

**The Value of the Otter Creek Coal Tracts to the State of Montana:
The Dangers of Relying on the Norwest Corporation Appraisal**

**A Report Prepared for Submission to the Montana Land Board
On the Norwest Appraisal of the Otter Creek Tracts**

for

**Northern Plains Resource Council
and
Natural Resources Defense Council**

by

Power Consulting

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July 31, 2009

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Executive Summary

The State of Montana owns coal lands in the Otter Creek drainage of the Tongue River Valley of southeastern Montana. It hired Norwest Corporation to analyze the market value of that coal to help inform the Montana State Land Board as it considers if, when, and on what terms it might offer those lands for lease. In particular, if these lands were to be offered for lease, what should be the minimum upfront payment (bonus bid) that the State should require from potential bidders for the right to develop that State coal?

A market valuation or appraisal seeks to determine the price that a well-informed willing buyer and willing seller would agree on given the market context in which the land or product is sold. Analyzing and understanding that market context is crucial to any appraisal. Just as one could not determine the fair market value of a residence or commercial property in a particular Montana city without carefully studying the local real estate market, the same is true when seeking to establish the value of a mineral deposit.

Norwest Corporation's (Norwest) *Montana Otter Creek State Coal Valuation (Appraisal)*¹ provides only a brief review of the market into which the Otter Creek coal would be sold. It correctly characterizes that market in the following terms: "Coals with high sodium content share a limited market due to slagging problems they cause in certain types of power plant boilers. *This limits the market for high sodium coals to a small number of mid-western electric generating plants and some industrial plants.*"² This characterization is consistent with the more detailed market analysis Norwest did in a 2006 report to the Montana Department of Natural Resources and Conservation (DNRC).³

Unfortunately, Norwest does not incorporate this market analysis into its Appraisal. Instead the Appraisal is based on the total recoverable coal estimated to be located in the Otter Creek Tracts. That physical quantity of coal is simply assumed to be saleable into an unspecified market for a price at or above existing Powder River Basin mine mouth prices. This contradicts Norwest's own characterization of the market available for Otter Creek coal as "limited to a small number of mid-western generating plants" and replaces it with a sweeping characterization of the market as effectively unlimited in the last two paragraphs of the Appraisal.⁴

¹ Norwest Corporation, Salt Lake City, Utah 84111, submitted to the Montana Department of Natural Resources & Conservation, Trust Land Management Division, Helena, MT 59620-1601.

² Emphasis added. P. 2-4. This warning about "limited markets" for Otter Creek coal is repeated elsewhere in the Appraisal (pp. 2-3 and 2-5).

³ "Otter Creek Property Summary Report," submitted to Great Northern Properties and Montana Department of Natural Resources and conservation, July 12, 2006, pp. 4-1 to 4-5, Table 4.1, and Figure 4.1.

⁴ Only in the last two paragraphs of the Appraisal does Norwest refer to the available market for the coal it is supposed to be valuing. There, Norwest refers to a second-hand summary memo that was submitted to DNRC by Wesco Resources, one of the primary coal developers in the Otter Creek area and sponsor of

The size of the market into which Otter Creek coal will be sold is crucially important to the valuation of that coal. This is true for several reasons:

- First, full production of coal from the Otter Creek Tracts would involve a very large increase in the production of Montana high-sodium coal. Soon after start up, the proposed Otter Creek mines would be producing almost twice as much coal as Montana has sold each year over the last decade.
- Second, 80 to 90 percent of the coal Montana exports is sold to four northern Midwest states, North Dakota, Minnesota, Wisconsin, and Michigan, where some electric generators have built boilers that can handle Montana's high-sodium coal.
- Third, 90 to 95 percent of the coal produced in Montana is sold in the northern tier of states stretching east and west from Montana where Montana has a transportation cost advantage relative to Wyoming coal.

This means, as Norwest admits, that Otter Creek coal will have to compete to displace the coal from existing **Montana** coal mines currently serving this limited market. Such competition to sell such a large amount of coal into a limited market is certain to drive coal prices down. In addition the inroads that Otter Creek coal is able to make would be at the expense of other Montana coal producers.

Despite the fact that Otter Creek coal would need to compete to displace existing coal suppliers to enter this market, the Appraisal assumes that Otter Creek coal would realize a mine-mouth price per ton that is almost twice the projected mine-mouth coal price for other Powder River Basin coal. This is an unlikely outcome of competition for market share. This result is partially a result of Norwest exaggerating the transportation distance savings that Otter Creek coal would have over Wyoming's southern Powder River Basin coal. Norwest puts this distance advantage as 372 miles when it is actually 208 miles, only about half of what the Norwest Appraisal assumes. Because transportation costs are the primary determinant of the delivered price of coal, this has a major impact of Norwest's estimated mine-mouth price of Otter Creek coal and the bonus bids the State of Montana can expect. Norwest's high estimated mine-mouth price is also the result of it focusing on a single potential customer for Otter Creek coal, the Hoot Lake generating stations in Fergus Falls, where earlier Norwest analysis had found implicit mine-mouth coal prices to be several fold higher than the average for all generating plants in that market area.

the Tongue River Railroad. (Memo to: Monte Mason [DNRC] From: Doug Day [Wesco Resources], Dated: May 11, 2007, Re: MT Economic Benefits. According to DNRC, Wesco Resources contends that this market analysis, which was actually undertaken by another entity, Global energy Decisions, contains proprietary information, and so, apparently, was not shared with Norwest. Norwest relied solely on the memo and Wesco Resources' assertion that that market analysis supported full development of the Otter Creek Tracts. The problems associated with Norwest's reliance on the Day memo in the absence of the underlying data on which that memo is based is discussed further on page 8.

Norwest's estimates of the value of Otter Creek coal and the bonus bids that the State of Montana can expect are also problematic due to the use of a very low cost for the railroad infrastructure that would have to be built in order to market the Otter Creek coal. The costs of that railroad have recently been reported by the sponsor of the Tongue River Railroad to be twice as high as earlier estimated. Incorporating these higher railroad costs into Norwest's comparative lease analysis indicates that that bonus bids would be zero or negative even if the costs of the railroad were only to increase by about 40 percent.

The Norwest Appraisal was prepared based on data gathered before October 2008. The dramatic changes in economic conditions since then render it an inappropriate guide to current coal markets. The important changes include the decline in commodity prices, including energy prices. Coal prices reached peak levels prior to October 2008 and have fallen dramatically since then. Natural gas prices have fallen even more dramatically, partly on the basis of much larger estimates of existing North American natural gas supplies. Cheaper natural gas undermines the market for coal in electric generation. In addition, the national economy has fallen into the worst economic downturn since the Great Depression. This has depressed the market for electricity as well as coal. The financial crisis that compounded the current recession has also made it difficult to raise capital for large risky projects such as the proposed Otter Creek mines and the Tongue River Railroad. Finally political support for carbon regulation has continued to increase with Congress actively exploring legislation to cap carbon emissions. The reality of carbon regulation and the uncertainty about the form it will take and the costs it will impose on coal users are also depressing coal markets.

The markets for Otter Creek coal are also likely to be limited by other competitive forces. These include increased competition from Wyoming coal as a result of both the Tongue River Railroad and a competing proposal to allow Wyoming coal to reach traditional Montana coal markets in the northern Midwest: the Dakota, Minnesota, and Eastern Railroad upgrade supported by Canadian Pacific. In addition, the State of Montana's partner in the proposed development of the Otter Creek Tracts, Great Northern Properties, is developing a coal beneficiation plant in North Dakota along the northern rail route to Montana's traditional coal markets.

In calculating financial benefits to the state government and local schools of developing the Otter Creek Tracts, the likely displacement of current coal producers by the Otter Creek mines needs to be taken into account. What is gained by the production and sale of Otter Creek coal may be lost as a result of the reductions in coal sales from other Montana mines.

The Norwest Appraisal is incomplete, lacks foundation, contains major conceptual and factual errors, and has been outdated by changed economic circumstances. It cannot be relied on as a basis to structure the leasing of the Otter Creek Tracts. Before proceeding with leasing the Otter Creek Tracts the Montana Land Board must commission a new appraisal that avoids the numerous defects outlined in the following comments. Given the current economic, energy market, and financial conditions, it would be imprudent to lease the Otter Creek Tracts at this time on the basis of this Appraisal.

The Market for Otter Creek Coal

Norwest Corporation was engaged by the Montana State Land Board to value the Otter Creek Coal Tracts. That valuation was to determine the fair market value that Montana could expect from potential bidders seeking to lease the rights to develop those coal deposits. That estimated fair market value could then be used by the State Land Board to set the minimum bonus bid that the State would accept from potential developers. State law requires such a publicly reviewed appraisal prior to offering school trust coal properties for competitive leasing. These comments provide a critical economic review of that Norwest Corporation's (Norwest) *Montana Otter Creek State Coal Valuation (Appraisal)*.⁵

Norwest used two different approaches to determine the fair market value of the Otter Creek Coal Tracts. One was an analysis of the bonus bids associated with comparable coal leases in Montana (the comparable-lease approach), and the other was an analysis of the net present value of the revenue that could be earned from the development of the Otter Creek Coal Tracts (the income approach).

The comparable-lease approach identified relatively recent leases of Montana coal and the bonus bids paid to obtain those leases. After adjusting those bonus bids to recognize the unique characteristics of the Otter Creek Tracts, those bonus bids, expressed in terms of cents-per-ton-of-extractable-coal, were applied to all of the state-owned coal in the Otter Creek Tracts.

The income approach developed a mining plan for the Otter Creek Coal Tracts and estimated the costs of operating the mines (what was necessary to extract the coal) over a 40-year period. The per-ton value of the coal at the mine mouth was estimated by looking at the delivered price that potential customers were currently paying for Montana coal and subtracting out the reduced transportation costs associated with Otter Creek coal. All of the Otter Creek coal was assumed to be produced at the costs indicated by the mine model and sold at this unit cost to produce a stream of net revenue to the coal developer. This stream of net revenues, discounted in order to include a reasonable return on the developer's investment, indicated the "surplus" that the State of Montana could expect to collect as bonus bids in a competitive-lease process.

Determining the Size of the Market for Otter Creek Coal

It is important to note that both of these approaches assumed that there was a market into which all of the recoverable coal in the Otter Creek Tracts could be sold at prices similar to those indicated by other recent sales of Montana coal. That is, both approaches used the estimates of the total amount of recoverable coal and simply assumed that as soon as the Otter Creek mines could be brought on line, existing coal

⁵Norwest Corporation, Salt Lake City, Utah 84111, submitted to the Montana Department of Natural Resources & Conservation, Trust Land Management Division, Helena, MT 59620-1601.

markets would support the purchase of the annual output of those new mines at current or higher prices.

In order to evaluate these crucial assumptions, we will review the size of the mines at Otter Creek that Norwest assumes are constructed. We will then look at how Norwest has characterized the size of the market into which that coal would be sold.

The Relative Size of the Mines that Would Develop the Otter Creek Coal

The Appraisal assumes a dramatic expansion of Montana coal mining if the Otter Creek Tracts are put up for lease. As a reference point, since 1979 when Montana coal mining first surpassed 30 million tons per year, the average total annual coal production has been 37 million tons. For the most recent decade, 1997-2007, annual Montana coal production has been about 40 million tons per year.⁶

The Norwest Appraisal is built around two mines at Otter Creek producing a total of 35 million tons of coal each year for years 6 through 40 of their operation (during the first five years of operation, the production will “ramp up”). That is, the Appraisal assumes that the leasing of the Otter Creek Tracts will nearly double the level of Montana coal production.

The Otter Creek coal mining operations envisioned by the Appraisal would be huge compared to existing Montana coal mining operations. The largest coal mining operation in Montana in 2007 was the Spring Creek Mine, which produced 15.7 million tons of coal that year. This is less than half of what Norwest assumes the Otter Creek Tracts would produce.⁷ Alternatively, if we use as a reference point the average recoverable coal that was associated with each of the three Montana coal leases that Norwest used as the “comparables” for its Appraisal, the recoverable coal associated with the Otter Creek mines would be 26 times as great as Norwest’s comparables: 1,309 versus 50.7 million tons.⁸

Clearly the projected Otter Creek mining operations around which Norwest built its Appraisal involves a very large increase in Montana coal mining. It is the production of that large volume of Otter Creek at a comfortable profit that is the basis of the \$37 million dollar bonus bid Norwest projects that the State of Montana would receive if it put these coal deposits up for lease. Implicit in these projections of a dramatic increase in the level of Montana mining is a very large increase in the market open to Montana coal.

⁶ Coal Tables Workbook--2008 Update, Department of Environmental Quality, State of Montana, Table C-2. www.deq.state.mt.us/energy/HistoricalEnergy/index.asp

⁷ Ibid. Table C-4.

⁸ Norwest Appraisal Table 2.1. There is a transcription error in Table 2.2. Instead of listing the recoverable coal from the Spring Creek lease (MT 88405), the recoverable coal from the West Hay Creek mine (WYW151634) is listed. Norwest, however, did not use the erroneous number in its calculations of the bonus bid per recoverable ton of coal.

Limits on the Amount of Coal that Can Be Extracted from the Otter Creek Tracts

Montana law and regulation limits the strip mining of coal on alluvial valley floors in order to preserve essential hydrologic functions and protect agricultural land.⁹ The Otter Creek Tracts, as the name suggests, border and in some cases lie within what state geologists have mapped as the alluvial valley floor. It is possible that because of that fact some of the recoverable coal in the Otter Creek Tracts could not be mined.

Norwest Corporation in its 2006 “Otter Creek Property Summary Report” developed four potential mining units for the Otter Creek Tracts. In doing so, it identified the lands that were on the alluvial valley floor and calculated the recoverable coal with and without the coal from the alluvial areas. Norwest explained that “mining could possibly be restricted from this area, should it be classified as an AVF [alluvial valley floor] by the state.”¹⁰

The recoverable coal in the alluvial valley floor was calculated by Norwest Corporation in 2006 to be 87 million tons. However, the total estimated recoverable coal was 1,370 million tons. The alluvial valley floor coal was 6.4 percent of that total. Norwest’s Appraisal is flawed because it fails to exclude the alluvial valley floor coal from its estimate of what is available to be mined.

The Current Market for Montana Coal

Between 2001 and 2007, 90 to 95 percent of Montana coal sales have gone to seven states: Montana, North Dakota, Minnesota, Wisconsin, Michigan, Washington, and Oregon. Geography largely dictates the concentration of sales in these states. They are the states where Montana has a transportation cost advantage relative to Wyoming coal. Often that transportation cost advantage is small and both Montana and Wyoming coal is sold into these markets.¹¹

Since 2001 each state has seen similar percentage increases in sales to these states, about 10 to 15 percent. That, however, masks some changes in competitive advantage. Montana, for instance, has lost all sales to Illinois where Wyoming sales have increased 78 percent. In Michigan and Indiana, Montana sales have been relatively static or declining while Wyoming sales have increased 69 percent and 40 percent, respectively. On the other hand, Montana sales to North Dakota and Minnesota have expanded while Wyoming sales have contracted. Montana sales to Washington have also increased

⁹ Administrative Rules of Montana, Strip & Underground Mine Reclamation Act, 17.24.801 and 802. Montana regulations do not necessarily ban strip mining from lands classified as alluvial valley floors by geologists. The definition of alluvial valley floor provided in the regulations includes only those alluvial areas “holding streams where water availability is sufficient for subirrigation or flood irrigation agricultural activities.” In addition, if the pre-mining land type on the valley floor is “undeveloped rangeland that is not significant to farming,” the ban on strip mining may not apply. ARM 17.24.802. Clearly judgment about “sufficient for agriculture” and “significant to farming” are involved, too.

¹⁰ Submitted to Great Northern Properties and Montana Department of Natural Resources and Conservation, July 12, 2006, p. 3-2 to 3-6 and Table 3.1.

¹¹ Domestic Distribution of U.S. Coal by Destination State, Consumer, Origin and Method of Transportation, 2007, Energy Information Administration, December 2008.

while Wyoming has just begun to compete there. In Oregon, Wyoming sales have been steady but Montana sales have fallen to zero. Meanwhile Wyoming has not been able to gain market share in Montana just as Montana has not been able to sell into Wyoming markets.

Looking at the ebb and flow of sales over this time period, it is clear that it is in the northern states closest to Montana where Montana's market has expanded. The farther south the location, the more inroads Wyoming has made because of its transportation cost advantage. It is the distance by rail to the various electric generators that tends to dictate the markets to which Montana has access.

Norwest's Evaluation of the Market for Otter Creek Coal

Otter Creek coal has a relatively high sodium content. High-sodium levels in coal cause "slagging" in boilers and can interfere with air-pollution-control devices. Because of this, as the Appraisal states, "Coals with high sodium content share a limited market due to slagging problems they cause in certain types of power plant boilers. This limits the market for high sodium coals to a small number of mid-western electric generating plants and some industrial plants."¹²

In an earlier report referenced in the Appraisal, Norwest was more explicit about exactly where that "small number of Mid-western generating plants" that represented the "limited market" available for Otter Creek coal were located.¹³ In a section in that report labeled "Marketing," Norwest points out that Otter Creek coal ash ranges from 5.8 to 8.8 percent sodium, a high level compared to other coals in the western U.S. In the southern Powder River Basin of Wyoming, the sodium averages 1.2 percent while coals in Colorado average about 2.5 percent sodium. Norwest also points out that "most plants avoid burning high sodium coals. Exceptions include the following ten plants which are within the competitive area for Otter Creek currently accepting higher sodium coals."¹⁴ Norwest then proceeds to list the 10 plants: 5 in Minnesota, 4 in Michigan, and 1 in Wisconsin. Those electric-generating plants that Norwest says "would likely constitute the initial target market for Otter Creek coals" are shown on the map below, which was taken from that Norwest report.¹⁵ Note that transportation costs generally limit the area where Montana has a transportation-cost advantage over Wyoming. These areas include a northern tier of states: North Dakota, Minnesota, Wisconsin, Michigan, and Illinois to the east and Washington and Oregon to the west.

The ten electric generators identified by Norwest as the "initial target market for Otter Creek coals" have a total consumption of about 20 million tons of coal per year, only 57

¹² P. 2-4. This warning about "limited markets" for Otter Creek coal is repeated elsewhere in the Appraisal (pp. 2-3 and 2-5).

¹³ Otter Creek Property Summary Report, Volume I of II, submitted to Great Northern Properties and Montana Department of Natural Resources and Conservation, July 12, 2006. The reference in the Appraisal is to a report with the same title dated November 16, 2005, which we assume is simply an earlier draft of the report cited here.

¹⁴ Ibid. p. 4-1.

¹⁵ Ibid. p. 4-1 and Figure 4.1.

percent of the annual production level that Norwest envisions from the Otter Creek Tracts. In fact, Norwest expressed concern that between 2004 and 2005 this market had “decreased to 16.1 million tons. The difference in consumption rates appears to be due to the intrusion of coal from the Southern PRB [Wyoming Powder River Basin].”¹⁶

Electric Generation Plants That Would Likely Constitute the Initial Target Market for Otter Creek Coals

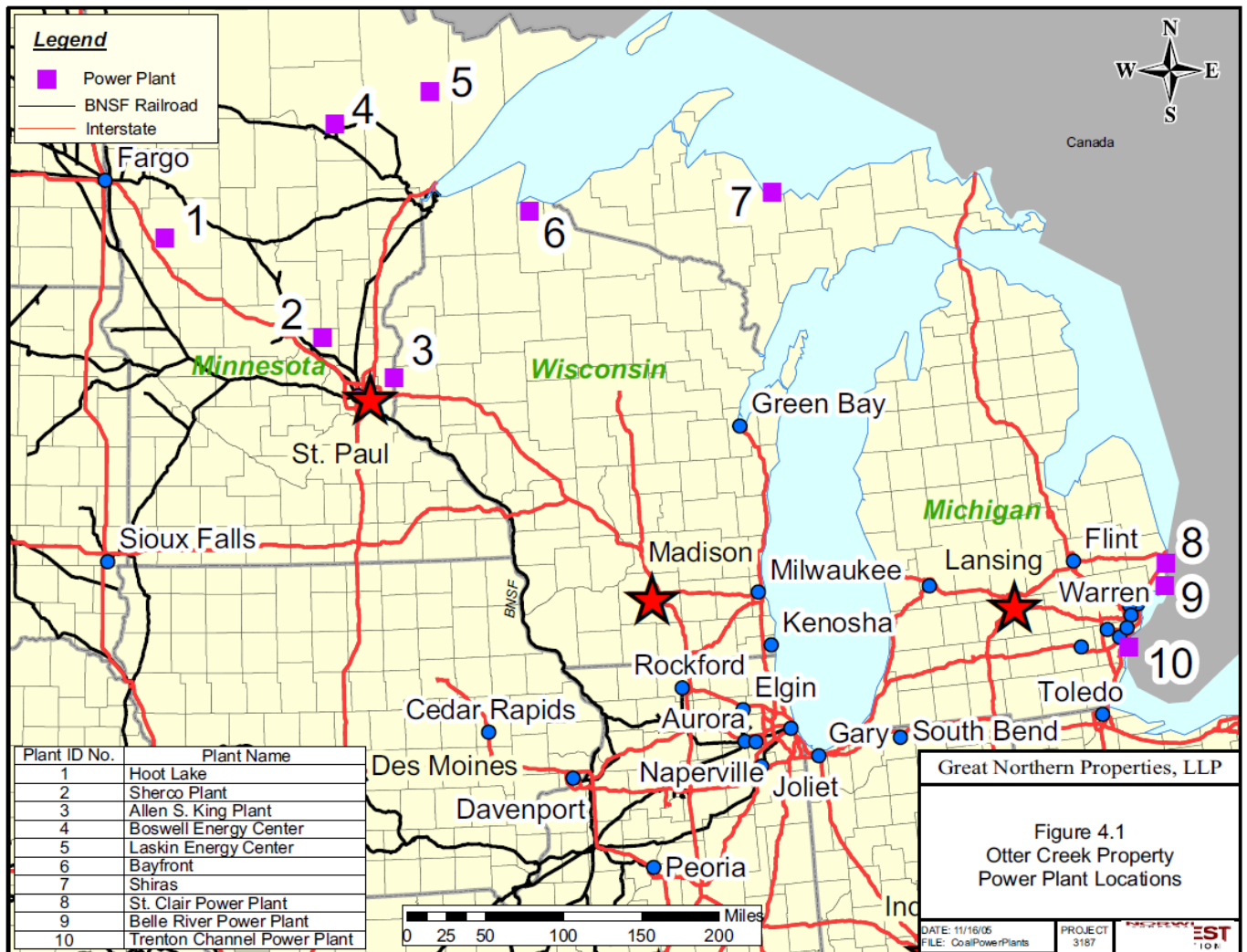


Figure 4.1 from Norwest Corporation’s “Otter Creek Property Summary Report,” Vol. 1, July 12, 2006

Of course, all of these plants are currently served by other coal suppliers. Even if Otter Creek was able to displace 100 percent of the current coal suppliers, more than 40 percent of the Otter Creek coal would have to be sold to plants other than those identified by Norwest in its 2006 report as the “initial target market.” Norwest recognizes

¹⁶ Ibid.

this, commenting that “The volume of coal shipped from Montana to the high sodium-accepting power plants is only about 20 million tpy [tons per year]. Careful effort developing a solid market strategy will be necessary to determine how best to nudge into this market without destroying whatever price discipline, if any, currently exists.”¹⁷

Note that Otter Creek coal would have to both “nudge” its way into this already served market, displacing the current coal producers, as well as fending off competition from Wyoming coal producers. Also note that in doing so, both Otter Creek coal and further inroads into this market from Wyoming coal are likely to drive the price of the high-sodium coal downward as Otter Creek and Wyoming mines compete to take as much of that market away from current suppliers as possible.

In the 2006 Report Norwest also identified another group of 14 generating plants with an annual consumption level of about 30 million tons of coal that might serve as a market for Otter Creek coal. These were plants “also served by Montana mines neighboring Otter Creek, including Rosebud, Absaloka, Decker, and Spring Creek.” The four Colstrip power plants in Montana were included in this additional potential market for Otter Creek coal.¹⁸ This statement underlines who the current coal suppliers are that Otter Creek would have to displace: They are almost exclusively Montana coal suppliers. Only one of the initial ten generation plants and none of the second group of 14 plants were served by a non-Montana mine. The market Norwest expects to support the Otter Creek mine will first have to be taken from other Montana coal mines, ton for ton. As described by Norwest, this is a zero-sum game for Montana: Otter Creek coal can be sold only at the expense of other Montana coal producers.

Norwest suggests that Otter Creek coal is likely to be successful in competing against other Montana coal suppliers for this limited market because the existing mines are old and have high and rising costs. As Norwest puts it:

“All these mines have been operating for many years and are experiencing higher stripping ratios in the range of 3-4:1 at Spring Creek, climbing up to 9:1 and higher at Decker. These higher strip ratios put these mines at a disadvantage with respect to Otter Creek’s projected operating costs, as they each must move more waste to uncover the same amount of coal as at Otter Creek. This higher [operating cost], however, will be offset by Otter Creek’s higher capital recovery / depreciation costs.”¹⁹

Norwest could have added that the cost of financing a spur railroad to carry the coal to Miles City would also be a burden these existing mines will not have to carry.

In the Appraisal, Norwest has laid out how the strip ratio associated with the Otter Creek mines it has modeled would vary over time as the mining proceeds. Interestingly, the

¹⁷ Ibid. p. 4-4.

¹⁸ Ibid. p. 4-4, and Table 4.1.

¹⁹ Ibid.

strip ratio for the larger of the two Otter Creek Logical Mining Units (LMU 5), which will be the source of about two-thirds of the production, begins at 2.3 but within the first five years rises to 4.1. The weighted average of the strip ratio for that mine over its life is 4.5. The strip ratio for the smaller of the LMUs is lower, about 2.5 until the 16th year of production when it rises to 3 and above. The weighted average over the life of that mine is 3.3. Across the life of both mines the average strip ratio is 4.1.²⁰ That is not a low strip ratio. For its comparative analysis, the Appraisal utilized a data base of 31 federal lease sales for the Powder River Basin between 1991 and 2007.²¹ That data base included the strip ratio for each of those leases. The weighted average of those strip ratios was 2.95. That means that Otter Creek coal mines are going to face strip ratios that are more than a third higher than other Powder River Basin leases from the last two decades. Even if we inappropriately ignore the high capital costs associated with opening a new mine and funding a new railroad, mining the Otter Creek coal, overall, is not going to be an unusually low-cost operation.

Eastern Montana has large deposits of coal, much of which is not as isolated and without infrastructure as the Otter Creek coal. As existing mines that have transportation infrastructure in place and equipment on-hand approach uneconomic strip ratios, they will be looking to expand into new coal deposits or open new mines. It is those potential “new” Montana operations with which Otter Creek will also have to compete.

Norwest’s Conclusions about the Market for Otter Creek Coal

In its Appraisal and in its earlier analysis of the markets for Otter Creek coal, Norwest came to the following conclusions:

- i. The high-sodium character of the Otter Creek coal limits the market into which it can be sold.
- ii. The market for Otter Creek coal is “a small number of mid-western electric generating plants.”
- iii. Almost all of those Mid-western electric-generating plants are currently served by other Montana coal mines.
- iv. Otter Creek coal will have to compete with and displace other Montana coal mines to gain a share of that limited market.
- v. That competition will put downward pressure on the price for coal that all Montana mines will face as they compete for market share in this limited market.
- vi. Wyoming appears to be making inroads into the geographic area where transportation costs previously created a protected market for Montana coal.

After making these points about the market that is available for Otter Creek coal, Norwest, inexplicably, reverses itself in the second to last paragraph of the Appraisal and declares that “the potential market for Otter Creek coal will reach 30 million tons per year by 2011 and 33 million tons per year by 2015...[I]t is feasible that the market could

²⁰ Appendix C

²¹ Table 2.1

handle the simultaneous startup of both [Logical Mining Units].” In other words, the Appraisal contradicts itself by concluding that there is not a limited market for high-sodium coal in Montana’s market area and, instead, asserts that Montana could nearly double its coal sales in the next five years by simply leasing the Otter Creek Tracts.

Norwest itself provides no analysis, data, or argument in support of this conclusion that is contradicted by its previous characterization of the market for Montana’s high-sodium coal. Instead it cites “market analysis information provided to the DRNC by Global Energy Decisions.” This is an incorrect characterization of what information was provided to whom. Wesco Resources, a Billings coal development company, hired Global Energy Decisions to provide an updated market analysis for the Otter Creek coal.²² According to DNRC, that study has been labeled proprietary in character by Wesco Resources and not available for review by others.²³ The Manager of Wesco Resources, Doug Day, submitted a very general, two-page statement of conclusions and accompanying tables from that market study to DRNC in a memo dated May 11, 2007.²⁴ That very general two-page memo was then forwarded to Norwest, who, in turn, relied on it, and cited to it, in the Appraisal. Apparently, Norwest, like DNRC, did not review the actual analysis that Global Energy Decisions conducted on the markets for Otter Creek coal. Norwest simply accepted the unsubstantiated conclusions it received third-hand from a self-interested party.

It should go without saying that in order to be able to fully and meaningfully comment on this Appraisal, it is necessary to have access to the data and analysis that the Appraisal utilized in reaching its conclusions. Here, as detailed in the preceding paragraph, the Appraisal relied upon the Day memo, which is founded on a market analysis by Global Energy Decisions that no one – not the State of Montana, not Norwest, not the public – has been allowed to view. The effect of keeping the market analysis under wraps is that part of the Appraisal has, in effect, been cordoned off from evaluation and review. Given the public nature of this process, the failure to ensure access to the Global Energy Decisions’ market analysis is a significant issue and must be remedied.

Moreover, the inability to examine and consider Global Energy Decisions’ market analysis is critically important since the size and character of the market for the Otter Creek high-sodium coal is central to the Appraisal. The conclusion that the State of Montana can expect to receive a minimum of \$37.3 to \$57.2 million in up-front bonus bids if this coal is put up for lease is tied to the quantity of coal that is assumed to be **saleable at a projected price**, not the amount of coal that is assumed to be **recoverable**. The Norwest Appraisal reached its conclusion by focusing on the coal that

²² Wesco Resources is the parent company of Tongue River Railroad Inc. Wesco Resources is also the parent of CoalMont LLC, which was formed to acquire and develop coal reserves in the Ashland and Otter Creek areas.

²³ Email from Monte Mason, DNRC, to Donovan Power, July 17, 2009. Mr. Power, working as a research assistant to Dr. Power, was seeking access to the coal-market data supporting Norwest’s Appraisal. Norwest had cited the Doug Day memo to DNRC to support its market conclusion. Mr. Power was seeking the study on which the memo had been based. He was told that Wesco Resources’ Doug Day was not willing to release the report because it contained proprietary information.

²⁴ See footnote 7, p. 3-12, of the Appraisal as well as the References section, page 4-1.

was **recoverable** rather than following through with its analysis of the limited market available for this coal. That Appraisal is explicit in that it simply estimated a value per ton and then multiplied by the amount of recoverable coal contained in the Otter Creek Tracts.²⁵ The error in this approach is that both the price that will be paid for this coal and the quantity that can be sold are determined by the size and character of the market. Norwest has shown that “Coals with high sodium content share a limited market due to slagging problems. . . . This limits the market for high sodium coals to a small number of mid-western electric generating plants. . . .”²⁶ This fundamental market reality is ignored in Norwest’s Appraisal calculations.

This market reality has been widely discussed. Chuck Kerr, the President of Great Northern Properties, which owns the alternate sections intermixed with the state sections in the Otter Creek Tracts, laid out these market problems in a presentation to the Montana Land Board on July 17, 2006:²⁷

The fact that we do have a different coal needs to be taken into consideration. Unfortunately, high sodium coal is not in high demand. The market is very finite. The southern Powder River Basin [Wyoming] right now is mining and selling over 400 million tons of coal per year. The high sodium market is 20 million tons per year. So, that is the market we are looking at. Even though we have a wonderful resource you have to look at what you can do with the coal if you dig it out of the ground. Right now that market is being fed by Spring Creek, Decker, and another mine or two. So in order to break into that market you will have to either displace that market or figure out a way to handle sodium.

Note the reference to the market for high-sodium coal being only 20 million tons per year and that market is currently being served by existing Montana mines while the Appraisal projects Otter Creek production to be 35 million tons per year.

Mr. Kerr went on to indicate that both of the alternatives he mentioned to open markets for Otter Creek coal might be possible. He argued, as does the Appraisal, that over time, the existing mines serving these high- sodium markets would face higher and higher strip ratios and, therefore, higher operating costs; accordingly, a new mine at Otter Creek would initially have lower strip ratios and might be able to displace the existing Montana mines now serving the high-sodium market. However, and ignoring the fact that the economics of developing the Otter Creek tracts will also be determined by the capital cost associated with opening a new mine and building a railroad, existing Montana mines that already have access to transportation and have mining equipment in-hand are likely to expand into new coal deposits or open new mines. It is also against those “new” Montana coal operations that Otter Creek coal will have to compete.

²⁵ See pages 2-1 and 2-10.

²⁶ Appraisal, p. 2-4.

²⁷ Montana Land Board minutes, p. 15.

Mr. Kerr also saw hope on the technological front: “We also believe that due to modern technology sodium will be taken care of, new plants will be built and designed that will be able to handle high sodium. . . . We think there is a package that we can put together to be able to break into other markets other than high sodium. So we think that technology will advance.” Although technological breakthroughs are always possible, it is not appropriate to base an appraisal on such hopes or beliefs. It is unclear *why* new coal-fired electric generators would be designed to handle high-sodium coals when there are large quantities of low-sodium coals available from Wyoming’s southern Powder River Basin at very low cost. In addition, since Mr. Kerr made this presentation to the Land Board, uncertainty about carbon regulation and the economy has led to most planned coal-fired plants in the nation to be put on hold or abandoned.

At the current time (July 2009), Mr. Kerr’s earlier characterization of the market for Otter Creek coal remains correct. To sell that coal, existing Montana mines will have to be displaced or a currently unknown technological breakthrough to handle the sodium problem will have to be discovered. Basing public policy on the latter would be an imprudent gamble. Understanding the former is crucial to a real appraisal of the value of the Otter Creek Tracts to the State of Montana.

The Impact of Coal Markets on the Value of the Otter Creek Coal to Montana

As discussed above, Otter Creek coal will have to compete with existing Montana mines (as well as with Wyoming mines) in order to break into the limited geographically accessible high-sodium coal market that Norwest has described. That competition to displace existing suppliers has important implications for the price that the Otter Creek mines can expect to receive for their coal. It also has implications for the benefits that the State of Montana and its schools can expect to receive from leasing the Otter Creek Tracts.

Norwest’s Determination of Otter Creek Mine Mouth Coal Prices

Norwest calculates that Otter Creek coal will be sold at a mine-mouth price of about \$20 per ton even though the average mine-mouth price across the Powder River Basin is estimated to be \$11 per ton, which is only a little more than half of that price. This is a spectacular result.

Norwest estimated the mine-mouth price that Otter Creek coal would receive by calculating what the delivered cost of coal would be to a western Minnesota site, Fergus Falls, the site of the Otter Tail Power Corporation’s Hoot Lake coal-fired plants. Those plants are currently served by the Montana Spring Creek Mine near Decker, Montana, close to the Wyoming border.

To estimate the Otter Creek mine-mouth price, Norwest used an estimated mine price for 8,800 Btu/lb Powder River Basin coal as of September 2008 at \$11 per ton.²⁸ To this Norwest added the transportation costs of getting that coal to Fergus Falls. This produced a delivered price \$33.17 per ton.²⁹ Norwest estimated that the transportation costs of moving Otter Creek coal to the same location would be over 40 percent cheaper because of the more direct transportation route through Miles City. Norwest assumes that the developer of the Otter Creek coal would be able to pocket all of these transportation cost savings (\$9.03 per ton). Adding this transportation cost savings to the \$11 per ton regional mine-mouth coal price suggested a mine-mouth coal price for Otter Creek coal of \$20.03 per ton. Norwest adjusted this for the actual BTU content and sulfur credits of Otter Creek coal and concluded that the coal from the Otter Creek Tracts would sell initially for \$19.97 per ton.³⁰

Recall that this figure is almost twice as high as the regional mine-mouth coal price. Norwest then proceeded to value **all** of the recoverable coal in the Otter Creek Tracts at this high mine-mouth price. Of course, all of the coal could not be sold to that one particular electric generator, the Hoot Lake plants, on which Norwest chose to focus. In 2004-2005 that plant received only 4 percent of the coal shipped to the 10 plants Norwest, in its 2006 Otter Creek Property Summary report, identified as the initial market for Otter Creek coal, for a total of only 600,000 tons of coal in 2005 or less than 2 percent of the expected annual output of the Otter Creek mines at full production. Norwest assumed that all of the remaining market into which Otter Creek coal might be sold would produce the same high mine-mouth price. But Norwest knew that that was not the case.

In its 2006 Otter Creek Property Summary Report, Norwest did this same calculation for each of the ten electric-generating stations that it believed would be the initial market for Otter Creek coal, including the Hoot Lake plants at Fergus Falls. The average mine-mouth price for Otter Creek coal that Norwest calculated for these ten plants that spread across the market area it had identified was \$4.61 per ton in 2004 and \$3.82 per ton in 2005, only a fifth or a quarter of the mine-mouth price it calculates now.³¹ Interestingly, the mine-mouth price for Otter Creek coal that Norwest calculated in 2006 for the Hoot Lake plants outside of Fergus Falls was \$13.95 for 2004 and \$16.70 in 2005. These were significantly higher Otter Creek mine-mouth prices than for any of the other potential purchasers of Otter Creek coal that Norwest analyzed. That is, Norwest in the current Appraisal chose the site that allowed it to calculate the highest mine-mouth price in 2006 and based its projection of the price that Otter Creek could get for **all** of its coal on that one example, carefully ignoring the other nine plants that indicated much lower mine-mouth prices for Otter Creek coal because they were located farther away from Otter Creek.

²⁸ Norwest cites SNL Energy's Coal Report, Sept. 8, 2008, Vol. 4, Issue 35. The Energy Information Administration's Coal News and Markets lists the Powder River Basin 8,800 Btu coal spot market price for the first two weeks of September 2008 also at \$11 per ton.

²⁹ Fergus Falls, MN, is the headquarters of Otter Creek Power which also operates the Hoot Lake coal-fired generating stations outside of Fergus Falls using Spring Creek Mine coal.

³⁰ Appraisal p. 3-11.

³¹ Table 4.1, page 4-2. Norwest commented that these were "unrealistic" mine-mouth prices.

The broader 2006 analysis clearly indicates that choosing just one site to characterize the entire market could be a seriously misleading and biased approach, especially if the location that produced the highest estimated mine-mouth price was the site chosen as “typical.” Norwest was aware of this problem in 2006 and urged that “In further work on the mine feasibility, special focus should be directed to these elements [the low estimated mine-mouth prices for Otter Creek coal].”³² Instead of doing this focused work for the Appraisal, Norwest simply used the highest-valued site from its 2006 analysis and ignored all the contradictory information.

In evaluating the plausibility of Norwest’s high mine-mouth price, it is important to keep in mind that the Otter Creek mines would sell about twice as much coal into this market as is currently being sold. It is difficult to imagine how this additional amount of coal could be absorbed in that market without having a depressing effect on coal prices.

Norwest had already indicated that Otter Creek would have to compete to “nudge into” a relatively limited market. Its Appraisal is also based on the sale of a very large amount of coal into that limited market while also competing with Wyoming coal, which is also attempting to enter that same market. In that situation, it is startling to find Norwest projecting such a high mine-mouth price for Otter Creek coal. Norwest essentially assumes that Otter Creek will operate in a non-competitive setting where Otter Creek can proceed to take away large amounts of market share from other Montana mines but none of the other economic players will respond. This is not how markets work. One would expect all of the following responses from other important economic players as Otter Creek seeks to take over a significant part of a limited existing market:

- i. Existing mines that are serving these electric generators will lower their prices to try to maintain their market share. Given most of their original investment costs are already depreciated existing mines can compete down to a price that just covers their operating costs. Otter Creek, on the other hand, has to set prices at levels that will recover the new investment in the mine, expensive mining equipment, and a new railroad.
- ii. Electric-generating plants will be aware of the transportation cost savings that Otter Creek will enjoy and will negotiate vigorously to capture some of those cost savings for themselves.
- iii. If Otter Creek is actually enjoying a mine-mouth price almost twice what other regional mines are receiving, the railroad companies will recognize that and will attempt to capture some of that value in higher transportation charges.
- iv. If \$20 per ton mine-mouth prices can actually be earned, the vast array of coal mining possibilities across Montana and Wyoming will be explored for other mines that can earn this level of return. Existing coal mines will

³² P. 4-4.

expand into new coal deposits and potential new coal mines will come on line to take advantage of the profitable opportunities like those Norwest imagines for Otter Creek. Many or most of them will not need to build expensive new railroads.

All of these competitive responses will tend to significantly reduce the price Otter Creek can get for its coal and the volume of coal that Otter Creek will, in fact, be able to sell. In that sense, the Appraisal's findings are unrealistic because it assumes a noncompetitive market where all economic actors but Otter Creek fatalistically surrender to Otter Creek's efforts to take over existing markets while enjoying an unusually high price for their product.

Norwest has proceeded with its analysis as if the Otter Creek mine were just one of many small players in a large regional coal market. In that setting, any one coal mine could change its production significantly without expecting to have any impact on the market and the price it could get for its coal. But that is not the case with Otter Creek and the market it faces. The market, as Norwest has said, is "limited" "to a small number of mid-western electric generating plants." At the same time, the projected annual production from Otter Creek is almost twice the size of that entire market. In this setting, Norwest's approach to estimating the value of the Otter Creek coal is entirely inappropriate.

Errors in Norwest's Calculation of the Otter Creek Mine-Mouth Price

As discussed above, Norwest made conceptual errors in concluding that all of the Otter Creek coal could be sold for a \$20 per ton mine-mouth price. In addition, it appears to have made some calculation errors.

Norwest's high mine-mouth price is based on adding the transportation cost savings associated with shipping coal from Otter Creek rather than shipping it from Wyoming's southern Powder River Basin mines to the regional mine-mouth price for Powder River Basin coal. The reduction in the shipping distance is the difference between shipping the coal from the southern Powder River Basin to Miles City and shipping the coal from Otter Creek to Miles City. The rest of the route to Fergus Falls is the same for coal from either of the sites.

In its calculation of this shipping reduction when it compared shipping from both sites to Miles City, Norwest used the correct mileage.³³ The distance saved is 208 miles (293 – 85). But in the calculation that Norwest used to establish the \$20 per ton mine-mouth price, it assumed the distance saved was almost 80 percent larger, 372 miles. It obtained this number by subtracting what it said was the distances to Fergus Falls from the southern Powder River Basin mines and the Otter Creek mines (913 – 541). However, neither of these numbers is accurate. The distance from the southern Powder River Basin is 813 miles not 913 miles and the distance from Otter Creek is 605 miles,

³³ Appendix B, second page of tables: "FOB Otter Creek Mine Coal Price Estimation Using Miles City, MT.

not 541 miles. If the correct numbers are subtracted, 813 – 605, the reduced shipping distance is the same as the results shown by Norwest using the Miles City destination: a reduction of 208 miles. Norwest's own numbers confirm this. Independent analysis of the rail miles confirms it. Norwest's 2006 report on Otter Creek confirms it.³⁴

As one might expect, an 80 percent error in the calculation of the location advantage that Otter Creek coal has over southern Powder River coal has a substantial impact on Norwest's calculation of the value of the Otter Creek coal. Recall that Norwest values all of the recoverable coal in the Otter Creek Tracts at the \$20 per ton mine-mouth price it calculated using this exaggerated location advantage.

Appendix B of the Appraisal provides Norwest's "detailed price calculations" of its estimate of a mine-mouth price of \$21.58 for Otter Creek coal. If that same calculation is carried out using the correct distance savings, the estimated mine-mouth price would have been \$17.37, which is about 20 percent lower. That would have reduced the estimated revenue from the sale of the Otter Creek coal by 20 percent. This would have reduced the estimated bonus-bid value by a much larger percentage as most of the costs would remain fixed while the revenues were reduced.³⁵

Using the \$20 per ton mine-mouth price, Norwest estimated that the proposed Otter Creek mines would earn a net revenue of \$87.3 million in discounted net present-value terms. That was the basis for calculating the bonus bids that would be made for the coal. That net revenue was what was projected to be earned on more than \$3.8 billion in coal sales, which was also expressed in discounted net present-value terms. That is, the net revenue is only about 2.3 percent of the gross sales revenue. This is not as tiny a return as it might appear since a 10 percent discount rate was used, implying that investors were earning a 10 percent return on their investment. The 2.3 percent earning on total sale is in addition to that return on investment.

However, a very small change in the projected mine-mouth price of the Otter Creek coal would wipe out all of the 2.3 percent earnings on total sales that is the basis for the calculated bonus bid. In fact, a price reduction in the mine-mouth price of the Otter Creek coal of just over 3 percent would reduce the bonus bid to zero. A 20 percent reduction to correct for Norwest's exaggeration of the transportation distance savings would entirely eliminate the bonus bid and indicates that the State of Montana would have to make a substantial payment to potential bidders to get them to lease the coal.

³⁴ The coal market analysis in the 2006 study showed the distance from Otter Creek to the Hoot Lake generating stations to be 600 miles. Table 4.1.

³⁵ The taxes tied to gross value of sales would change as the mine-mouth price changed. These total about 32.5 percent of the price. The taxes paid on net revenue (state and federal income taxes) would also vary as the value of the coal and, therefore, the net revenue varied. They total about 22 percent of net revenue.

Recent Changes in Coal Markets and the Economic Environment

Norwest concluded the research for its Appraisal in October 2008. Energy markets, economic conditions, and political reality have changed significantly since then. Those changes are very important when evaluating Norwest's conclusions based on those earlier conditions.

The most important economic conditions that have changed since October 2008 include the following:

- i. In the years and months leading up to October of 2008, commodity prices, including energy prices, were rising rapidly. Since then commodity prices have plummeted, including energy prices.
- ii. Natural gas prices had risen very dramatically, making that fuel appear to be too scarce and expensive to be relied on to generate electricity. Coal appeared to be the "obvious" low-cost fuel for electric generation that faced an expanding market.
- iii. A federal government that was hostile to or at least skeptical of the idea of human-caused global warming and rejected the idea of regulating carbon has been replaced with one that is more receptive to limiting and then reducing carbon emissions.
- iv. The estimated cost of the Tongue River Railroad has doubled.
- v. The expansion of the American economy, including "booms" in various sectors, that began following the 2001 recession, has ended in a steep downturn that already has lasted longer than any downturn since the Great Depression.
- vi. Investment funds, which once were readily available at relatively low interest rates for even quite risky projects, have largely dried up and are not available for even relatively safe investments.

Each of these earlier conditions would have created a more favorable climate for investments in expanding coal supplies than presently exists. Let me discuss each of these changes in turn.

The End of the Commodity Bubble (i)

Some observers explained the rise in commodity prices, including metal, energy, and food prices, as due to a permanent increase in the demand for these land-based resources as a result of the economic growth taking place in China, India, Indonesia, Brazil, etc. As with the technology stock boom of the 1990s and the real estate boom of the 2000s, we were assured that these high and rising prices were here to stay. The speculative, irrational exuberance that feeds such bubbles was ignored. Although it was the collapse of the financial pyramid and its impact on the real economy that brought demand tumbling down, rapid expansion in the supply of many commodities that was driven by the high prices ultimately would have also brought those commodity prices

down. We have been through enough commodity-price cycles that we should be skeptical about any claim that “this one is permanent.”

Changes in Energy Markets (ii)

As energy prices rose during the 2000s, exploration and development of new oil, natural gas, and coal supplies expanded, too. Very supportive federal policies encouraged thorough exploration and development of most public lands. Sources of supply that previously had been considered too expensive to produce became economically viable. Alberta’s tar sand came into large-scale commercial production. Shallow natural gas sources such as coal bed methane were exploited on a large scale. Shale fields of very low porosity have been successfully developed using fracturing techniques. Largely as a result of this successful development of “unconventional” natural gas sources, the U.S. Potential Gas Committee increased the estimated natural gas reserves in the nation by 35 percent earlier this year. At the same time, natural gas prices that had risen as high as \$13 per million BTU in July of 2008 had fallen to about \$3.50 by late July of 2009. This has led some producers, such as EnCana, to shut in their higher-cost wells. Natural gas again appears to be cheap and plentiful. Given its substantially lower carbon emissions, this may again make it an attractive alternative to coal as the fuel for electric generation.

Coal prices have also tumbled. In October of 2008 when Norwest finished its research for the Appraisal, Powder River Basin coal commodity spot prices were \$14.50 per ton. In mid-July 2009 that price had fallen to \$8.75. Coal prices nationwide have also tumbled dramatically. Appalachian coal, for instance, has fallen from between \$140 and \$150 per ton to \$50 per ton or less.³⁶ Across the nation many proposed and planned coal-fired electric generating facilities such as the Highwood Station outside of Great Falls have been canceled, delayed, replaced with natural gas generators, or blocked by regulators. Some of this, of course, is due to the depressed state of the economy, especially the decline in demand by industrial customers. But the difficulties that proposed new coal-fired generators have faced preceded the current economic downturn.

The Increased Likelihood of Carbon Regulation (iii)

As a result of the 2008 November election, the likelihood of federal regulation of carbon emissions has increased significantly. Even before the federal government began to act, some leading states and regional groups of states had begun considering carbon regulation. The U.S. House of Representative has passed comprehensive energy legislation that caps carbon emissions. The character of carbon regulation and the relative costs it implies for coal and other fossil fuels remains uncertain as the Senate has not yet acted and the legislative process is far from finished. Even after a carbon regulation framework is adopted, it is likely to be implemented over a lengthy period of time. Coal, as the most carbon intensive of the fossil fuels, is the most vulnerable to a carbon tax, a market-set price on carbon emission permits, and/or the cost of removing

³⁶ EIA Coal New and Markets, July 20, 2009.

carbon from the effluent stream associated with burning coal.³⁷ The uncertainty about the cost of carbon regulation is likely to discourage large financial commitments to new coal-fired electric generators for some time. This could have a substantial impact on the size of the future market for coal.

The Cost to Montana of the Necessary Railroad Infrastructure (iv)

The cost of the transportation infrastructure that is necessary for the development of the Otter Creek Tracts is an important element in the Appraisal's calculation of the likely bonus bids that potential developers would be willing to make to lease that coal. At the estimated cost of a railroad running from the Otter Creek Tracts to Miles City of \$187 million dollars, Norwest calculated that the bonus bids that the State of Montana would otherwise receive for the coal would be reduced about 70 percent to pay for the railroad. Norwest's comparative-lease approach funds the railroad dollar-for-dollar through reductions in the bonus bids paid to the State and Great Northern Properties, the other owner of the Otter Creek Tracts. The State of Montana thus contributes a proportional share of the cost of the railroad through a reduction in the bonus bids it is expected to receive.³⁸ According to the Norwest Appraisal, the implicit cost to fund this private railroad is 12.3 cents per ton in reduced bonus bids or about \$70 million for Montana's share of the coal.

In Norwest's income approach to the Appraisal, it calculated the net present value of the cost of funding the necessary railroad link to Miles City. Norwest assumed that the coal developer who obtained the lease on the Otter Creek Tracts would lend the cost of the rail link to a railroad company that would build the railroad and repay the loan at 4 percent interest over fifteen years. That below-market-interest-rate loan represents a real cost to the coal developer and Norwest assumes it is entirely taken out of the bonus bids that coal developers will offer to obtain the lease. In the income approach the bonus bid is reduced from \$54.6 million to \$37.3 million or about \$17.3 million by the need to subsidize the building of the private railroad.³⁹ Because the cost is simply the below-market interest on a loan, its impact on the projected bonus bids is smaller than the impact of the railroad's costs on the bonus bids under Norwest's comparative-lease approach discussed in the previous paragraph. In that approach the full cost of the railroad was shouldered by the coal developers, not just an interest subsidy.

³⁷ Because of the tendency of high-sodium coal to foul pollution control equipment as well as coal gasification equipment, regulation of carbon and the pressure to capture and sequester carbon or reduce the carbon content of the effluent stream may even further discourage the use of high sodium coal like the Otter Creek coal.

³⁸ Appraisal Table 2.5 and pages 2-9 and 2-10. Based on the percentage of the recoverable coal that is owned by the State of Montana (44 percent), its share of the \$187 million railroad costs would be about \$82 million. Norwest adjusts the cost of the railroad per ton of coal produced for the purchasing power of the dollar in earlier years because it is using comparative coal leases that were entered into at different years in the past. As a result, the implicit cost collected to fund the railroad is somewhat less than the full estimated \$187 million cost.

³⁹ Appraisal p. E-2 and pp. 3-11 and 3-12. Norwest does not explain its calculation of the benefit to Montana if the state does not have to subsidize the construction of the railroad. It simply asserts a value in the Executive Summary that is not discussed in the main body of the report. We calculate that the cost may be about a third greater than this, about \$23 million, compared to Norwest's \$17.3 million estimate.

All of these calculations assume that the estimate of the cost of the rail line from the Otter Creek Tracts to Miles City will be \$187 million. Norwest does not provide any citation for this estimated cost. Assumedly, it is taken from projections provided by the Tongue River Railroad, which estimated the cost to be something over \$300 million for the entire line between Miles City and the Spring Creek spur of BNSF railroad. In early July 2009, however, the Tongue River Railroad announced that its revised estimates of the cost of the railroad had almost doubled to \$600 million.⁴⁰ If, as one would expect, the cost of the portion of the Tongue River Railroad from Miles City to the Otter Creek Tracts area south of Ashland, will also double, this has significant implication for Norwest's Appraisal. If the cost of the necessary rail link is \$374 million rather than \$187 million, Norwest's comparative-leases approach would have to subtract about 25 cents per ton from the bonus bids associated with the comparative leases rather than the 12 cents Norwest used. That, however, would lead to a bonus bid that was substantially negative, -\$39 million rather than +\$31 million. That is, the State of Montana would have to pay potential coal developers to lease the coal. If the cost of the necessary rail link were only to rise 44 percent, less than half what the Tongue River Railroad is now forecasting it will cost, the bonus bid to the State of Montana would be zero.

Norwest's income approach to the estimation of the bonus bids also has to be adjusted for the doubling of the cost of the rail link. Because in this approach Norwest only assumes that the State of Montana subsidizes the railroad with a loan at a below-market interest rate, the impact is not as great. The bonus bid the state could expect would fall from \$37 million to \$25 million.

From Economic and Energy Boom to Bust (v)

Some of the impetus for the development of the coal in the Otter Creek Tracts was the increasing demand for electricity as the American economy expanded after the recession of 2001. Rising energy prices, including coal prices, seemed to signal a shortage of coal and expanding market opportunities. It is not surprising that Montana coal developers saw opportunities for further coal development in Montana. As it turned out, the American economy began to contract in early 2008 and is now deep in the worst recession since the Great Depression. Speculative commodity activity including energy markets kept many commodity prices rising even though the economy was actually contracting. Coal prices reached their peak in mid-2008 just as Norwest was completing its research for the Appraisal.

During 2009 the demand for just about everything has declined and along with it the demand for the fuels that energize our industrial and commercial sectors. The U.S. Energy Information Administration reported in the July 2009 *Electric Power Monthly* that "The drop in coal-fired generation was the largest absolute fuel-specific decline from April 2008 to April 2009 as it fell by 20,551 thousand megawatt hours, or

⁴⁰ *Billings Gazette*, July 8, 2009, Associated Press story quoting "Railroad developer Gustafson." http://www.billingsgazette.com/news/state-and-regional/montana/article_b89b2974-6be5-11de-bd82-001cc4c03286.html

13.9 percent...The April decline was the third consecutive month of historically large drops in coal-fired generation from the same month in the prior year, though it was not as precipitous as the drop of 15.3 percent in March or the decline of 15.1 percent in February. The April national level decline was the fourth-largest percentage decrease in generation since 1974.”⁴¹ The EIA also reported that the U.S. coal demand fell to the lowest levels since 2002 during the first quarter of 2009.

As a result of this decline in coal sales, some of the nation’s largest coal companies are reporting declines in profits or actual losses for the second quarter of 2009. Peabody Energy reported that its second quarter profits declined by two-thirds.⁴² Arch Coal, which mines much of its coal in the Powder River Basin, reported a loss for the second quarter, citing a 20 percent drop in sales and production cutbacks. Arch Coal executives identified the same economic problems discussed above: declines in industrial activity, low natural gas prices, and the build up of huge stockpiles of coal.⁴³

The decline in the industrial demand for electricity has led investment advisory firms to warn investors about the weak and declining value of the stocks of utility companies for whom industrial customers are a dominant sector. *Morningstar* in late July 2009, for instance, asked rhetorically whether the falloff in demand for electricity from industrial firms because of the economic downturn was “A Ticking Time Bomb in Utility Earnings?” “All else equal, we view utilities that rely heavily on industrial sales as less attractive even in a favorable economic environment. This reliance becomes a still-greater liability during a cyclical downturn; manufacturers tend to cut the lights first and keep them off longest.” This clearly has implications for the demand for coal and the strength of the market for coal.⁴⁴

The Financial Crisis and the Ability to Raise Capital for Risky Projects (vi)

Proposals to build the Tongue River Railroad and develop the various coal deposits in the Ashland and Otter Creek region have been around for about 30 years. Although the portion of the Tongue River Railroad from Miles City to south of Ashland, which could serve the Otter Creek Tracts, has been permitted since 1986, it has yet to be built. Similarly, the Montco coal mine that this section of the railroad was intended to serve was not developed, and the mining company’s lease on the coal was canceled by the State of Montana due to a lack of due diligence by the lessee. During much of the 1990s and 2000s, capital flowed freely, probably too freely, to many different and relatively risky, potentially high-yield projects: telecommunications, energy development, technology startup companies, real estate development, for example. Yet the Tongue River coal and railroad projects were not able to raise the capital necessary to proceed.

⁴¹ http://www.eia.doe.gov/cneaf/electricity/epm/epm_sum.html?src=email

⁴² *Wall Street Journal*, July 21, 2009, <http://online.wsj.com/article/BT-CO-20090721-711115.html>

⁴³ *New York Times*, July 24, 2009, <http://www.nytimes.com/aponline/2009/07/24/business/AP-US-Earns-Arch-Coal.html>

⁴⁴ By Ryan McLean, July 23, 2009. <http://finance.yahoo.com/news/A-Ticking-Time-Bomb-in-ms-1701340187.html?x=0&.v=1>

American and worldwide capital markets are now in disarray although, hopefully, no longer teetering on the brink of collapse. Although interest rates are relatively low and at times near zero, financial institutions are hesitant to lend or invest. Having clearly underestimated the risks associated with past investments, financial institutions are now focused on digesting those bad investment rather than on taking on new, risky investments. It is to that traumatized and partially frozen financial market that the developers of the Otter Creek Tracts and the Tongue River Railroad will be turning for the hundreds of millions of dollars needed to fund these coal projects.

As discussed above, these coal and railroad developers will be seeking this massive infusion of capital just as the American economy finds itself mired in the worst economic downturn since the Great Depression. As of mid-2009, that economy has yet to show signs of sustained recovery and most economic observers expect ongoing economic difficulties well into 2010. The depressed demand for just about everything has reduced the demand for electric energy and the coal that is used to produce it. It would be in this depressed economic climate that the State of Montana would be offering to lease the Otter Creek Tracts if it proceeds to put these coal deposits on the market in the near future.

New Competitive Threats to Otter Creek Coal Markets

In addition to the difficult economic and financial conditions that will be faced by potential Otter Creek coal mines and the railroad that is necessary to ship this coal, there are also three additional competitive threats that the Appraisal fails to consider.

The Tongue River Railroad

The Appraisal assumes that only a rail line from near the Otter Creek Tracts to Miles City will be built. That gives Otter Creek coal a transportation cost advantage over both Wyoming's southern Powder River Basin coal and Montana's Decker and Spring Creek mines in serving the northern Midwest markets.

But there are plans for a longer rail line that links Decker to Miles City, namely the Tongue River Railroad, has already received federal permits (although those permits are challenged by legal action in the Ninth Circuit Court of Appeals) and claims that it will find financing once the Otter Creek Tracts are leased and there is assured traffic for that proposed railroad. If the Tongue River Railroad was constructed, it would provide Wyoming's huge southern Powder River Basin mines with significant cost savings for reaching the same markets that Norwest indicates are the targeted markets for Otter Creek coal. Decker and Spring Creek coal would also be provided with a shortcut to the northern Midwest markets. With the Tongue River Railroad in place, the transportation cost advantage on which Norwest's Appraisal bases its high mine-mouth price for Otter Creek coal would shrink dramatically. Competing coal from mines just to the south of Otter Creek would no longer face a long trip to the northwest and then back to the east to reach Miles City and beyond. The competing coal could zip right by the Otter Creek

Tracts on the Tongue River Railroad. As discussed above, if Norwest's projected mine-mouth price for Otter Creek coal is pushed much below \$20 per ton by competition for markets, the projected bonus bids to the state will quickly decline or disappear.

This is not speculation or a new issue. In the 1994 hearings before the Interstate Commerce Commission on the extension of the Tongue River Railroad from the Ashland, Montana, area to the BNSF spur at Decker, creating a continuous path from Miles City to the Wyoming BNSF rail lines, concern was expressed about the use of that rail line by Wyoming coal producers to reach what at that point in time were Montana markets in the northern Midwest.⁴⁵ John Duffield of Bioeconomics submitted a report on "The Tongue River Railroad Extension and the Marketability of Montana Coal."⁴⁶ That report concluded that the mine that the Tongue River Railroad was supposed to support, the Montco Mine and other nearby mines outside of Ashland, would "not be developed until well beyond the turn of the [twenty-first] century – if ever." It also pointed out that providing a shortened rail route for Wyoming coal to the northern Midwest would reduce the transportation cost advantage Montana coal had in reaching that market, raising the likelihood that existing Montana mines would lose part of their market. The Duffield projection that the Ashland area mines would not develop until some time after the turn of the century, if ever, has proved correct.

The federal Surface Transportation Board (STB), in its October 2007 decision on the third phase of the Tongue River Railroad, emphasized that the Tongue River Railroad **would** carry Wyoming coal to northern Midwest markets: "BNSF states that the new routing would benefit it and its utility customers because BNSF would use TRRC [Tongue River Railroad Company] as a bridge carrier for Wyoming coal. BNSF explains that its northern route for Wyoming coal, which runs through Forsyth, MT, would be shortened by the availability of this new line."⁴⁷ ". . . [T]he record clearly shows that BNSF has been providing monetary and staff support for this project, and that TRRC and BNSF have been discussing a potential arrangement whereby BNSF would operate over the Decker to Miles City line."⁴⁸

Great Northern Properties, the owner of the majority of the coal in the Otter Creek Tracts, also expects the Tongue River Railroad to be used by competing coal mines in Wyoming to reach the northern Midwest markets now served by Montana mines, the markets that Otter Creek coal will also seek to break into.⁴⁹

The Tongue River Railroad folks have proposed a common carrier line that goes from Miles City, Montana, down to Spring Creek-Decker spur and would connect with the Burlington Northern-Santa Fe line. They have

⁴⁵ Finance Docket No. 30186 (sub-No. 2), 1994.

⁴⁶ A report for the Northern Plains Resource Council, John Duffield and Chris Neher, Bioeconomics, Inc. Missoula, MT, January 1994.

⁴⁷ STB Finance Docket No. 30186 (Sub-No.3), Tongue River Railroad Company, Inc.—Construction and Operation—Western Alignment, Service Date October 9, 2007, p. 8.

⁴⁸ *Ibid.* p. 12.

⁴⁹ Chuck Kerr, President Great Northern Properties, July 17, 2006, Minutes of the Montana Land Board, p. 15.

been working on that for 20 years and I know there is some concern that that may open competition from the south across this track. We, as Great Northern have been concerned about that as well. . . we believe, structured correctly, we can make sure Montana is adequately protected and, in fact, there may be an opportunity where we can have the Wyoming [coal] developers pay for part of this line. They will use this line to ship their coal across it and we believe there is a price to be paid for that. So we think Wyoming coal can help pay for Montana rail.

Great Northern Properties preferred a rail line that went all the way through from Miles City to the Decker-Spring Creek BNSF spur to the south despite the competition it opened up from Wyoming coal because “. . . if you can solve the sodium issue, maybe technology will do it or this technology that this company [a company working with GNP] has will work, then that rail going south we can start working on not just the finite sodium market but the market that the other PRB mines are selling into. If we’ve got a lower cost of fuel we can be competitive if we can solve the sodium problem. So having access to the south as well as to the north we believe is very important.”⁵⁰ Note the importance of “solving the sodium issue” before Otter Creek coal has access to more than a limited market and the hope for a technological fix.

The Dakota, Minnesota, & Eastern Railroad

The Tongue River Railroad is not the only railroad eyeing a shortcut for Powder River coal getting to northern Midwest electric generators. The Dakota, Minnesota, & Eastern (DM&E) Railroad has also gotten permits to upgrade its rail infrastructure so that it can take advantage of the lengthy and round-about BNSF routes from the southern Powder River Basin to these markets. DM&E recently (September 2007) was purchased by the Canadian Pacific Railway. Currently the BNSF rail lines from the southern Powder River Basin can reach the northern Midwest markets only by either going northwest and then circling back east or going southeast and the circling back north. The Tongue River Railroad would solve the first problem and BNSF is now supportive of that proposal not only because it would make their route more competitive but also because it would help BNSF avoid expensive repairs and upgrades on the longer route and address congestion on their mainline. The DM&E-Canadian Pacific proposal aims to create a different solution by transporting southern Powder River Basin coal directly east towards Minneapolis, Chicago, Detroit, and the Great Lakes (see the map below). Both the Tongue River Railroad and the DM&E Railroad would open the northern Midwest markets that Montana coal currently serves to Wyoming’s southern Powder River Basin coal. As a result, Otter Creek coal will also have to compete directly with Wyoming coal, including Wyoming coal that is not burdened by its high-sodium content.

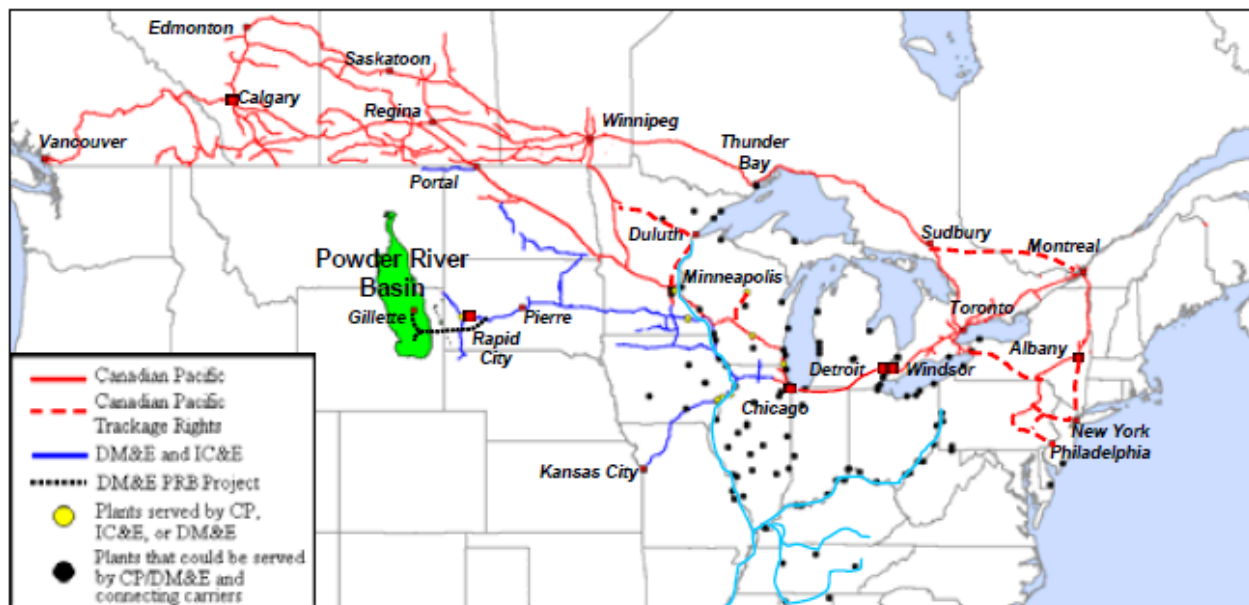
The federal Surface Transportation Board in its October 2007 decision on the Tongue River Railroad noted the role that the proposed DM&E upgrade would play in providing

⁵⁰ Ibid, p. 16.

competition to Montana coal in the northern Midwest markets and to the Tongue River Railroad:⁵¹

As the Board concluded in the 1998 DM&E decision, some markets that use Montana coal might switch to Wyoming coal if DM&E could deliver the coal at a reduced cost. That could happen in the Great Lakes market, which includes power plants served by vessel with rail service to Great Lakes transloading facilities. However, a BNSF-TRRC-BNSF-vessel route would have a mileage saving over existing BNSF routes to some plants in eastern Michigan. Therefore, BNSF/TRRC could lower their joint rate to these plants in response to competitive pressure from DM&E. This could reduce the chance of BNSF and TRRC losing market share. Accordingly, we are satisfied that the construction and operation of the new DM&E line would have little impact on TRRC's proposed line, even where TRRC and DM&E would compete for customers.

Generating and Industrial Plants That Could Potentially Receive PRB Coal Via CP/DM&E and Connecting Carriers



Source: Pace Global⁵²

Of course, neither the DME nor the Tongue River railroads have yet been built. Each is simply a competitive possibility at this point. The point is that the Appraisal fails to factor these competitive threats to Montana's traditional coal markets into its analysis.

⁵¹ STB Finance Docket No. 30186 (Sub-No.3), Tongue River Railroad Company, Inc.—Construction and Operation—Western Alignment, Service Date October 9, 2007, p.19.

⁵² Canadian Pacific Railway's Acquisition of Dakota, Minnesota, and Eastern Railroad: A Positive Development for Coal Shippers, Fourth Quarter 2007.

<http://www.paceglobal.com/paceglobal/pdfs/company/unique-market-analysis/Canadian%20Pacific%20Railway.pdf>

The Great Northern Power Development's South Heart Coal Beneficiation Project in North Dakota

Great Northern Properties Limited Partnership (GNP), the other owner of the coal in the alternating sections of the Otter Creek Tracts, is also attempting to build a coal beneficiation facility in South Heart, North Dakota. Chuck Kerr, the head of GNP, is also the president and CEO of Great Northern Power Development, which is sponsoring the project to upgrade coal, such as North Dakota's lignite, into a cleaner and higher BTU fuel.⁵³ Norwest, the source of the Appraisal that is being reviewed in this report, is also doing the geological studies for this North Dakota beneficiation project.

As *International Mining* describe the proposed technology:⁵⁴

The beneficiation process converts low rank coal into a cleaner and more productive fuel by removing up to 80 percent of its water content, together with ash, sodium, and other impurities that interfere with clean combustion. As well as increasing the thermal value of the coal by 50-60 percent, the upgraded coal is easier to transport and handle, and produces significantly less carbon dioxide, nitrous oxide and sulphur dioxide emissions than if the low grade reserves were to be used without pre-treatment.

The process is said to produce a high-quality coal briquette that could be shipped to electric generators or industrial coal users. The South Heart beneficiation project, however, has been presented as the first step in the process of building a coal gasification plant at the same site in North Dakota. Although construction of the coal beneficiation plant began in 2008, legal challenges to the permitting necessary for the coal beneficiation plant have since delayed construction.

To the extent that such a plant can upgrade North Dakota lignite and produce a product that can be sold into the northern Midwest markets currently served by Montana coal, the South Heart facility could displace existing Montana coal as well as provide competition for Otter Creek coal itself. South Heart is located on the main BNSF rail line linking Montana to its northern Midwest coal markets.

With natural gas prices as low as they currently are and with the U.S. natural gas supply now estimated to be much larger than previously thought, the South Heart coal gasification project may well not go forward. If coal prices remain depressed, the coal beneficiation project may also not proceed for the same reasons that the development of the Otter Creek coal and the Tongue River Railroad may not proceed.

⁵³ See the promoters' press release: <http://www.reuters.com/article/pressRelease/idUS124525+04-Apr-2008+BW20080404> .

⁵⁴ <http://www.im-mining.com/2008/04/06/australian-technology-to-underpin-14-billion-coal-gas-project-in-us/>

Impacts of Otter Creek Coal on School and Government Finance

The Norwest Appraisal and the Letter from the Montana Department of Natural Resources and Conservation that accompanied its distribution detailed revenues that putting the Otter Creek Tracts up for lease could bring to the State of Montana. The DNRC's letter and its Otter Creek Frequently Asked Questions document⁵⁵ point out that these revenues from leasing the Otter Creek Tracts would flow into the Montana School Trust Fund and be used for the support of public education in the state. The Frequently Asked Questions document also lists the various taxes that a mining operation on the Otter Creek Tracts would bring to state and local governments.

In the following analysis, we place these government revenue expectations in the context of the competitive market into which the Otter Creek coal will have to be sold.

The School Trust Fund and the Funding of Public Education in Montana

Although revenues derived from Montana School Trust lands must be spent on public education in Montana, neither the Montana Constitution nor Montana statute specifies exactly how much money the State of Montana should spend on public education. Because revenues from the Montana School Trust Fund cover only a small part of the cost of public education, the Legislature has to decide how much more money needs to be appropriated to supplement the money from the Trust Fund. As a result, having more money flowing from the Trust Fund does not necessarily increase the amount of money that goes to public education. The Legislature can and does estimate how much money is needed to provide a public education of an appropriate quality to students in Montana, takes into account how much money is coming from the Trust Fund, and then adds the amount of money to reach the targeted total level of school funding. If more money is coming from the Trust Fund, the Legislature can reduce the amount of money taken from the State General Fund. In fact, the Trust Fund dollars and General Fund dollars get pooled, establishing a total amount of funds that are used to fund almost all state government programs. In that sense, revenues from the School Trust Fund actually help fund **all** state programs, not just school programs.

At the Land Board meeting on May 19, 2008, during a discussion of the Otter Creek Tracts, this fundamental reality about the funding of public education in Montana was acknowledged. Superintendent of Public Instruction Linda McCulloch was asked by Governor Schweitzer "if the more revenue generated by trust land automatically means more money for the schools or if there were additional steps to funding the education system?" The Superintendent of Public Instruction "verified that more revenue generated by trust land activity does not automatically equal greater funding for schools, and stated that trust land revenue comprises approximately ten percent of education funding." The Governor asked whether a large inflow of money from trust fund lands "would have impacted the amount of money allocated to schools" by the previous legislature that had reduced K-12 education funds? The Superintendent of Public

⁵⁵ http://dnrc.mt.gov/trust/MMB/otter_creek/2009/FAQ.pdf

Instruction responded that “it would not have affected the monies granted by the legislature for K-12 education. The legislature uses the money made by the trust as a basis from which to start building funding for Montana’s schools.”⁵⁶

Because of the relatively small role that school trust funds play in the building of the total budget for public education in Montana and because the Legislature controls that total budget, increases in school trust fund revenue do not by themselves cause an increase in the total level of school funding. That is not to say that there is not benefit to public school funding. As the pool of funds available to fund all state programs rises, it is easier for the Legislature to spend more money on education, just as it is easier for it to spend more money on the provision of all valuable state government services.

Competition within a Limited Market for Additional Coal Sales: Implications for Government and School Finance

As discussed above, the primary market for the high-sodium coal that the Otter Creek Tracts would produce is the same market current served by other Montana coal mines. In addition, to the extent that leasing the Otter Creek Tracts provides a sufficient customer base to allow the Tongue River Railroad to be financed and become a reality, Wyoming coal will become more competitive with existing Montana mines, including Otter Creek mines, in reaching Montana’s traditional markets in the northern Midwestern states.

As outlined in Norwest’s 2006 analysis of the target market for Otter Creek coal, Otter Creek’s gain is likely to be some other Montana coal producer’s loss. In addition, if the Tongue River Railroad allows Wyoming to gain market share in that same limited market, it will also be at the expense of other Montana coal producers. If that may be the outcome, then it is important to consider what the net impact would be on Montana state government finances, school finance, local schools, and existing coal communities.

If Otter Creek coal displaces other Montana coal producers one-for-one, the impact on state coal production taxes (the severance tax, the gross receipts tax, and the Resource Indemnity Tax – RIT) would cancel each other out. Otter Creek would not increase the revenue from those taxes. To the extent that some Montana mines shut down as the Otter Creek mines come on line and reach full levels of production, the local county property tax revenues may simply shift from one Montana coal-producing county to another. That is, property tax revenues would not increase, they would just shift from one Montana mine to another with potentially disruptive, but in the aggregate offsetting, impacts on Big Horn, Rosebud, and Powder River counties.

In this situation of a zero-sum competition, the benefits of a new mine to the state government would have to come from the benefits that derive from Montana actually owning the coal that the Otter Creek Mine would produce: the bonus bids paid to obtain the lease of Otter Creek coal and the assumed 12.5 percent royalty payments to the

⁵⁶ Page 8.

state as the coal is produced.⁵⁷ As discussed above, the size of the bonus bids may be much lower than the Norwest Appraisal estimated because the cost of the railroad will be higher and the mine-mouth price of Otter Creek coal will be lower than Norwest assumed in its Appraisal. This leaves the royalties paid to the State of Montana on the coal it owns as the only additional revenue stream that would be unique to the Otter Creek Tracts as opposed to other Montana coal mines where the state government does not own the coal. However, if the coal being produced at the displaced Montana mines is federal coal, half of the royalties paid to the federal government are transferred to the state government. In that case half of the royalties flowing to the state government from the Otter Creek mines could be offset by the decline in federal royalty transfers from the displaced mines.

Clearly in a competitive situation where the Otter Creek mines displaced existing Montana mines, the benefits to the state government could be quite modest compared to the total calculated in the Appraisal, which assumes that Otter Creek does not have to compete for market share but, instead, can simply sell into unspecified new and expanding markets. One cannot just sum up state coal taxes, coal mine property taxes, bonus bids, and royalties – the real-world equation is far more complicated.

If the Tongue River Railroad is built because of the leasing of the Otter Creek Tracts and it provides Wyoming competition that also displaces Montana coal producers and constrains the sales or reduces the price of Otter Creek coal, Montana's state government could, on net, be worse off financially as coal production declines.

Mines that have to reduce production or shut down have significant negative impacts on local communities as hundreds of well-paid jobs disappear, local spending drops, local businesses decline, local tax bases shrink, and local government finances (including local school finances) suffer. Of course, Montana families would suffer too. It is not clear that this would be an appropriate outcome of Montana state government involvement in the coal business.

The dilemma that the Otter Creek Tracts present to the State of Montana is tied to their isolated location that can be reached only by building a new rail line. If, instead, in the New World Mine settlement, the State of Montana had requested federal coal properties that were located near existing mines where rail infrastructure was already available, the development of that state-owned coal could have supported existing as well as new Montana mines, mining families, and mine-dependent counties. The value of the coal would also have been greater because the necessary transportation infrastructure was already in place.

It might be argued that the State of Montana has nothing to lose by putting the Otter Creek Tracts up for bid. At worst, no one would bid. If there were bids, the State of Montana would get an upfront payment regardless of whether the coal developer actually proceeded with developing the coal. If the Otter Creek coal got fully developed,

⁵⁷ There is also an annual rental of \$3 per acre of state land leased. This, however, will contribute little to annual state revenues, about \$25,000 per year.

the State of Montana would reap a bonanza of royalty and tax payments. The problem with this analysis is that it ignores the same market reality that the Norwest Appraisal ultimately ignores: The limited market for Montana coal and the competitive pressure that development will put on existing Montana mines.

Given that public education in Montana is primarily financed through local property taxes and a very diverse set of taxes that flow into the state government's general fund, the primary focus of those concerned with school funding should be on expanding that tax base rather than on the possible earnings the State of Montana might receive from speculative mineral developments that could undermine the existing tax base along with local communities, schools, and families.

Conclusions

The Norwest Appraisal is fatally flawed in all of the following ways:

- It ignores Norwest's own characterization of the market for Otter Creek and other Montana coal as very limited.
- It ignores the impact of competition from Otter Creek coal in a limited market on the market price for Montana coal and the likely displacement of existing Montana coal production.
- It ignores the competition to these limited Montana coal markets that the Tongue River Railroad will create from Wyoming coal.
- It assumes that Otter Creek coal can be sold at a mine-mouth price nearly twice as high as its projected price for other Powder River Basin coal, despite the fact that this is a very limited market that will also be challenged by Wyoming coal.
- As a result of calculation errors, it significantly exaggerates the transportation cost advantage of Otter Creek coal relative to Wyoming coal, an error that could have a significant impact on financial returns to the State of Montana.
- It based its estimate of the Otter Creek mine-mouth price on sales to a single Minnesota electric generation site that it knew was associated with an implicit mine-mouth price that was much higher than the average price associated with other regional generators.
- It significantly underestimates the cost of the railroad infrastructure necessary to develop the Otter Creek coal, as well as the likely impact of that infrastructure cost on the financial returns to the State of Montana.
- It has been rendered unreliable and misleading by changes in economic conditions, energy markets, and the politics of carbon regulation since the Appraisal was prepared.
- Given the current economic, energy market, and financial conditions, it would be imprudent to lease the Otter Creek Tracts at this time on the basis of this Appraisal.

For all of these reasons the Norwest Appraisal cannot provide a conceptual or factual basis around which the Montana Land Board can structure a leasing process for the

Otter Creek Tracts. In addition, the current economic downturn and accompanying financial crisis have created a seriously depressed market for coal. Leasing the Otter Creek coal at the present time would not be financially prudent. The Montana Land Board needs to commission a new appraisal of the Otter Creek Tracts that avoids the conceptual and factual errors outlined in these comments. Such an appraisal would provide the Montana Land Board with a much more secure foundation upon which to make the important public policy decisions associated with the Otter Creek Tracts.