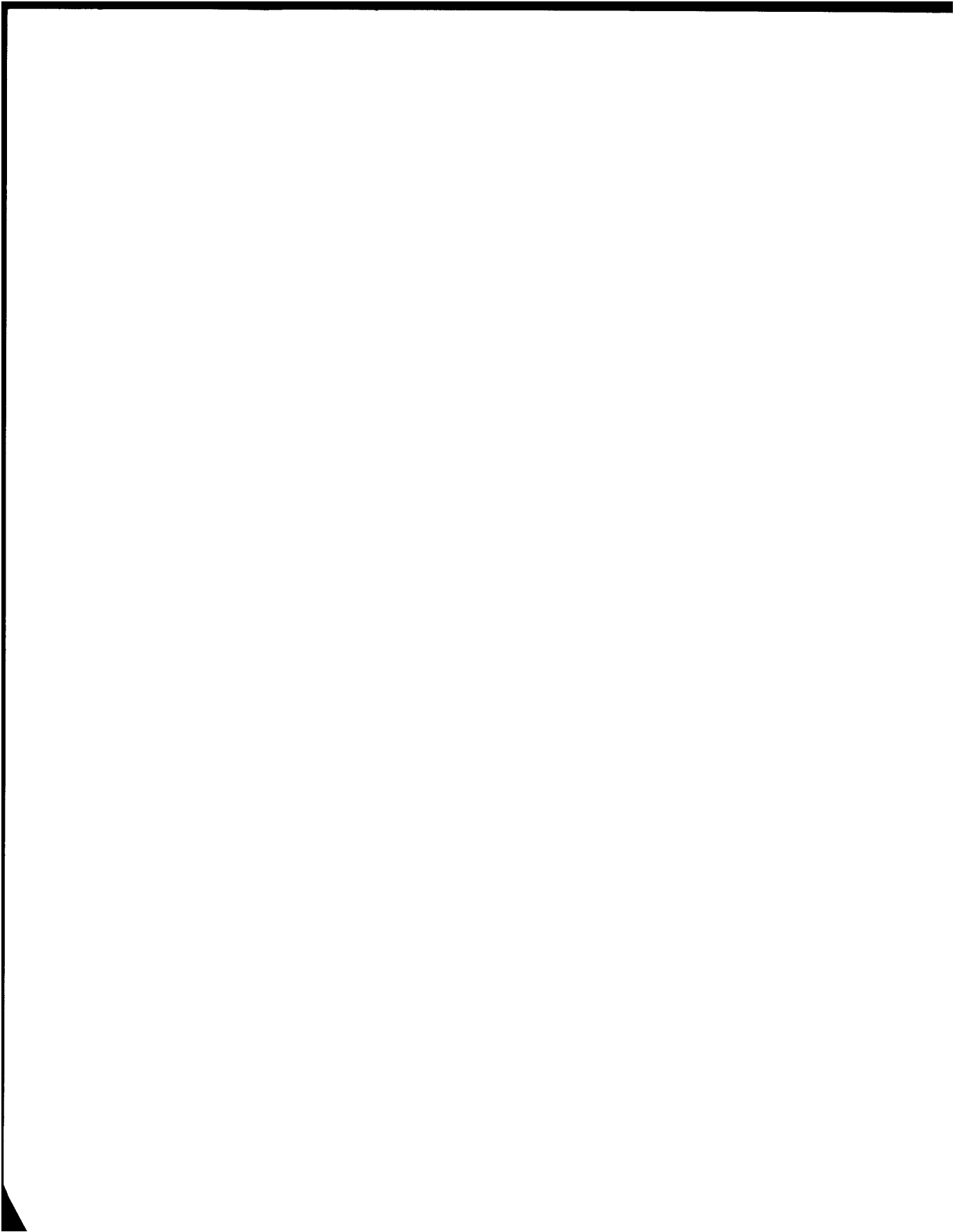
Executed on September 8, 2004


David T. Witherspoon



Attachment 1 to Plum/Witherspoon V.S.

Redacted



Attachment 2 to Plum/Witherspoon V.S.

Redacted

**BEFORE THE
SURFACE TRANSPORTATION BOARD**

AEP TEXAS NORTH COMPANY Complainants, v. THE BURLINGTON NORTHERN AND SANTA FE RAILWAY COMPANY, Defendant.	))))))))))	Docket No. 41191 (Sub-No.1)
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VERIFIED STATEMENT OF CASSANDRA M. GOUGER

I. INTRODUCTION

My name is Cassandra M. Gouger. I am a Manager in the Financial Consulting Division of FTI, with offices at 1201 Eye Street, N.W., Suite 400, Washington, D.C. 20005. Throughout my career I have focused on railroad and roadway engineering and design. I have been involved in numerous rate reasonableness proceedings before the Surface Transportation Board and its predecessor, the Interstate Commerce Commission. In each of those proceedings, I have provided support to the construction and engineering testimony submitted on behalf of defendant railroads.

Prior to joining FTI in the spring of 2004, I was employed by Felsburg Holt & Ullevig where I was a project manager and designer on roadway and railroad projects including a roadway widening project in Black Hawk, Colorado, which is discussed further below. From July, 1996 to May, 2001, I worked for TranSystems Corporation as a railroad design engineer

and project manager on railroad projects. I began my engineering career at Deleuw Cather, Incorporated as an engineering intern in June, 1989, where I started my railroad engineering career and stayed until I started working with TranSystems.

I sponsored portions of the construction and engineering narrative in this proceeding on behalf of Burlington Northern and Santa Fe Railway Company ("BNSF"). Specifically I sponsored sections III.F.3, III.F.5, III.F.6 and III.F.8 of the BNSF's May 24, 2004 Reply Narrative.

I have been asked by BNSF to respond to certain new evidence that AEP Texas submitted in its July 27, 2004 Rebuttal related to the cost of solid rock excavation. That new evidence supposedly is a response to evidence that BNSF submitted in its Reply. In its Reply, BNSF used information from a roadway widening project in Black Hawk, Colorado to demonstrate that the blasting of solid rock produces rubble of varying sizes and dimensions, including large boulders. BNSF submitted this information to support its assertion that large boulders produced in solid rock excavation must be handled using more expensive equipment than the equipment that AEP Texas assumed the TNR would use, or they must be reduced in size by further blasting. In its Reply, BNSF did not use the solid rock excavation unit costs from the Black Hawk project as the basis for the TNR solid rock excavation costs, or refer to any cost evidence relating to the Black Hawk project. Rather, BNSF based those costs on R.S. Means costs, consistent with Board precedent.

On rebuttal, AEP Texas purported to submit cost data relating to the Black Hawk project in response to the information that BNSF submitted on reply relating to the Black Hawk project. According to AEP Texas, these cost data relating to the Black Hawk project show that the unit costs attributable to solid rock excavation sponsored by BNSF on reply were too high. AEP

Texas claimed that the Black Hawk cost data support AEP Texas' solid rock excavation costs. There are several problems with AEP Texas' argument, beginning with the fact that the cost data submitted by AEP Texas do not even relate to the Black Hawk project, but rather to a much larger excavation of rock and common materials currently underway in nearby Central City, Colorado. Moreover, the unit costs presented by AEP Texas are not related to the solid rock excavation. Indeed, when the excavation costs of the Black Hawk project are examined, it is clear that those costs are very close to the costs posited by BNSF in its Reply Evidence for solid rock excavation, thereby providing further support for BNSF's cost assumptions. In the remainder of my statement, I will explain why the costs of the Central City project selected by AEP Texas do not reflect the costs of solid rock excavation, demonstrate that AEP Texas has misrepresented the costs of the Central City project, and show that when the solid rock excavation costs of the Black Hawk project are considered, they actually support those used by BNSF in its Reply.

II. BLACK HAWK AND CENTRAL CITY, COLORADO PROJECTS

AEP Texas, on rebuttal, asserted incorrectly that the Black Hawk, Colorado project referred to in BNSF's Reply Evidence is actually an 8.5 mile new private highway project in nearby Central City, Colorado, called the Central City Parkway (CCP), currently under construction by the Ames Construction Company.

In fact, the project that BNSF referred to in the Reply Evidence is the widening of State Highway 119 in Black Hawk, Colorado, which was carried out by the Colorado Department of Transportation (CDOT) in 2002. The Black Hawk project, which I personally designed during my tenure with Felsburg Holt & Ullevig, a transportation engineering firm located in Centennial,

Colorado, involved the excavation of a solid rock ledge perched adjacent to the existing highway.

Attachment 1 to this Verified Statement is a map depicting the location of the Black Hawk project and the much larger Central City Parkway project. I have also included the Black Hawk project photographs from BNSF's Reply workpapers as Attachment 2.

In addition to selecting the wrong project, AEP Texas reached conclusions about the excavation costs for the Central City Parkway Project that are unsupported and incorrect, and then tried to compare those costs to the solid rock excavation costs for the TNR. AEP Texas derived the excavation cost for the CCP by dividing the total cost for the project as reported in an article published in *The Colorado Gambler*¹ (\$38.3 million) by the reported amount of excavation (5.5 million cubic yards) from the same article. According to AEP Texas, that result – \$7.00 per cubic yard – represents the most conservative possible assessment of solid rock excavation costs on the CCP because it assumes that all costs of the project are associated with excavation of solid rock. AEP Texas then compared its hypothetical \$7.00 per cubic yard to the solid rock unit cost of \$22.47 per cubic yard used by BNSF in its Reply. According to AEP Texas, the discrepancy between the CCP cost and BNSF's cost shows that BNSF has overstated solid rock excavation costs. However, for several reasons AEP Texas' supposed comparison is incorrect and misleading.

First, AEP Texas' calculations assumed that the total 5.5 million cubic yards of excavation involve solid rock, but there is no basis for that assumption. AEP Texas claimed that the project sponsor refers to the 5.5 million cubic yards of excavation as involving "rock," but both parties in this case acknowledge that rock excavation may involve loose rock excavation and solid rock,

¹ AEP Texas Rebuttal workpaper 00846.

and both parties have acknowledged that the unit costs for loose rock are significantly lower than for solid rock. If the rock excavation on the CCP consisted only of loose rock, the excavation costs of the CCP would say nothing about the cost of excavating solid rock. Indeed, no estimate of solid rock excavation costs on the CCP can be made without information about the mix of loose and solid rock.

More important, AEP Texas claimed that the reported 5.5 million cubic yards of excavation corresponds to excavation of “rock,” but it is clear that the 5.5 million cubic yards includes some common excavation. The CCP project is 8.5 miles. If the 5.5 million cubic yard quantity is divided by 8.5 miles, the result is a total of 647,059 cubic yards of earthwork per mile. In my experience as an engineer, such large quantities of excavation are extremely rare even when they include all excavation, including common excavation, and it would be unlikely to have a roadbed project that involved over 600,000 cubic yards of rock alone. By way of comparison, AEP Texas itself estimated that the construction of the 6.61 miles of the TNR that goes through Crawford Hill, a project of similar complexity in similar terrain as shown in the photographs in Attachment 3 to this statement, only averages 370,856 cubic yards of earthwork, including common excavation.² It would be extremely unlikely that a similar roadbed project would involve nearly two times that earthwork quantity only *in rock excavation*. The extremely large per-mile volume of excavation associated with the CCP project indicates that the 5.5 million cubic yards must include all excavation that is needed for the project, not just solid rock excavation. In fact, photographs of the CCP roadbed construction on the website, www.centralcityhighway.com depict mostly common and loose rock excavation, indicating that

² AEP Texas Rebuttal electronic workpaper “TNR GRADING Rebuttal.XLS,” worksheet “IIIF 17 CY Grad.”

the 5.5 million cubic yards consist of a mix of materials. Since the total cost for the CCP likely includes a significant (but ultimately unknown) quantity of less expensive common and loose rock excavation, nothing can be concluded from the published information on the CCP about the solid rock excavation costs in that project.

Third, the CCP project is not a suitable benchmark for the construction of the TNR even if there were data on the relative volumes of different earthwork materials involved in the CCP. The large volume of excavation that must be carried out and the immense construction equipment used on the CCP create efficiencies that will not be available to the builders of the TNR. As noted above, the CCP construction encompasses 5.5 million cubic yards of excavation over its 8.5 mile length, resulting in an average of 647,059 cubic yards of excavation per mile. The vast majority of the TNR averages only one-tenth of the CCP, or 65,750 cubic yards per route mile, according to AEP Texas quantities on rebuttal, except for the 6.61 miles through Crawford Hill where 370,856 cubic yards of earthwork are required. The large volume of excavation involved in the CCP allowed the sponsors of that project to use equipment that achieves very efficient excavation operations. Some of the equipment used by Ames Construction on the CCP includes a 14 cubic yard hydraulic shovel, twelve 100 ton hauling trucks, and two 15 cubic yard loaders – immense equipment that is not being posited by either party in this case for the TNR. The economies that result from use of this equipment could be expected to result in lower unit costs than those achievable with the smaller equipment selected for the TNR. These vast differences in quantities and equipment render AEP Texas' comparisons of the CCP to the TNR invalid.

III. SOLID ROCK EXCAVATION COSTS ON THE BLACK HAWK PROJECT

As noted above, BNSF did not rely on the Black Hawk project as the source of solid rock excavation unit costs in its Reply. Instead, consistent with Board precedent, BNSF relied on R.S. Means to build up the appropriate costs. BNSF did rely on the Black Hawk project to demonstrate for the Board that a variety of shapes and sizes of residual rock and boulders are created by the solid rock blasting process. This evidence was presented to show that AEP Texas' equipment would not be capable of removing the boulders without secondary blasting to reduce their size. While BNSF did not rely on the costs of the Black Hawk project, an examination of those costs in fact supports the unit costs that BNSF sponsored based on R.S. Means.

Attachment 4 to this statement is the CDOT bid tabulation for the Black Hawk project of which Kiewit Western Company was the successful bidder.³ The excavation unit cost that Kiewit Western Company bid was \$19.85 per cubic yard.⁴ The bid materials do not classify the type of excavation involved, but I know from my work on the project that virtually all of the excavation involved solid rock. This is not surprising, since the nature of the project was to excavate a solid rock ledge perched adjacent to the existing highway. In contrast, the CCP was a highway project traversing 8.5 miles involving less demanding terrain where common excavation would be expected to be significant, as shown in the photographs from the website that are included in Attachment 5 to this statement. In its Reply, BNSF developed a unit cost of \$22.47 per CY for solid rock excavation using R.S. Means. That amount is relatively close to

³ It is interesting to note that Ames Construction, the contractor for the CCP, also bid on this project and was not the successful (*i.e.*, lowest) bidder. The Ames bid was \$38.00 per CY for unclassified excavation.

⁴ Although the material for the Black Hawk project was identified as unclassified excavation, virtually all of the excavation involved solid rock.

the amount set out in the Kiewit bid for the Black Hawk, Colorado project without any adjustments to account for differences in project specifications. However, the Black Hawk expansion project did not require any embankment, therefore the Kiewit bid does not include any costs for spreading and compaction, while those costs must be included in the solid rock costs for the TNR. If spreading and compaction costs from R.S. Means are added to the Kiewit bid, the unit cost would increase by approximately \$1.50 per CY,⁵ resulting in a unit cost of over \$21.00 per CY. In short, the Black Hawk costs strongly support the cost estimate that BNSF submitted on reply for solid rock excavation.

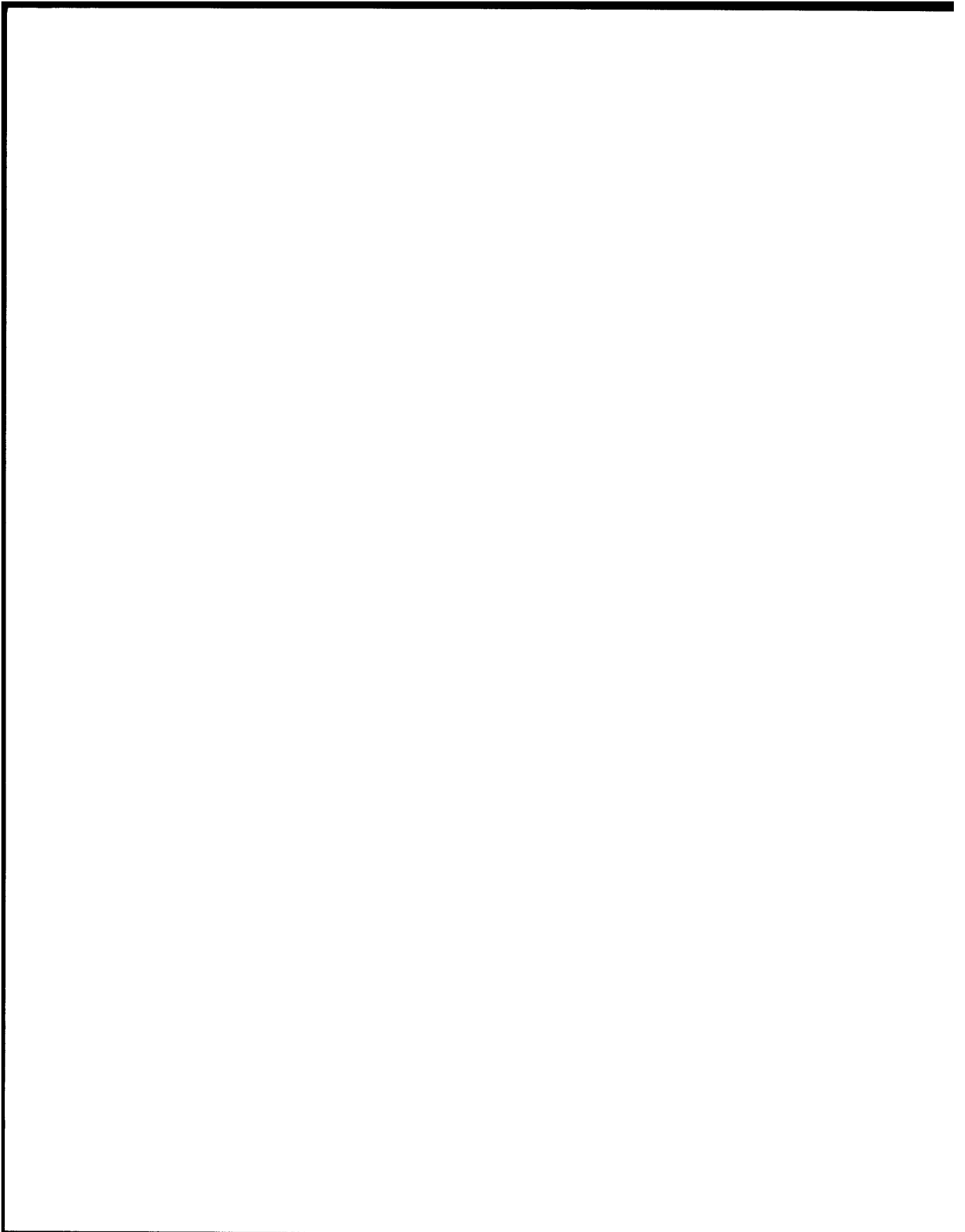
⁵ BNSF Reply electronic workpaper "III F 2 TNR Grading.XLS," worksheet "IIIF Unit Costs," cells J42 and J43.

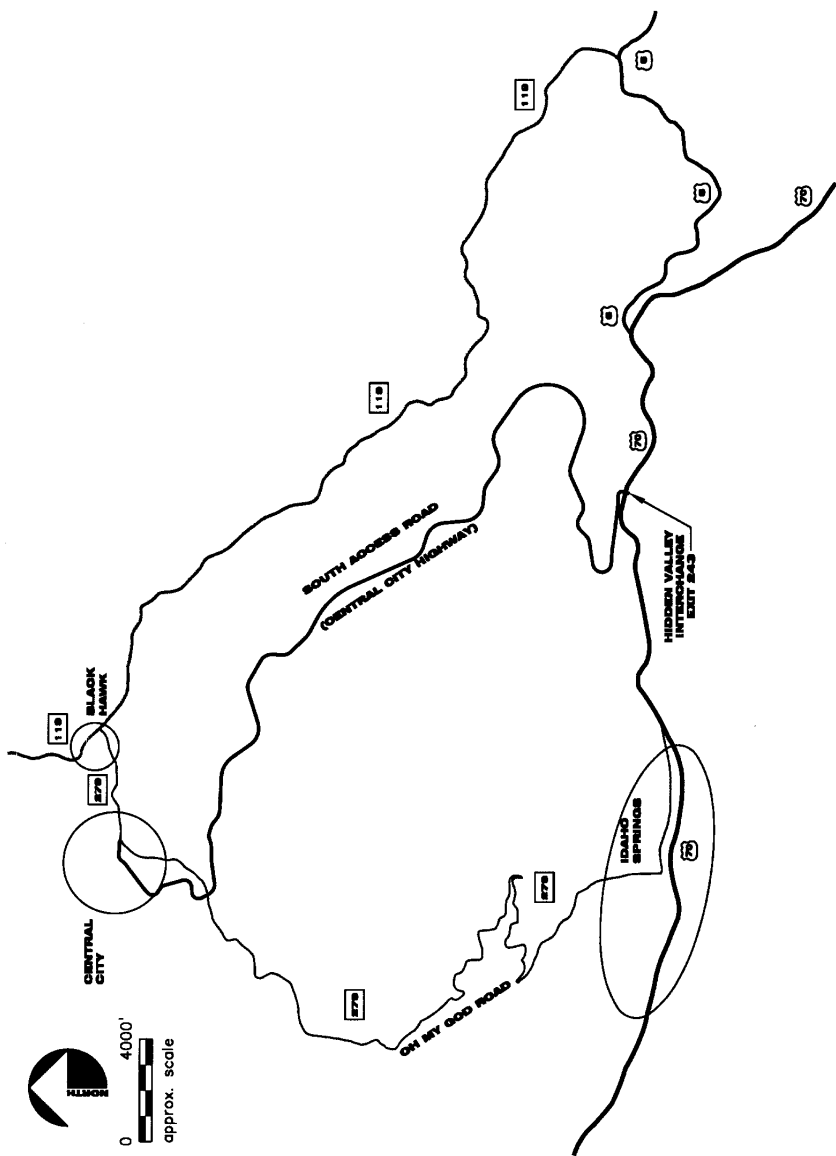
Verification of Cassandra M. Gouger

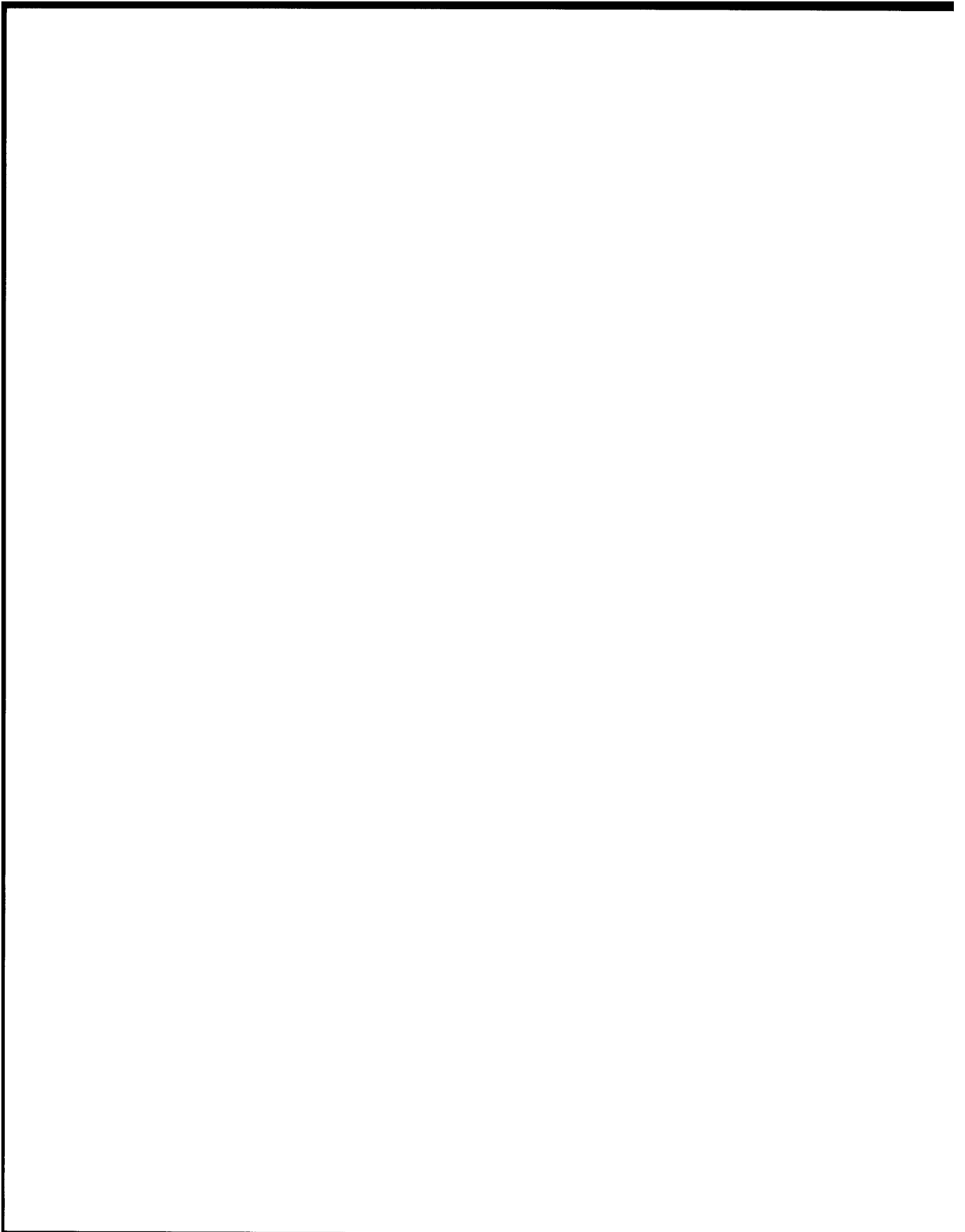
I, Cassandra M. Gouger, verify under penalty of perjury that the foregoing is true and correct. Further, I certify that I am qualified and authorized to file this Verified Statement.

Executed on September 6, 2004

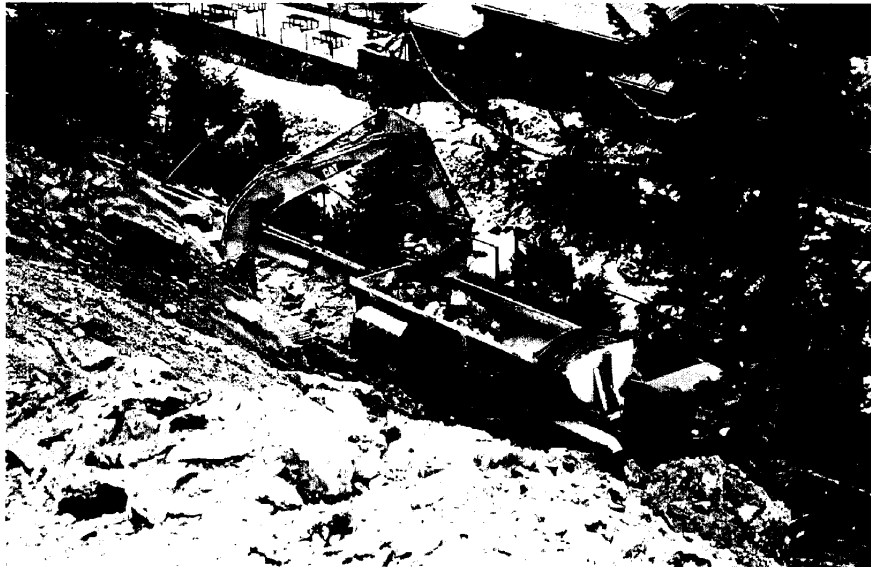
Cassandra M. Gouger
Cassandra M. Gouger







Black Hawk, Colorado Project Photos



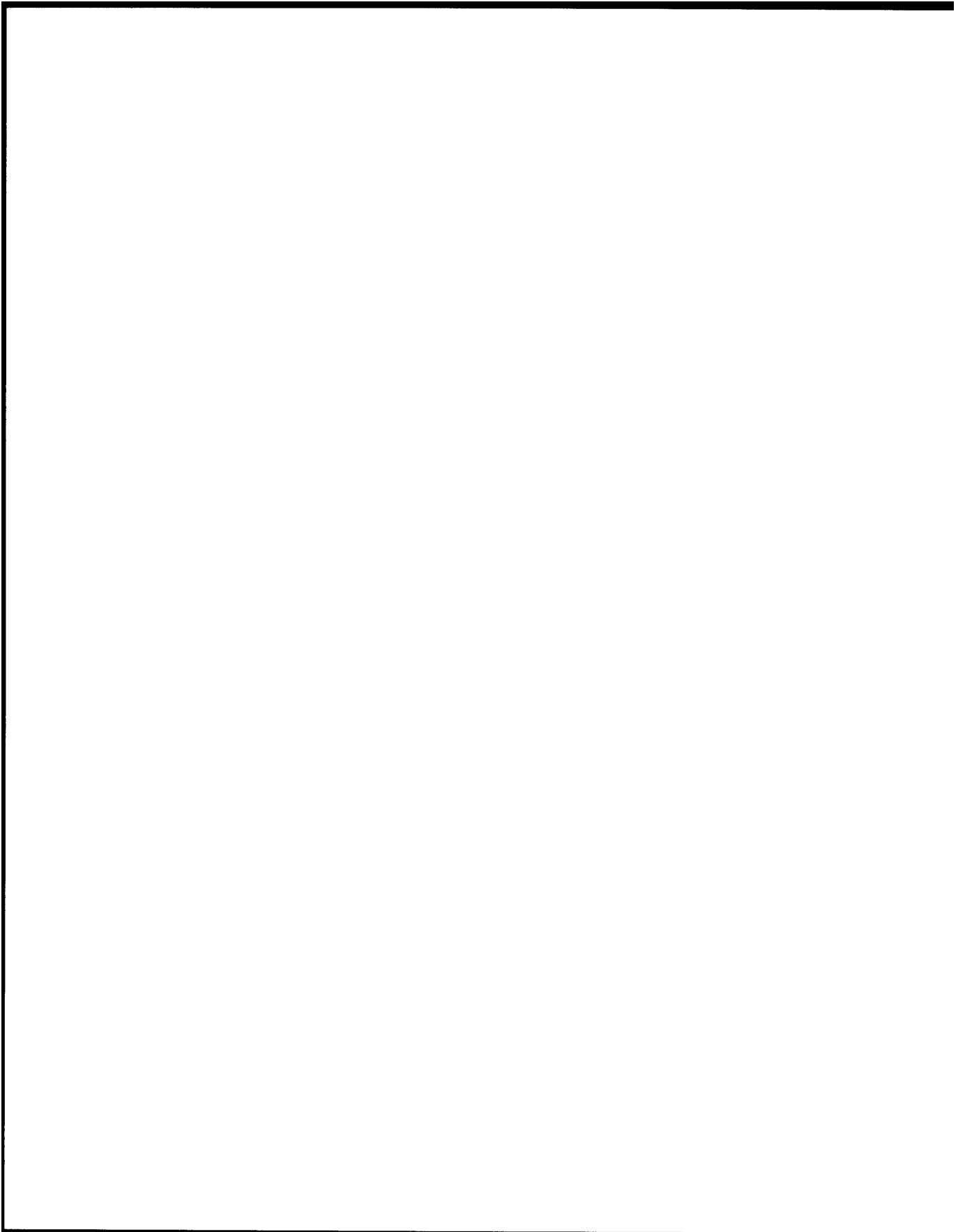
Hoe loading trucks with boulders.



Loading with a 3 CY bucket. (Notice size of boulders.)



Project Site

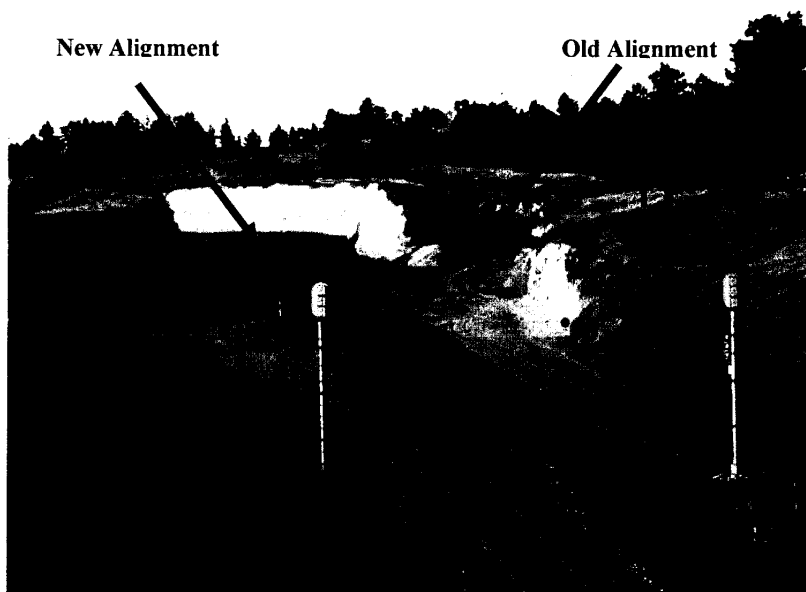




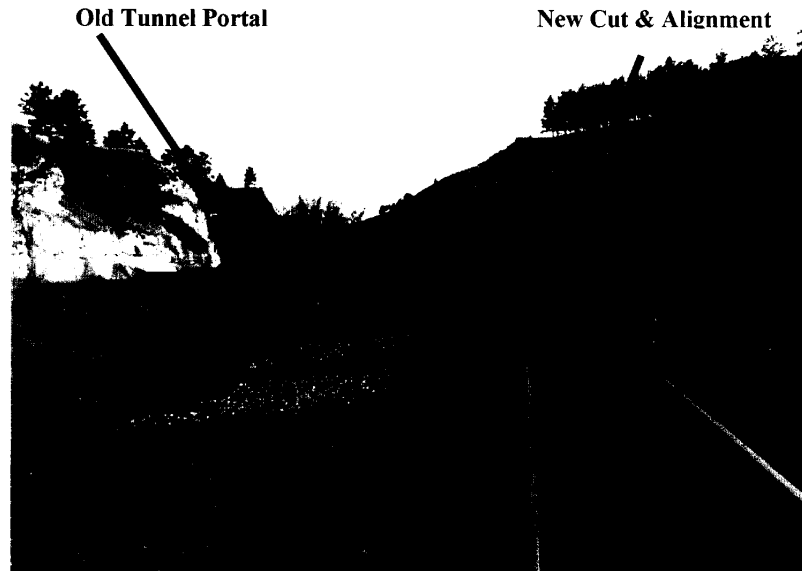
**CRAWFORD HILL LINE CHANGE
Butte Subdivision: MP 408 to MP 416**



Top of Hill at Belmont looking east



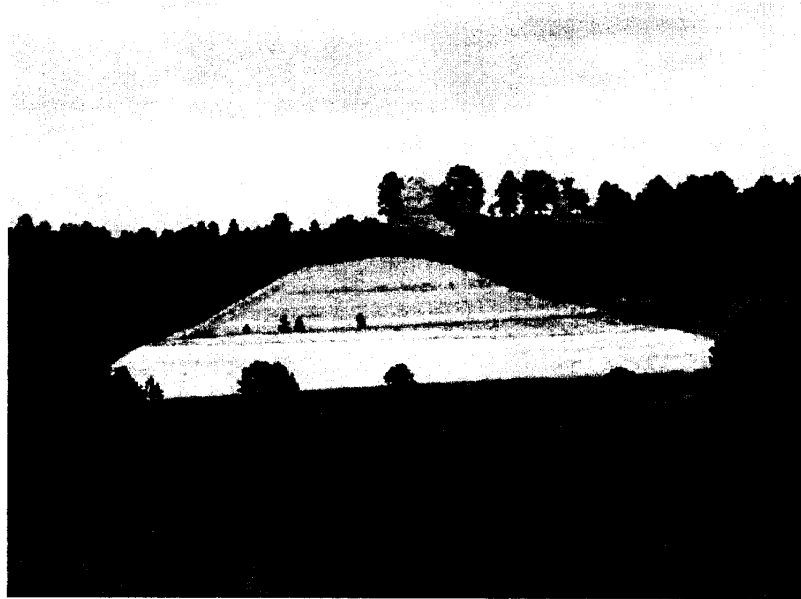
Belmont looking west



MP 410.3 Old Tunnel Location



Benched Cuts & Widened Roadbed MP 413-414



Benched Cuts MP 417 to MP 418





Tabulation of Bids

DATE : 05/30/02
PAGE : 005 -1

COLORADO DEPARTMENT OF TRANSPORTATION

TABULATION OF BIDS

LETTING NO. : 02053005
LETTING DATE : 05/30/02
LETTING TIME : 10:00 AM
CONTRACT ID : C13507
REGION : 1
CONTRACT TIME : 205 WORK DAYS
TERRAIN : MOUNTAINOUS
COUNTIES : GILPIN
PROJECT(S) : STA 119A-046

CONTRACT DESCRIPTION :
PROJECT STA 119A-046
LOCATED ON SH 119 IN BLACK HAWK

CONSISTING OF MAJOR WIDENING, AGGREGATE BASE COURSE,
GUARDRAIL, CURB & GUTTER, DRAINAGE, SIGNING, STRIPING
AND SIGNALIZATION.

A MANDATORY PRE-BID CONFERENCE WILL BE HELD AT THE REGION 1
CONFERENCE ROOM, 18500 EAST COLFAX AVENUE, BEGINNING AT 9:00
A.M. ON MAY 7, 2002. BIDS WILL ONLY BE ACCEPTED FROM
PREQUALIFIED BIDDERS WHO ATTEND THE PRE-BID CONFERENCE.

RANK	VENDOR NO./NAME	QUANTITY	UNIT PRICE	AMOUNT	UNIT PRICE	AMOUNT	TOTAL BID	% OF LOW BID	% OF EST
0	-EST- ENGINEER'S ESTIMATE						\$ 7,225,330.41	105.6730%	100.0000%
1	159C KIEWIT WESTERN CO.						\$ 6,837,444.05	100.0000%	94.6316%
2	011A AMES CONSTRUCTION INCORPORATED						\$ 9,895,000.00	144.7178%	136.9488%
=====									
ITEM CODE	ITEM DESCRIPTION	QUANTITY	UNIT PRICE	AMOUNT	UNIT PRICE	AMOUNT	UNIT PRICE	AMOUNT	
SECTION 0001 BID ITEMS									
201-00000	Clear and Grub	1.000 L S	7500.0000	7500.00	45000.0000	45000.00	105000.0000	105000.00	
202-00001	Rem Structure	1.000 EACH	1000.0000	1000.00	1650.0000	1650.00	1115.0000	1115.00	
202-00015	Rem Headwall	4.000 EACH	500.0000	2000.00	360.0000	1440.00	815.0000	3260.00	
202-00033	Rem Pipe	2.000 EACH	435.0000	870.00	830.0000	1660.00	3150.0000	6300.00	
202-00190	Rem of Conc Median Cover M	26.000 SY	6.0000	156.00	22.0000	572.00	41.0000	1066.00	
202-00200	Rem Sidewalk	170.600 SY	7.0000	1194.20	35.0000	5971.00	48.0000	8188.80	
202-00203	Rem Curb and Gutter	198.000 LF	8.0000	1584.00	6.0000	1188.00	14.0000	2772.00	
202-00220	Rem Asphalt Mat	6760.000 SY	3.0000	20280.00	4.0000	27040.00	10.0000	67600.00	
202-00240	Rem Asphalt Mat (Planing)	3250.000 SY	3.5000	11375.00	4.0000	13000.00	7.5000	24375.00	
202-00250	Rem Pavement Marking	1000.000 SF	2.0000	2000.00	2.0000	2000.00	2.0000	2000.00	
202-00425	Rem Bridge Railing	86.700 LF	12.0000	1040.40	130.0000	11271.00	155.0000	13438.50	
202-00495	Rem Port Present Str	1.000 L S	10500.0000	10500.00	1800.0000	1800.00	2900.0000	2900.00	
202-00700	Rem Light Standard	8.000 EACH	200.0000	1600.00	700.0000	5600.00	700.0000	5600.00	
202-00810	Rem Ground Sign	5.000 EACH	70.0000	350.00	55.0000	275.00	50.0000	250.00	
202-00831	Rem Traf Sig Head	9.000 EACH	70.0000	630.00	125.0000	1125.00	115.0000	1035.00	
202-00840	Rem Traf Sig Pole	5.000 EACH	800.0000	4000.00	1000.0000	5000.00	970.0000	4850.00	
202-00848	Rem Traf Sig Control+Cab	1.000 EACH	500.0000	500.00	530.0000	530.00	485.0000	485.00	

Tabulation of Bids

Attachment 4 to the Gouger V.S.
Page 2 of 5

DATE : 05/30/02
PAGE : 005 -2

COLORADO DEPARTMENT OF TRANSPORTATION

TABULATION OF BIDS

CONTRACT ID : C13507
REGION : 1

COUNTIES : GILPIN

JAMES CONSTRUCTION, INC.

(0) -EST-
ENGINEER'S ESTIMATE

(1) 159C
KIEWIT WESTERN CO

(2) 01A
JAMES CONSTRUCTION, INC.

LETTING NO. : 02043005
LETTING DATE : 05/30/02
LETTING TIME : 10:00 AM

ITEM CODE	ITEM DESCRIPTION	QUANTITY	UNIT PRICE	AMOUNT	UNIT PRICE	AMOUNT	UNIT PRICE	AMOUNT
202-01130	Rem Gdrail Ty 3	1419.000 LF	2.0000	2838.00	3.0000	4257.00	3.0000	4257.00
202-01300	Rem End Anchorage	2.000 EACH	160.0000	320.00	180.0000	360.00	159.0000	318.00
202-04001	Plug Culvert	1.000 EACH	500.0000	500.00	860.0000	860.00	3100.0000	3100.00
202-04002	Clean Culvert	3.000 EACH	900.0000	2700.00	1000.0000	3000.00	1150.0000	3450.00
203-00010	Uncl Excav (CIP)	121956.000 CY	27.0000	3292812.00	19.8500	2420826.60	38.0000	4634328.00
203-01500	Blading	100.000 HOUR	85.0000	8500.00	110.0000	11000.00	149.0000	14900.00
203-01510	Backhoe	40.000 HOUR	120.0000	4800.00	100.0000	4000.00	150.0000	6000.00
203-01594	Combination Loader	100.000 HOUR	90.0000	9000.00	100.0000	10000.00	120.0000	12000.00
203-01597	Potholing	50.000 HOUR	100.0000	5000.00	225.0000	11250.00	205.0000	10250.00
203-02060	Presplitting	49240.000 LF	5.0000	246200.00	11.0000	541640.00	7.0000	344680.00
203-02300	Rock Scaler	100.000 HOUR	75.0000	7500.00	100.0000	10000.00	270.0000	27000.00
203-02310	Scaler Foreman	40.000 HOUR	70.0000	2800.00	125.0000	5000.00	120.0000	4800.00
206-00000	Str Excav	912.000 CY	7.0000	6384.00	7.0000	6384.00	24.0000	21888.00
206-00100	Str Bkfl (CL 1)	16.000 CY	17.0000	272.00	60.0000	960.00	38.0000	608.00
207-00205	Topsoil	200.000 CY	8.0000	1600.00	60.0000	12000.00	35.0000	7000.00
208-00005	Erosion Log	315.000 LF	8.0000	2520.00	6.6500	2094.75	6.0000	1890.00
208-00011	Erosion Bales (Weed Free)	50.000 EACH	15.0000	750.00	22.2500	1112.50	12.0000	600.00
208-00020	Silt Fence	1175.000 LF	3.0000	3525.00	3.0000	3525.00	2.0000	2350.00
208-00050	Storm Drain Inlet Protecti	5.000 EACH	300.0000	1500.00	750.0000	3750.00	430.0000	2150.00
208-00070	Stabilized Construction En	2.000 EACH	1360.0000	2720.00	1500.0000	3000.00	825.0000	1650.00
208-00110	Sediment Removal and Dispo	50.000 CY	8.0000	400.00	16.5000	825.00	92.0000	4600.00
208-00200	Erosion Control Supervisor	1.000 L S	17000.0000	17000.00	7000.0000	7000.00	11750.0000	11750.00
210-00427	Res Pipe Handrailing	86.700 LF	50.0000	4335.00	25.0000	2167.50	25.0000	2167.50
210-00760	Res Luminaires	3.000 EACH	260.0000	780.00	285.0000	855.00	265.0000	795.00
210-00831	Res Traf Sig Head	8.000 EACH	400.0000	3200.00	250.0000	2000.00	215.0000	1720.00
210-00848	Res Traf Sig Control+Cab	1.000 EACH	1250.0000	1250.00	2800.0000	2800.00	1740.0000	1740.00
211-01115	Rock Reinf (No.10)	8700.000 LF	32.0000	278400.00	33.0000	287100.00	31.0000	269700.00
212-00006	Seeding (Native)	0.530 ACRE	1040.0000	551.20	800.0000	424.00	480.0000	254.40
212-00047	Soil Preparation (Spec)	0.400 ACRE	1500.0000	600.00	5500.0000	2200.00	1400.0000	560.00
213-00003	Mulching (Weed Free)	0.530 ACRE	500.0000	265.00	1600.0000	848.00	690.0000	365.70
213-00061	Mulch Tackifier	80.000 LB	2.0000	160.00	3.0000	240.00	3.0000	240.00
213-00100	Soil Binder	0.130 ACRE	9.0000	1.17	14000.0000	1820.00	1650.0000	214.50
213-00700	Landscape Boulder	20.000 EACH	250.0000	5000.00	225.0000	4500.00	665.0000	13300.00
214-00215	Deciduous Tree (1.5 In C)	5.000 EACH	100.0000	500.00	250.0000	1250.00	280.0000	1400.00
214-01010	Brush Layer Cutting	200.000 EACH	5.0000	1000.00	4.0000	800.00	9.0000	1800.00
250-00100	Environmental Health and S	1.000 L S	3000.0000	3000.00	3000.0000	3000.00	2550.0000	2550.00
250-00110	Health and Safety Officer	20.000 HOUR	66.0000	1320.00	100.0000	2000.00	70.0000	1400.00
250-00120	Material Sampling and Deli	10.000 EACH	200.0000	2000.00	500.0000	5000.00	50.0000	500.00
250-00210	Solid Waste Disposal	1.000 CY	490.0000	490.00	200.0000	200.00	320.0000	320.00
250-00220	Hazardous Waste Disposal	1.000 CY	1185.0000	1185.00	700.0000	700.00	1025.0000	1025.00
304-06000	ABC (CL 6)	1008.000 TON	13.0000	13104.00	30.0000	30240.00	35.0000	35280.00
403-00720	HBP (Patching) (Asph)	300.000 TON	100.0000	30000.00	150.0000	45000.00	77.0000	23100.00

LETTING NO. : 02053005
LETTING DATE : 05/30/02
LETTING TIME : 10:00 AM

CONTRACT ID : C13507
REGION : 1

COUNTIES : GILPIN

COLORADO DEPARTMENT OF TRANSPORTATION

DATE : 05/30/02
PAGE : 005 -3

TABULATION OF BIDS

ITEM CODE			ITEM DESCRIPTION			QUANTITY			ENGINEER'S ESTIMATE			(1) 159C			(2) 011A		
									KIEWIT WESTERN CO			JAMES CONSTRUCTION, INC.					
UNIT PRICE			AMOUNT			UNIT PRICE			AMOUNT			UNIT PRICE			AMOUNT		
403-33851	HBP	Gr S	100)	(PG 64-28	5634.000	TON	42.0000	236628.00	45.0000	255330.00	49.0000	276066.00					
411-10255	Emul	Asph	(SS)		1679.000	GAL	2.0000	3358.00	1.0000	1679.00	5.0000	8395.00					
420-00110	Geotextile	(Drain)	(CL A)		129.100	SY	3.0000	387.30	5.0000	645.50	3.0000	387.30					
502-00100	Drill Hole	Fac Pile Drivin			92.000	LF	35.0000	3220.00	600.0000	52000.00	500.0000	46000.00					
502-11253	Steel File	(HP 12x53)			170.000	LF	21.0000	3570.00	100.0000	17000.00	45.0000	7650.00					
503-00036	Drilled Caisson	(36 In)			41.000	LF	187.0000	7667.00	1000.0000	41000.00	1360.0000	55760.00					
506-00026	Riprap	(6 In)			451.000	CY	68.0000	30668.00	56.0000	25256.00	55.0000	24805.00					
506-00212	Riprap	(12 In)			266.700	CY	70.0000	18669.00	6.0000	6934.20	56.0000	14935.20					
515-00400	Concrete	Sealer			291.300	CY	5.0000	1456.50	6.0000	1747.60	9.0000	2621.70					
601-01000	Conc CL B				5.000	CY	350.0000	1750.00	500.0000	2500.00	620.0000	3100.00					
601-03040	Conc CL D	(Bridge)			17.000	CY	380.0000	6460.00	1200.0000	20400.00	970.0000	16490.00					
601-06150	Conc	(Fatching)			635.400	SF	80.0000	50832.00	20.0000	12708.00	6.2500	3971.25					
601-10050	Shotcrete	Class I			4300.000	SY	137.0000	599100.00	90.0000	387000.00	245.0000	1053500.00					
601-40301	Struct Conc	Coating			939.400	SF	0.6000	563.64	3.0000	2818.20	3.0000	2818.20					
601-40600	Concrete	Tinting			10000.000	SY	9.0000	90000.00	1.0000	35000.00	5.6000	56000.00					
602-00000	Reinf	Steel			2540.000	LB	0.4500	1143.00	3.0000	2540.00	0.5500	1397.00					
603-01180	18 In RCP				359.000	LF	33.0000	11847.00	70.0000	21330.00	115.0000	41285.00					
603-01300	30 In RCP				289.000	LF	52.0000	15028.00	125.0000	36125.00	130.0000	37570.00					
603-01420	42 In RCP				200.000	LF	78.0000	15660.00	175.0000	35600.00	161.0000	32200.00					
603-10480	48 In Plastic				8.000	LF	6.0000	800.00	85.0000	680.00	210.0000	1680.00					
603-50002	2 In Conc Pipe				1710.000	LF	6.0000	10260.00	14.0000	23940.00	52.0000	88920.00					
604-00505	Inlet Ty D	(5 Ft)			1.000	EACH	2436.0000	2436.00	4000.0000	4000.00	4320.0000	4320.00					
604-00510	Inlet Ty D	(10 Ft)			2.000	EACH	3500.0000	7000.00	4800.0000	9600.00	5300.0000	10600.00					
604-00515	Inlet Ty D	(15 Ft)			1.000	EACH	5500.0000	5500.00	5000.0000	5000.00	6960.0000	6960.00					
604-16650	Inlet Ty 16	(T) (Spec)			1.000	EACH	5000.0000	5000.00	5300.0000	5300.00	10630.0000	10630.00					
604-19000	Inlet Spec				1.000	EACH	5000.0000	5000.00	4800.0000	4800.00	8740.0000	8740.00					
604-19205	Inlet Ty R 110	(5 Ft)			1.000	EACH	3550.0000	3550.00	5300.0000	5300.00	6150.0000	6150.00					
604-19210	Inlet Ty R 110	(10 Ft)			6.000	EACH	4350.0000	26100.00	6000.0000	36000.00	7375.0000	44250.00					
606-00301	Gdrail Ty 3	(6-3)			1376.000	LF	15.0000	20640.00	14.0000	19264.00	13.7500	18920.00					
606-02000	End Anchor	(Spec)			2.000	EACH	1200.0000	2400.00	800.0000	1600.00	780.0000	1560.00					
606-10705	Brdg Rail Ty 7	(Spec)			136.700	LF	70.0000	9569.00	200.0000	27340.00	84.0000	11482.80					
607-11580	Fence	(Temp)			300.000	LF	4.0000	1200.00	2.2500	675.00	2.3000	529.50					
607-55100	Wire Mesh				1547000.000	SF	1.0000	1547000.00	2.5000	386750.00	1.9000	293930.00					
608-00000	Conc Sidewalk				90.000	SY	30.0000	2700.00	65.0000	1950.00	3105.0000	9465.00					
608-00010	Conc Curb Ramp				16.000	SY	45.0000	720.00	78.0000	3510.00	34.5000	1248.00					
609-21010	C and G Ty 2 I-B				2562.000	LF	11.0000	28182.00	14.0000	35668.00	9.0000	23058.00					
609-21020	C and G Ty 2 II-B				2829.000	LF	17.0000	48093.00	16.0000	43264.00	11.5000	32533.50					
610-00030	Median Cover Matl	(Conc)			13106.000	SF	7.0000	91742.00	5.0000	65530.00	4.0000	25424.00					
610-00041	Delin	(Flex) (Ty I)			58.000	EACH	30.0000	1740.00	35.0000	1740.00	29.0000	1682.00					
612-00042	Delin	(Flex) (Ty II)			260.000	EACH	25.0000	625.00	875.0000	31.0000	775.00	3640.00					
613-00200	2 In Elec Cond				680.000	LF	11.0000	2860.00	15.0000	3900.00	14.0000	3640.00					
613-00300	3 In Elec Cond				680.000	LF	13.0000	8840.00	17.0000	11560.00	16.0000	10890.00					

COLORADO DEPARTMENT OF TRANSPORTATION

DATE : 05/30/02

Tabulation of Bids

Attachment 4 to the Gouger V.S.
Page 4 of 5

PAGE : 005 -4

TABULATION OF BIDS

LETTING NO. : 02053005
LETTING DATE : 05/30/02
LETTING TIME : 10:00 AM

CONTRACT ID : C13507
REGION : 1

COUNTIES : GILPIN

(0) -EST-			(1) 159C		(2) 011A	
ENGINEER'S ESTIMATE			KIEWIT WESTERN CO		JAMES CONSTRUCTION, INC.	
ITEM CODE	ITEM DESCRIPTION	QUANTITY	UNIT PRICE	AMOUNT	UNIT PRICE	AMOUNT
613-01200	2 In Elec Cond (P)	1717.000 LF	10.0000	17170.00	15.0000	25755.00
613-01300	3 In Elec Cond (P)	755.000 LF	14.0000	10570.00	17.0000	12835.00
613-04000	Inst Conduit	920.000 LF	20.0000	18400.00	12.0000	11040.00
613-10000	Wiring	1.000 L S	4000.0000	4000.00	8000.0000	8000.00
613-40012	Light Std Foundation Spec	2.000 EACH	300.0000	600.00	17000.0000	34000.00
613-50200	Lighting System	1.000 EACH	4000.0000	4000.00	30000.0000	30000.00
614-00011	Sign Panel (CL I)	49.000 SF	20.0000	980.00	28.0000	1372.00
614-00012	Sign Panel (CL II)	9.000 SF	23.0000	207.00	30.0000	270.00
614-01502	Steel Sign Post (2 In Rd)	44.000 LF	17.0000	748.00	16.0000	704.00
614-01552	Steel Sign Post (2.5 In Rd)	10.000 LF	34.0000	340.00	60.0000	600.00
614-10130	Illuminated Sign	2.000 EACH	1500.0000	3000.00	2200.0000	4400.00
614-70117	Ped Sig Face (16)	6.000 EACH	600.0000	3600.00	1100.0000	6600.00
614-70336	Traf Sig Face (12-12-12)	8.000 EACH	1000.0000	8000.00	1000.0000	8000.00
614-70560	Traf Sig Face (12-12-12-12)	2.000 EACH	1300.0000	2600.00	1500.0000	3000.00
614-72886	Intersection Detect Sys (C	7.000 EACH	7000.0000	49000.00	6000.0000	42000.00
614-72890	Span Wire Cable	315.000 LF	5.0000	1575.00	15.0000	4725.00
614-80000	Flash Beacon	1.000 EACH	1700.0000	1700.00	3800.0000	3800.00
614-84010	Sig-Light Pole Steel (1)	3.000 EACH	15000.0000	45000.00	13000.0000	39000.00
614-84000	Traf Sig Pole Steel	1.000 EACH	1400.0000	1400.00	1400.0000	1400.00
614-85362	Sig-Light Span Wire Pole (	1.000 EACH	3000.0000	3000.00	3500.0000	3500.00
614-86240	Ctrler (Ty 170)	1.000 EACH	9500.0000	9500.00	30000.0000	30000.00
614-87424	Fiber Optic Cable (S Mode)	2310.000 LF	15.0000	34650.00	8.0000	18480.00
619-06120	12 In Duct Iron Pipe	250.000 LF	55.0000	13750.00	275.0000	68750.00
619-10100	10 In Weld Steel Pipe	92.000 LF	100.0000	9200.00	120.0000	11040.00
619-10310	32 In Weld Steel Pipe	86.000 LF	200.0000	17200.00	250.0000	21500.00
619-71516	2 In Air and Vacuum Valve	1.000 EACH	4000.0000	4000.00	8600.0000	8600.00
619-73016	2 In Blow Off	1.000 EACH	500.0000	500.00	1100.0000	1100.00
619-78048	6 In Fire Hydrant	1.000 EACH	3500.0000	3500.00	7600.0000	7600.00
620-00002	Field Office (CL 2)	1.000 EACH	8500.0000	8500.00	45000.0000	45000.00
620-00012	Field Lab (CL 2)	1.000 EACH	8500.0000	8500.00	36000.0000	36000.00
621-00425	Detour	1.000 L S	30000.0000	30000.00	80000.0000	80000.00
625-00000	Const Surveying	1.000 L S	60000.0000	60000.00	50000.0000	50000.00
626-00000	Mobilization	1.000 L S	600000.0000	600000.00	400000.0000	400000.00
626-01000	Public Info Services	1.000 L S	35000.0000	35000.00	35000.0000	35000.00
627-00005	Epoxy Pmnt Mkg	18.000 GAL	75.0000	1350.00	160.0000	2880.00
627-00012	Pmnt Mkg Paint	45.000 GAL	50.0000	2250.00	70.0000	3150.00
627-00025	4 In Pmnt Mkg Tape (Rem)	100.000 LF	3.0000	300.00	800.0000	800.00
627-01000	Preform Plastic Pmnt Mkg (	242.000 SF	9.0000	2178.00	10.0000	2420.00
627-30325	Plastic Pmnt Mkg (Ty B) (W	192.000 SF	17.0000	3264.00	22.0000	4224.00
627-30330	Plastic Pmnt Mkg (Ty B) (X	758.000 SF	8.0000	6064.00	10.0000	7580.00
628-00001	Brdg Girder + Deck Unit	1.000 EACH	90000.0000	90000.00	50000.0000	50000.00
630-00000	Flagging	14800.000 HOUR	25.0000	370000.00	19.0000	281200.00

COLORADO DEPARTMENT OF TRANSPORTATION

DATE : 05/30/02
PAGE : 005 -5

<http://www.dot.state.co.us/bidding/BidTabArchives/2002Bids/053005.htm>

8/23/2004

Tabulation of Bids

Attachment 4 to the Gouger V.S.
Page 5 of 5

TABULATION OF BIDS

LETTING NO. : 02053005
LETTING DATE : 05/30/02
LETTING TIME : 10:00 AM

CONTRACT ID : C13507
REGION : 1

COUNTIES : GILPIN

ITEM CODE	ITEM DESCRIPTION	QUANTITY	(0) -EST- ENGINEER'S ESTIMATE		(1) 159C KIEWIT WESTERN CO		(2) 011A JAMES CONSTRUCTION, INC.	
			UNIT PRICE	AMOUNT	UNIT PRICE	AMOUNT	UNIT PRICE	AMOUNT
630-00007	Traf Ctrl Inspection	104.000 DAY	135.0000	14040.00	125.0000	13000.00	100.0000	10400.00
630-00012	Traf Ctrl Mgmt	235.000 DAY	400.0000	94000.00	330.0000	77550.00	400.0000	94000.00
630-80001	Flash Beacon (Port)	2.000 EACH	1115.0000	2230.00	1100.0000	2200.00	1400.0000	2800.00
630-80336	Barricade (3 M-B) (Temp)	3.000 EACH	300.0000	900.00	250.0000	750.00	300.0000	900.00
630-80341	Const Traf Sign (A)	80.000 EACH	84.0000	6720.00	100.0000	8000.00	80.0000	6400.00
630-80342	Const Traf Sign (B)	7.000 EACH	130.0000	910.00	150.0000	1050.00	150.0000	1050.00
630-80343	Const Traf Sign (C)	4.000 EACH	157.0000	628.00	175.0000	700.00	200.0000	800.00
630-80344	Const Traf Sign (Spec)	252.000 SF	20.0000	5040.00	25.0000	6300.00	20.0000	5040.00
630-80355	Port Mesg Panel	3.000 EACH	15000.0000	45000.00	25000.0000	75000.00	24500.0000	73500.00
630-80360	Drum Channel Dev	150.000 EACH	55.0000	8250.00	60.0000	9000.00	80.0000	12000.00
630-80380	Traffic Cone	75.000 EACH	14.0000	1050.00	20.0000	1500.00	18.0000	1350.00
SECTION TOTALS				\$ 7,225,330.41		\$ 6,837,444.05		\$ 9,895,000.00
CONTRACT TOTALS				\$ 7,225,330.41		\$ 6,837,444.05		\$ 9,895,000.00

