UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

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September 23, 2015

Ref: 8EPR-N

Ken Blodgett
Attention: Environmental Filing, Docket No. 30186
Surface Transportation Board
395 E Street, SW
Washington, DC 20423

https://public.commentworks.com/STB/TongueRiverRailroad/

Re: Tongue River Railroad, Draft EIS; CEQ # 20150109

Dear Mr. Blodgett:

In accordance with our responsibilities under Section 102(2)(C) of the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act, the U.S. Environmental Protection Agency Region 8 has reviewed the *Tongue River Railroad Company – Construction and Operation of a New Rail Line in Southeastern Montana Draft Environmental Impact Statement* (EIS) prepared by the Surface Transportation Board (STB), Docket No. FD 30186. It is the EPA's responsibility to provide an independent review and evaluation of the potential environmental impacts of this project, including rating the magnitude of potential environmental impacts and the adequacy of the environmental analysis in the NEPA document.

The Tongue River Railroad Company proposes to build a new railroad line to transport coal from the proposed Otter Creek mine and other future coal mines in the Tongue River valley south of Miles City, Montana. The Draft EIS analyzed ten alternatives. Eight alternatives would transport coal north to the Burlington Northern - Santa Fe (BNSF) mainline while two alternatives would transport coal south to near Decker, Montana and Sheridan, Wyoming.

The EPA identified five areas of concern in our review of the Draft EIS for the proposed Tongue River Railroad (TRRR): (1) impacts to wetlands and other waters of the U.S., (2) impacts to riparian areas, (3) climate change, (4) impacts to environmental justice communities, and (5) air quality. Our concerns are discussed further in this cover letter and in the enclosed detailed comments.

Impacts to Wetlands and Aquatic Resources

Estimated construction (direct) impacts to wetlands and waters of the U.S. range from 8.1 to 33.3 acres for the ten proposed alternatives, including many high-quality wetlands associated with the Tongue River. Indirect impacts to wetlands occur from changes in hydrology, such as activities that block or reduce water flow into wetlands. The railroad bed would essentially serve as a dam changing the amount and locations of surface and ground water movement. The indirect impacts to wetlands

and waters of the U.S. were estimated at a large scale by calculating the acres of potential wetlands within 400 feet of the right-of-way. As discussed in the Draft EIS, the number of alternatives, spatial scale of potential alternatives and lack of property access limited the environmental analysis of potential impacts to wetlands. The STB will need to obtain and analyze more detailed information related to the indirect impacts to wetlands in order to identify a preferred alternative which can be permitted under Section 404 of the Clean Water Act as the *Least Environmentally Damaging Practicable Alternative* (LEDPA). We recommend that the alternatives analysis for the STB be compatible with the future Section 404 CWA permit process, to avoid reopening the alternatives analysis. Based on information in the Draft EIS, the Colstrip, Decker, Decker East and potentially Colstrip East have the highest likelihood of being identified by the U.S. Army Corps of Engineers as the LEDPA. The remaining six alternatives have significant wetland impacts: Tongue River, Tongue River East, Moon Creek, Moon Creek East, Tongue River Road, and Tongue River Road East all appear unlikely to be identified as a potential LEDPA.

The impact analysis for aquatic resources is further complicated by the siting of half of the proposed alternatives along the Tongue River. There are five main alternatives that closely follow the Tongue River for part of the route. These are paired with five "Eastern" alternatives which are routed several miles east of the Tongue River. It is not clear from the Draft EIS the relative environmental impacts of the Eastern and Western alignments. The Draft EIS includes some components of the impact analysis for aquatic resources including: direct impacts to wetlands within the right-of-way, acres of wetlands within 400 feet of the right-of-way and the number of miles of railroad that would be constructed near fish bearing streams (largely the Tongue River). Absent from the analysis is a holistic evaluation of impacts to aquatic resources, looking at the indirect effects to wetlands and the construction of the railroad bed for a number of miles along the Tongue River and the relative magnitude of impacts and values of the aquatic water resources. For example, in comparing the two Colstrip alternatives, the Colstrip East alternative impacts more wetlands directly (18.4 acres), has fewer adjacent wetlands (46.4 acres) and is only near fish bearing waters for 2.6 miles. The Colstrip (western) alternative impacts fewer wetlands directly (8.1 acres), is adjacent to more wetlands and wetlands of higher quality (78.6 acres) and is adjacent to fish bearing streams for 8.4 miles. Given that not all of the quantified adjacent wetlands will be impacted by the proposed project, it is not possible based on this information in the Draft EIS to identify which Colstrip alternative has the least impacts to wetlands and aquatic resources or the relative magnitude of the impacts.

The enclosed *Detailed Comments* include recommendations for improving the analysis of aquatic resource impacts, as well as opportunities to avoid, minimize and mitigate for those impacts. The *Detailed Comments* also provide guidance on designing the aquatic resource mitigation plan for the Final EIS.

Climate Change

The proposed railroad will open up a new area of the Powder River basin for cost-efficient coal mining. The coal would be shipped via the TRRR to power plants for electrical power generation. The Draft EIS notes that the amount of Tongue River coal associated with the project and shipped for power generation is largely dependent on market forces and that this coal is anticipated to largely replace coals mined in other areas. The EPA found the analysis of greenhouse gas (GHG) emissions and the coal market analysis in the Draft EIS to be very comprehensive. The marketing analysis and evaluation of different coal production scenarios well characterized the range of potential net and gross GHG emissions and changes in rail traffic. Table 5.2-17 in the Draft EIS summarizes the net

increase in life-cycle GHG emissions for the 20 year time period used in the GHG analysis, which estimated 75 to 81 million metric tons of carbon dioxide equivalent ($MMTCO_2e$) in the high coal production, high coal export capacity scenario. The net life-cycle calculations include GHG emissions from mining, transportation and combustion of coals and take into account coal and natural gas displaced by Tongue River coal. The enclosed Detailed Comments include recommendations for improving the analysis of GHG emissions. Although the coal mining and the coal combustion are secondary or indirect impacts, we recommend that climate change mitigation measures be developed in the Final EIS following the considerations from CEQ's *Revised Draft Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in NEPA Review*.

EPA Rating of EIS

The proposed rail line and associated coal mines will change portions of the Tongue River valley from a very rural, high plains grasslands area, with small agricultural communities, to a coal mining and transportation area. Construction of the railroad will have permanent impacts to wetlands and other aquatic resources along the Tongue River and its tributaries. The GHG emissions and other impacts from mining the coal, shipping the coal and coal combustion to generate electricity will continue for many decades, depending on the economies of coal mining and coal-fired electrical power industries.

In situations where a Draft EIS does not identify a preferred alternative, the EPA reviews and rates each action alternative. Based on our review, the EPA is rating the Tongue River, Tongue River East, Moon Creek, Moon Creek East, Tongue River Road, and Tongue River Road East alternatives as "Environmental Objections – Insufficient Information" (EO-2). The "EO" rating is based on the significant environmental impacts associated with these alternatives related to wetlands, aquatic resources, GHG emissions, and the availability of alternatives with substantially fewer aquatic resource impacts. The EPA is rating the Colstrip, Colstrip East, Decker and Decker East alternatives as "Environmental Concerns – Insufficient Information" (EC-2). The "EC" rating means that the EPA's review has identified potential impacts with these alternatives that should be avoided, reduced and mitigated in order to fully protect the environment, including potential impacts to wetlands, aquatic resources, environmental justice communities (for the Colstrip and Colstrip East alternatives only) and GHG emissions. We note that for the two Colstrip alternatives, the STB has identified "disproportionately high and adverse impacts" to an environmental justice community along the existing railroad connected to the TRRR. We recommend that additional mitigation measures (recommendations provided in the detailed comments) be implemented to reduce these impacts. The "2" rating means additional information is needed to more fully characterize impacts to wetlands, riparian areas and air quality. Additional information is also needed on proposed mitigation measures. A full description of the EPA's rating system can be found at: http://www2.epa.gov/nepa/environmental-impact-statement-rating-system-criteria.

We appreciate the opportunity to comment on this document and hope our suggestions for improving it will assist you with preparation of the Final EIS. We would be happy to meet to discuss these comments and our recommendations. If you have any questions or requests, please feel free to contact either me at 303-312-6704, or Dana Allen of my staff at 303-312-6870 or by email at allen.dana@epa.gov.

Sincerely,

Philip S. Strobel, Director
NEPA Compliance and Review Program
Office of Ecosystems Protection and Remediation

EPA's Detailed Comments on the Tongue River Railroad Draft Environmental Impact Statement

September 23, 2015

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A. Wetlands and Waters of the US

1. **Impacts Analysis Background.** A reconnaissance-level field determination for wetland delineation was conducted based on U.S. Army Corps of Engineers technical guidance and mapping. The Draft EIS defines the wetland study area as the right-of-way (ROW) for each build alternative plus 400 feet of buffer on either side. The Draft EIS notes the buffer is to account for indirect, secondary impacts on wetlands that are outside of the ROW. The study areas also included several locations where roads would be relocated and thereby affect wetlands. The Draft EIS assumes that all wetlands within the ROW would be disturbed. The exact locations and acres of permanent and temporary disturbance within the ROW are unknown at this time and would be determined during final engineering and design. The functional assessment determined that there were no Category I wetlands (exceptionally high quality and rare, such as fens) found in the study area. However, approximately 32 percent of wetlands in the study area are Category II wetlands (very high functioning wetlands, providing habitat for sensitive plants and animals), with more than 99 percent of these adjacent to the Tongue River.

   The Draft EIS states that the impacts on wetlands adjacent to the ROW (within the 400' buffer) were assessed qualitatively because no rail construction would occur outside of the ROW. However, changes in hydrology and water quality from construction and operation within the ROW could affect some of these adjacent wetlands. Although the Draft EIS states that it is not possible to predict exactly how a particular wetland adjacent to the ROW would react to rail construction or operation, these potential indirect impacts should be considered in the impact analysis when contemplating the environmentally preferred alternative. When comparing alternatives, we note that build alternatives with more acres of wetlands adjacent to the ROW are more likely to result in a greater area of potential impacts to wetlands and waters of the U.S. We recommend that the Final EIS more fully analyze the impact of direct and indirect impacts to wetlands and water resources. We do appreciate that the Draft EIS includes the acres and functional assessment of wetlands and waters of the U.S adjacent to (within 400 feet) of the railroad ROW.

2. **CWA Section 404.** The CWA Section 404 implementing regulations at 40 C.F.R. Part 230 require consideration of direct, indirect (secondary) and cumulative impacts by the Corps in making CWA Section 404 permitting decisions for the discharge of dredged or fill material into waters of the U.S. A key component of the Corps decision will be identification of the Least Environmentally Damaging Practicable Alternative (LEDPA). Given these considerations, and based upon the information presented in the Draft EIS, it is unclear to EPA which alternative is the LEDPA. The analysis in the Draft EIS is based generally only on direct impacts. Impacts to wetlands adjacent to the right-of-way were assessed more qualitatively, e.g., acres of wetlands adjacent to railroad ROW. Because Section 404 requires that the direct, indirect, and cumulative adverse impacts be evaluated for compliance with the Section 404(b)(1) Guidelines, including measures to avoid, minimize and compensate for unavoidable adverse impacts, we recommend that the Final EIS include a more detailed evaluation of all adverse impacts to wetlands, including indirect adverse impacts to supporting hydrology related to: 1) ROW fills in wetlands that may bisect wetlands or impede flow between wetlands, 2) ROW cuts in or near wetlands that may divert water from or drain adjacent wetlands, and 3) construction of culverts and erosions control structures that drain or divert flow from wetlands.

   In summary, the analysis of potential impacts to wetlands and waters of U.S. should have enough information for the STB to identify a preferred alternative that has the potential to be determined by the U.S. Army Corps of Engineers as the LEDPA. Depending on the interest of the project proponent, it may be desirable to develop much of the information needed for a CWA Section 404 permit application in the Final EIS, including a full wetland delineation and functional assessment for the final preferred alternative and other potential LEDPA alternatives. Also, it may be more efficient to develop a Final EIS that could meet the environmental review requirements of NEPA for both the STB and U.S. Army Corps of Engineers decisions. The additional information needed for the Section 404 permit application could also be used in the Final EIS to determine the appropriate level of mitigation and to understand all avoidable and unavoidable project impacts.

3. **Wetland Mitigation.** The Draft EIS concludes that construction and operation of the proposed rail line would cause unavoidable adverse impacts on wetlands. These impacts include not only the complete loss of wetland habitat and functions from placement of fill material, but also degraded wetland stormwater and floodwater storage capacity and wetland quality from wetland alterations and discharges of pollutants into wetlands. We recommend the mitigation proposal in the Final EIS include a commitment to mitigate not only for direct wetland losses but also for impacts to wetland functions adjacent to the ROW.

   The Draft EIS also states that some wetlands may or may not be considered jurisdictional under the CWA, but under NEPA, all wetland impacts should be disclosed regardless of their jurisdictional status. There may be long-term productivity loss for wetlands that are not jurisdictional and do not require mitigation under the CWA. We recommend the mitigation plan in the Final EIS encompass mitigation for all impacts to all wetlands.

4. **Wetlands Mitigation Site.** In addition to STB's recommended mitigation measures and the proponent's voluntary measures outlined in the Draft EIS (Chapter 19), we offer the following specific recommendations for mitigation site commitments in the Final EIS to help offset any unavoidable project impacts to wetlands:

- Prioritize mitigation sites that are located within the same watershed and represent an in-kind replacement of wetland type and function, as identified in the CWA implementing regulations.
- Apply higher mitigation ratios where necessary to account for the method of compensatory mitigation (e.g., creation vs. restoration), the likelihood of success, differences between functions lost at the impact site and the anticipated functional lift, temporal losses (time lost between completion of future mitigation and the timing of the original impact); we recommend these elements be considered in calculating these higher ratios.
- Consider avoidance, minimization and mitigation for impacts to both jurisdictional and non-jurisdictional wetlands.
- Apply design modification and further minimization actions wherever possible to minimize or shift the ROW for all alternatives through sensitive, higher quality wetland areas and adjacent terrestrial areas that support aquatic dependent wildlife species. For example, is it possible to construct additional bridges across some of the valleys with better riparian habitat rather than large embankments with culverts? Could retaining walls be used instead of fill slopes in wetlands? Bridges would reduce impacts to the wildlife and riparian hydrology.

5. **Implementation of Mitigation Plan.** Although the Draft EIS includes information directing the proponent to implement any compensatory mitigation for unavoidable impacts to wetlands, there are no details on how the mitigation plan will be implemented, such as for example the creation and/or restoration of impacted wetlands. We recommend the mitigation plan description include at a minimum:

   - A defined monitoring plan;
   - Specific management decision points based upon protecting the minimum desired environmental conditions (e.g., thresholds for water quality, wetland acres, etc.) in the project area, which would trigger management action;
   - Management actions and mitigation measures that would be implemented should a threshold be exceeded;
   - Identification of funding sources;
   - Mechanisms for public disclosure of the analysis and management decisions; and
   - Specific temporal milestones to meet rehabilitation standards.

   Any mitigation details presented should be consistent with the 2008 Rule on Compensatory Mitigation for Losses to Aquatic Resources for CWA Section 404 related impacts. We understand that the Lower Middle Yellowstone Umbrella Mitigation Bank is being considered. Compensatory mitigation sites should be evaluated for acreage availability once the acres of wetlands impacts have been determined including replacement ratios and functions and values.

6. **Construction Best Management Practices.** We also recommend that where possible, more detail be provided in the Final EIS regarding Best Management Practices (BMPs). Although BMPs are generally discussed as a means to minimize project-related construction impacts on wetlands and other aquatic resources that would remain in or adjacent to the ROW following construction, there are no details included in the Draft EIS mitigation chapter or appendices. The EPA recommends the following BMPs be considered:

- An updated construction stormwater pollution prevention plan with site-specific best management practice plans to control sediment discharge from construction activities. Include specific information and design specifications to demonstrate how downstream water quality will be protected.
- Installation and maintenance of sediment control measures during construction and, if necessary, after the construction is complete. Measures may include the use of temporary diversions around the construction site; dewatering the site; cofferdams; interlocked sheet pilings; or sediment curtains. Techniques such as heavy mud mats and separation, storage and reuse of all topsoil to reduce impacts to bed aquatic resources and upland areas should be used.
- Materials such as pilings, culverts, sandbags, fabric, mats, fencing and timbers used for temporary facilities in waters of the U.S. should be free from oil, grease, excess dirt, loose paint and other pollutants.
- Vegetation and hydrology should be reconfigured to a reasonable representation of the original stream and wetland area. If nursery and seed stock is necessary, native nursery and seed stock is preferable so that non-native flora or fauna is not introduced to the area.
- Stream banks and beds affected by the project construction should be restored to at least the original downstream condition and monitored.
- Any temporary structures, such as cofferdams, sheet metal pilings, or sediment curtains that are necessary during construction should be designed to handle all stream, ditch and sheet flows that can be anticipated. All temporary structures should be removed post-construction and the area restored to its natural condition.
- Monitoring plans should be in place after project completion to determine if restored sites continue to support wetlands characteristics. Project-related direct and indirect impacts to waterbodies and adjacent wetlands from the loss of hydrology due to construction activities should be monitored.

7. **Tongue River Navigable Water.** Section 3.5, starting on page 3.5-1 states that the Tongue River is not classified as a navigable waterway by federal agencies. It is important note that the Tongue River is considered to be a navigable water under the Clean Water Act by federal agencies. In the Final EIS we recommend the section be revised to explain whether or not a federal permit is needed from the Army Corps of Engineers for structures affecting navigable waters pursuant to section 10 of the Rivers and Harbor act of 1899. This information should be added to the existing description of State requirements for structures in navigable rivers.

B. Riparian Habitat and Water Quality

8. **Bridge Design Considerations.** Stream geomorphology is an important consideration in preserving healthy streams and riparian habitats as well as constructing sustainable infrastructure. We recommend that bridges over the Tongue River and creeks with meandering floodplains be designed such that the bridges span the meander belt. The meander belt is usually measured for a reach between lines drawn tangentially to the outside bends of the laterally extreme meander bends. If the meander belt width cannot be spanned due to site-specific constraints, the structure should be designed such that abutments are outside the 100-year erosion limit of the watercourse. This can be

determined by evaluating the geomorphology of two upstream and downstream bends from the river crossing site.

9. **Designing Culverts to Reduce Impacts.** Most of the railroad and replacement roads stream crossings will be embankments filling the stream channel with a culvert conveying the drainage under the rail or roadbed. We recommend adding mitigation measure(s) to more specifically identify the performance criteria that should be achieved to reduce environmental impacts. The EIS indicates that many intermittent streams are fish-bearing at least seasonally, making these streams likely important spawning areas for mainstem populations. Unnamed drainages could be covered by more standard culvert design criteria. However, for larger creeks, creeks with floodplains/terraces, and creeks that support fisheries (including seasonal fisheries) more protective mitigation measures should be developed. Some typical culvert design considerations to reduce impacts include:
   - Maintaining geomorphic properties to support fish populations, e.g., fish passage, suitable habitat and velocities for spawning, fry and juvenile fish;
   - Maintaining the floodplain habitat including migration riparian species;
   - Preventing channel down cutting (incising) or channel aggradation; and
   - Preserving bankfull dimensions of the creek by the culvert design.

10. **Alignments following the Tongue River.** In the Draft EIS, there are five main alternatives and each alternative has an eastern alignment version (e.g., Colstrip and Colstrip East). The eastern alignments all have more direct impacts to wetlands and waters of the U.S. than the paired alternative, yet the five main (or western) alternatives are all to be constructed for a number of miles along the edge of the historic Tongue River floodplain, within 300 meters of the Tongue River fishery. For example, the Colstrip Alternative is located near the Tongue River for 6 miles; whereas the Colstrip East Alternatives is near the Tongue River for only 0.7 miles. Similarly, the Colstrip alternative has 78.6 acres of wetlands adjacent to the right-of-way and Colstrip East would have 46.4 acres of wetlands adjacent to the right-of-way. As part of identifying the preferred alternative for the Final EIS, we recommend adding analysis to better characterize the relative impacts of the eastern and western alternatives.

    The Draft EIS has already quantified the track mileage within 300 m of a fish bearing stream. However, the potential impacts to fisheries and riparian wetlands were not analyzed in a way that allows the public and the STB to weigh the relative environmental impacts of siting the railroad next to the Tongue River versus siting it further east with more direct wetland impacts and limited impacts to the Tongue River. There also appears to be some locations where design modifications may reduce direct wetland impacts for the eastern alignments. For example, it appears that much of the wetland impacts of the Colstrip eastern alternatives are associated with the crossings of Otter Creek and the Tongue River. Would it be possible to bridge Otter Creek or lengthen the Tongue River bridge?

11. In reviewing the sections of the EIS regarding floodplains and geomorphology, there appears to be some inconsistencies about which stream crossings would be designed to fully convey the 100-year flood and which bridges would be designed for smaller runoff events creating a backwater during 50-year and greater storm events. In the Alternatives Chapter, on page 2-22 it appears that most bridges would be designed for the 50-year flood event, creating up to a ½ foot backwater behind the

bridges. In the mitigation measures, MM-44 states that bridges crossing "mapped" 100-year floodplains would be designed to convey the 100-year flood. MM-45 states that bridges over rivers and streams in FEMA designated 100-year floodplains shall not increase the 100-year flood elevation by more than 0.5 feet or significantly increased velocities. However, in Section 9.4 – Floodplains, the Draft EIS notes that few floodplains have been "mapped" in the area due to the rural nature of the Tongue River basin. The document also includes maps of NRCS floodplains. We recommend that the final EIS be revised to state more clearly which bridges are being designed to fully convey the 100-year flood and more clearly identifying bridges that will be designed with lesser capacity and evaluate the impacts of localized flooding during major storm events.

C. Climate Change

12. **Greenhouse Gas and Climate Change.** The analysis of greenhouse gas (GHG) emissions and the coal market analysis in the EIS were very thorough and comprehensive. As noted in the document, the combustion of coal shipped via the TRRR will generate substantial GHG emissions. The Draft EIS [summarized in Table 5.2-11] calculated 1.920 billion metric tons CO_2 equivalents ($MMTCO_2e$) under the high coal production, high coal export scenario from 2018 – 2037, or an average of 96.02 $MMTCO_2e$ per year. Depending on the greenhouse gas emissions from coal displaced by Tongue River coal, the net changes were calculated to be up to 81 $MMTCO_2e$ (2018-2037) [Table 5.2-17]. For projects like the TRRR, which would be constructed to ship coal to power plants for combustion, climate change and greenhouse gas emissions are one of the most significant environmental impacts. Although the coal mining and the coal combustion are secondary or indirect impacts, we recommend that climate change mitigation measures be developed in the Final EIS following the considerations from CEQ's *Revised Draft Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in NEPA Reviews*[1]. In particular for coal mining and transportation impact projects, we note that mitigation can be compensatory.[2] As noted in the comment below, methane capture and use from other coal mines or energy development may provide some of the better opportunities for compensatory mitigation. The mitigation section in the Final EIS should also evaluate the quality of proposed mitigation over time and the probability of mitigation measures being implemented (Section F of revised draft guidance).

13. We recommend adding information to the Final EIS to explain the differences in lifecycle GHG emissions for competing coals. Is the difference based on methane emissions from the various coal mines or are there other factors which affect the greenhouse gas emissions per kilowatt hour? More specifically, the coal with the highest greenhouse gas emissions rates comes from two older studies (1995, 1997) and are denoted as "Western Coal Combusted in WA/OR/TX. We were unable to locate the two studies to determine the specific coal mines or coal mining areas that were used to develop that emission factor. However, based on our knowledge of energy development in the past twenty years, we recommend re-evaluating the rates for currently operating mines. The coalbed methane boom of the late 1990s-2000s, the expansion of natural gas collection lines, reductions in

[1] Available online at: https://www.whitehouse.gov/sites/default/files/docs/nepa_revised_draft_ghg_guidance_searchable.pdf

[2] "Mitigation, by definition, includes considering the avoidance of the impacts, minimizing them by limiting them, rectifying the impact, reducing or eliminating the impacts over time, or compensating for them."

the amount of underground coal mining, and mine methane mitigation technologies have reduced methane emissions from many coal mines. One of the few intermountain west coal mines we are aware of with substantial methane venting and very limited mitigation is the West Elk mine in Western Colorado. The West Elk Mine is also noteworthy as a potential location for compensatory GHG mitigation as both Otter Creek and West Elk are both owned by Arch Coal.

14. **Cumulative Effects – Future Coal Mining.** The construction of the Tongue River railroad has been proposed to make coal transportation cost-effective from the Tongue River Valley with the anticipated use of the coal resources for power generation. As noted in the Draft EIS, additional coal mining will be induced by construction of the TRRR. We have identified two concerns regarding the cumulative effects analysis:

    First, the evaluation of reasonably foreseeable mining did not include potential mining under lands managed by the Forest Service. Although surface mining is unlikely to occur on lands managed by the Custer National Forest, it appears to be reasonably foreseeable for some coal mining to occur under lands managed by the Forest Service either through traditional underground coal mining or auger mining from the pit of the proposed Otter Creek coal mine. For example, it appears the main coal seam to be mined in Tract #2 of the Otter Creek mine (1st tract to be mined) continues under Forest Service managed lands for several miles. This information is from a cross-section of the coal resource mapped in a USGS publication evaluating the Ashland Coal Field[3]. We recommend that the Final EIS evaluate whether coal mining under the national forest lands are reasonably foreseeable and evaluate potential impacts.

15. The cumulative effects analysis for climate change and GHG emissions used a relatively short-term (20 year) timeframe to assess climate change and induced GHG emissions. As noted in Appendix C - Coal Production (page C.3-22), the first three tracks of the Otter Creek coal mine are estimated to be mined for fifty-five years. It is not clear whether there are additional mineable tracts at the Otter Creek Mine. Similarly, the additive or cumulative effects of greenhouse gases are long-lasting. We note from the Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Report: Climate Change 2007[4] report that about half of atmospheric CO_2 remains in the atmosphere for a long period of time. The first paragraph of Section 7.3.1.2 of the IPCC report states only about 50% of atmospheric CO_2 will be removed in thirty years. An additional 30% will be removed within a few centuries and the remaining 20% may remain in the atmosphere for many thousands of years. We recommend adding a discussion of the relationship between lower cost coal and the long term aspects of climate change. For example, how would adding the additional, lower cost coal resources from the Tongue River Valley affect overall production of coal from the Powder River basin (or another appropriate market)? As we have reviewed many environmental review documents for coal mines in the Powder River basin, we note that the cost of mining has been increasing as the mines expand into areas with additional overburden.

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[3] Figure PA- 9, Chapter PA of US Geological Survey Professional Paper 1625-A, Ashland Coal Field, Powder River Basin, Montana: Geology Coal Quality and Coal Resources shows a 60 to 70 foot thick coal seam; http://pubs.usgs.gov/pp/p1625a/Chapters/PA.pdf

[4] \\c0808f03ec014\user$\Dallen\Documents\3COAL\Tongue R RR\7_3_1_2 Perturbations of the Natural Carbon Cycle from Human Activities - AR4 WGI Chapter 7 Couplings Between Changes in the Climate System and Biogeochemistry.htm

D. Environmental Justice and Noise/Vibration

16. The majority of impacts to potential Environmental Justice communities are along portions of existing rail lines that will experience substantial increases in noise and vibration as a result of coal shipments from the Tongue River Railroad. In the Final EIS, if the selected preferred alternative has substantial impacts to potential Environmental Justice communities, such as the Colstrip alternatives, we recommend additional mitigation measures be developed in the Final EIS to reduce noise and vibration. For example, is it feasible to construct a berm (dirt mound) or noise abatement wall along the existing rail line in Colstrip to reduce noise? It appears that 5 decibel reductions are generally feasible using berms/walls. Other potential mitigation measures include noise abatement/insulation measures for residences and other sensitive receptors. One of the design goals of reworking/upgrading of the existing Colstrip Subdivision rail line should be to include noise impacts.

17. We recommend that mitigation measure MM-18 be amended to be more proactive with communities (including potential EJ communities) along the existing Colstrip subdivision and Fargo to Willmar rail segments. We recommend that the Tongue River Railroad Company (TTTC) conduct public outreach to notify communities that they could request quiet zones and assist the communities in developing the plans.

18. We recommend adding mitigation measures to reduce construction noise impacts, particularly if construction will be round-the-clock. Based on the analysis in Chapter 7, an obvious potential mitigation measure is to prohibit pile-driving within a half-mile of receptors from 7 PM to 8 AM. Similarly, other noisy construction activities should also be prohibited near communities during evening and early morning hours.

E. Air Quality

19. The information included in the Draft EIS does not sufficiently disclose the impact analysis process or potential impacts. As described below there are issues with the modeling methodology, approach, and scenarios for the project-specific air quality impacts. It is difficult to determine how these issues have affected the level of certainty in the predicted impacts. Most likely, the air quality impacts associated with this project are under-estimated because the modeling analysis does not represent scenarios with higher air emissions nor were conservative assumptions used in the model. Despite the uncertainties, 1-hour NO_2 is predicted to violate and exceed the National Ambient Air Quality Standard (NAAQS) and 24-hour $PM_{2.5}$ levels are predicted to be as high as 76% of the NAAQS for multiple scenarios. Given the lack of confidence in the ability of the model to predict reasonable higher emission impacts, we recommend applying additional mitigation to reduce emissions of these pollutants. The additional mitigation would also reduce other air quality impacts that were not analyzed in the Draft EIS such as 3-hour SO_2, Ozone, Hazardous Air Pollutants (HAPs), far-field pollutant impacts at Class I and Sensitive Class II areas, and Air Quality Related Values (AQRVs).

    Based on the concerns described above, we recommend updating the air quality modeling analysis in order to more accurately represent the project-specific and cumulative impacts. If the Surface Transportation Board (STB) is unable to revise the air quality analysis, we recommend a protective approach that includes the application of additional mitigation measures to address the likely

potential for adverse air quality impacts. We recommend requiring the use of Tier 4 locomotives from the project outset, as well as including considerations for requiring construction equipment to be Tier 4 or equivalent. Lower emitting engine technology should mitigate projected 1-hour NO_2 exceedances and reduce emissions of other air pollutants including HAPs. We also recommend that the mitigation measures for fugitive dust during construction require corrective actions if visible dust plumes are observed. This will increase the likelihood that the measures are effective at reducing windblown dust.

20. **Specific Air Quality Analysis Comments:** Consistent with input EPA provided as a Cooperating Agency, we have continued concerns with some components of the air quality analysis.

    - Near-field model scenarios do not account for maximum project emissions: Scenarios modeled do not represent the likely maximum emissions scenario associated with the alternatives. The scenarios do not include the maximum number of locomotives and actual equipment in the project, actual emissions rates for the locomotives, and construction emissions associated with the alternatives.

      To further explain, the modeling used to predict air quality, appears to have not have evaluated potential combinations of locomotives which would generate maximum air pollutant concentrations. Tier 0 and Tier 1 engines are substantially more polluting than Tier 3 and Tier 4 engines. The modeling used average emission rates for the levels of engines anticipated to be in the BNSF fleet at the time. This approach may be reasonable in some cases for air quality standards that are based on yearly averages. However, this approach does not work for short term standards such as 1-hour, 3-hour, 8-hour, or 24-hour standards. For example, eight trains a day in 2018, using either four Tier 0+ or four Tier 1+ locomotives would emit nearly double the amount of NO_x as would 26.7 trains a day, using four Tier 4 locomotives in 2030. According to the table on page E-15 of Appendix E, in 2018 Tier 0+ locomotives will be about 14% of the fleet and the most common locomotive in the fleet would be Tier 1+. Modeling air quality for a maximum hour should be based on a train with all Tier 0+ locomotives. Depending on usage of Tier 0+ locomotives, air quality modeling for maximum day might be based on a combination of Tier 0+ and Tier 1+, or only Tier 1+ locomotives.

      We recommend that the analysis include maximum impacts from the use of Tier 0+ or Tier 1+ locomotives since those engine classes may be operated on the rail-line. Alternatively, if additional information becomes available demonstrating that lower Tier locomotives will not be used on the proposed Tongue River Railroad, the information presented in Table 4-5 may be sufficient.

    - **Model configuration for near-field modeling:** The model configuration does not align with EPA air quality modeling guidance and non-guideline assumptions were not supported sufficiently (e.g., NO_2 Tiering Option, Deposition, Release Parameters, Background Concentrations). Further, it is not clear that the receptor grid or model domain includes a sufficient area to properly predict air quality impacts or show potential for high concentrations. It is important to ensure that the proper assumptions are reflected in the air quality near-field modeling analysis because the predicted air impacts are strongly dependent on these components and assumptions.

    - **Disclosure of modeled exceedances:** We recommend that the summary text at page 4-16 of the Draft EIS identify and explain the modeled violation and exceedances for 1-hour NO_2, and that the final EIS provide for mitigation of these impacts. Model exceedances of the NAAQS should

be disclosed in addition to violations of the NAAQS because modeled exceedances are potential indicators of adverse air quality impacts. If exceedances of ambient air quality standards are predicted, mitigation should be identified. We believe that the predicted pollutant concentrations currently presented in the Draft EIS have been averaged over three years (modeled violations), rather than being presented as annual exceedances.

- **Lack of analysis for multiple air pollutants:** We recommend the Final EIS air quality analysis include quantitative analysis for 3-hour SO_2, HAPs, or PSD Increment comparisons. Further, we recommend the analysis provide a discussion of the potential ozone impacts as a result of the railroad construction and operation, the Otter Creek mine, and other mines that are reasonably foreseeable with the development of this railway.

- **Lack of analysis for Air Quality Related Values:** We recommend the Final EIS include an analysis for AQRVs, including visibility at Class I and sensitive Class II areas. Completing an AQRV analysis prior to the final EIS may be warranted given the substantial levels of emissions from the railroad and proposed Otter Creek mine as well as the close proximity to the Northern Cheyenne Indian Reservation (a Class I area). As we have mentioned in the past, the air quality analysis approach for AQRVs are typically discussed with other federal and state agencies to ensure that the methodologies are appropriate for these assessments. If it has not already been done, we recommend contacting the other agencies to discuss the approach for AQRVs.

21. **Cumulative Air Quality Analysis.** Based on the information included in the Draft EIS, we continue to have concerns with the approach for assessing and disclosing cumulative air quality impacts. In particular, we are concerned that the qualitative analysis used to address cumulative impacts references air quality modeling studies that are too old to reliably represent current conditions, not applicable to this area, contain inaccurate data, or use unreliable modeling platforms. For instance, the 2013 modeling developed for the Powder River Basin (PRB) coal review did not perform within acceptable levels. As a result, we do not feel confident in the predicted cumulative far-field air quality impacts, and we are also concerned that the PRB model might not be reliable for evaluating air quality impacts.