

Final Environmental Impact Statement For The Spring Creek Mine TR1 Project Big Horn County, Montana



Prepared by:

Montana Department of Environmental Quality
Coal and Opencut Mining Bureau
Helena, Montana

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**Final Environmental Impact Statement
Spring Creek Mine TR1 Project**

**PREPARED BY
MONTANA DEPARTMENT OF ENVIRONMENTAL QUALITY
COAL AND OPENCUT MINING BUREAU**

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APPENDICES

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ACRONYMS/ABBREVIATIONS

Acronym	Definition
°F	degrees Fahrenheit
µg/m ³	micrograms per cubic meter
AADT	annual average daily traffic
ACHP	Advisory Council on Historic Preservation
A-D	Anderson-Dietz
APLIC	Avian Power Line Interaction Committee
ARM	Administrative Rules of Montana
BCC	Birds of Conservation Concern
BLM	Bureau of Land Management (U.S. Department of the Interior)
BMP	Best Management Practice
BNSF	Burlington Northern Santa Fe Railroad
BTU	British thermal unit
CAA	Clean Air Act
CBNG	Coal bed natural gas
CCAA	Candidate Conservation Agreement with Assurances
CFR	Code of Federal Regulations
CI ICE	Compression Ignition Internal Combustion Engines
CO	carbon monoxide
CPE	Cloud Peak Energy Resources LLC
CWA	Clean Water Act
dB	decibel
dBA	“A-weighted” decibel
DEQ	Department of Environmental Quality (Montana)
DNRC	Department of Natural Resources and Conservation (Montana)
DOA	Department of Administration (Montana)
DOI	Department of the Interior (United States)
EC	electrical conductivity
EIS	environmental impact statement
EO	Executive Order
EPA	Environmental Protection Agency (United States)
EQC	Environmental Quality Council (Montana)
ESA	Endangered Species Act

FTA	Federal Transit Administration
FWP	Fish, Wildlife and Parks (Montana)
gpm	gallons per minute
HQT	Habitat Quantification Tool
HRRP	Habitat Recovery and Replacement Plan
Hz	hertz
L ₅₀	Noise exceeding the 50 th percentile
L ₉₀	Noise exceeding the 90 th percentile
LBM	lease by modification
L _{eq}	A-weighted noise equivalent
LLC	limited liability company
L _{max}	Maximum instantaneous noise level
MAAQS	Montana Ambient Air Quality Standards
MAQP	Montana Air Quality Permit
MBOG	Montana Board of Oil & Gas
MBTA	Migratory Bird Treaty Act
MCA	Montana Code Annotated
MDOA	Montana Department of Administration
MDT	Montana Department of Transportation
MEPA	Montana Environmental Policy Act
mg/l	milligrams per liter
MPDD	Mining Plan Decision Document
MPDES	Montana Pollution Discharge Eliminating System
MSUMRA	Montana Strip and Underground Mine Reclamation Act
MT	Montana
MTNHP	Montana Natural Heritage Program
NAAQS	National Ambient Air Quality Standards
NHPA	National Historic Preservation Act
NO ₂	nitrogen dioxide
NO _x	nitrogen oxide
NPDES	National Pollution Discharge Elimination System
NRHP	National Register of Historic Places
NTEC	Navajo Transitional Energy Company, LLC
O ₃	ozone
OSMRE	Office of Surface Mining Reclamation and Enforcement
Pb	Lead
PE	Professional Engineer

PHC	Probable Hydrologic Consequences
PM	Particulate Matter
PM _{2.5}	Particulate matter with diameter of 2.5 microns or less in size
PM ₁₀	Particulate matter with diameter of 10 microns or less in size
ppm	parts per million
PPAA	Private Property Assessment Act
SAR	sodium adsorption ratio
SCC	Spring Creek Coal
SCM	Spring Creek Mine
SMCRA	Surface Mining Control and Reclamation Act
SO ₂	Sulfur dioxide
SOSI	species of special interest
TDS	Total dissolved solids
TMDL	Total maximum daily load
TR1 Project	TR1 major revision project
TSS	total suspended solids
UP	Union Pacific Railroad
US	United States
USACE	United States Army Corps of Engineers
USC	United States Code
USDA-SCS	United States Department of Agriculture, Soil Conservation Service
USFWS	United States Fish and Wildlife Service
WEST	West Environmental & Statistical Consultants
WMCC	Wolf Mountain Coal Company

SUMMARY

INTRODUCTION

This final Environmental Impact Statement (EIS) was prepared by the Montana Department of Environmental Quality (DEQ) for the proposed TR1 major revision (TR1 Project) to the Spring Creek Mine (SCM) Surface Mining Permit C1979012. The SCM is operated by the Navajo Transitional Energy Company, LLC (NTEC).

The TR1 Project would add approximately 977 acres of new disturbance to mine approximately 72 million tons of coal. The TR1 Project would extend the life of the mine by about 4 years (from 2027 to 2031).

The permitted disturbance would increase from 6,134 acres to 7,111 acres (977 acres) for the life of the mine, but the approved surface mining permit boundary would remain the same at 9,220 acres. The TR1 Project would include some proposed changes to the currently-approved postmine topography to better resemble the premine topography and provide additional flat benched areas for sage grouse habitat reclamation. No new facilities would be constructed.

The final EIS describes the purpose and benefits of the Proposed Action, the Proposed Action and Alternatives, the environmental conditions of the affected area, the impacts and mitigation measures, and anticipated compensation.

PURPOSE, NEED, AND BENEFITS

DEQ's purpose is to act in a timely manner upon SCM's major revision application in accordance with the requirements of the Montana Strip and Underground Mine Reclamation Act (MSUMRA) (82-4-201 et seq., Montana Code Annotated [MCA]) and its implementing regulations (Administrative Rules of Montana [ARM] 17.24.301-1309) and to identify any permit conditions or alternatives that may reduce impacts to the human environment.

DEQ's need for the action is set forth in MSUMRA (82-4-201 et seq., MCA) and its implementing regulations (ARM 17.24.301-1309). Under MSUMRA, DEQ may not approve a permit or major revision for mining unless the applicant has affirmatively demonstrated that the requirements of MSUMRA will be observed, and if so, DEQ must issue the permit or amendment (§§ 82-4-227(1); 82-4-252, MCA).

To fulfill the obligations of their customers, SCM needs to access and mine leased coal reserves from Federal Coal Lease MTM-069782, MTM-94378 and State Coal Lease C 1088-05, and access Federal surface from Land Use Lease MTM-74913.

This EIS complies with Montana's Environmental Policy and Protection requirements (75-1-201 MCA), includes discussions of the economic and social impacts and benefits associated with the No Action and Proposed Action Alternatives (Section 3.7.4 and 3.7.5), and addresses the advantages and disadvantages of the proposed project in the short- and long-terms.

The Proposed Action would provide the following short-term and long-term socioeconomic benefits:

- An ongoing fuel source of 72 million tons of coal;
- Continued employment for workers at the mine;
- An ongoing tax base to federal, state, and local governments;
- Ongoing royalty payments to mineral resource owners;
- Continued support to local businesses for a minimum of 4 more years; and
- An ongoing source of income for SCC and NTEC.

PUBLIC INVOLVEMENT

DEQ published a legal notice of the scoping period and public meeting in newspapers on April 8 and April 15, 2018. The EIS scoping period began on April 6, 2018 and ended on May 7, 2018. DEQ held a scoping meeting and open house on April 18, 2018 in Hardin, Montana, where comments were recorded. DEQ accepted written comments throughout the scoping period. DEQ received 24 comment submissions.

The 30-day public comment period on the draft EIS began August 27, 2019 and ended September 26, 2019. The draft EIS public meeting was held on September 11, 2019. DEQ received written and oral comments on the draft EIS at the public meeting and during the public comment period.

ALTERNATIVES

1. No Action

Under the No Action Alternative, the SCM permit revision application would not be approved by DEQ. SCM would continue to operate the mine and process coal produced within their current disturbance area. At an average production rate of approximately 18 million tons per year, the mine life is expected to continue through approximately 2027.

2. Proposed Action

Under the Proposed Action, SCM would add 977 acres of additional disturbance to expand mining in pits and add approximately 72 million tons of recoverable coal. The mine life would be extended approximately 4 years to 2031 at an annual production rate of 18 million tons. The additional coal reserves are of similar coal quality compared to the currently leased and permitted coal mining reserves and annual coal production would not change. The number of employees and facilities would not change, but their employment and use would be extended by approximately 4 years.

The overall permit boundary would remain unchanged at 9,220 acres. The total life-of-mine disturbance within the permit boundary would increase by 977 acres from the current 6,134 acres to the proposed 7,111 acres.

A cultural resource mitigation would be completed before the disturbance of one site that is recommended as eligible for the National Register of Historic Places.

SCM would complete the wildlife mitigation required under stipulations from Federal Coal Lease Modification MTM-069782 and Land Use Lease MTM-74913 including the development of a Habitat Recovery and Replacement Plan (HRRP) to mitigated for impacts to sage grouse and other wildlife habitats in the disturbance area. Some of the HRRP tasks are linked with reclamation of the TR1 Project Area and will only be completed if the TR1 Project is approved by the DEQ and the Federal Mine Plan revision approved by the OSM. The HRRP tasks are provided in **Table 2.2-1**. SCM would also deposit compensatory mitigation funding in the amount of \$107,727 into the Montana Sage Grouse Oversight Team’s Stewardship Fund.

Table S-1.1-1 provides a comparison of the main features of the two alternatives.

**Table S-1.1-1
Comparison of Alternative Features**

Feature	No Action	Proposed Action (with Mitigations)
Surface Mine Permit Boundary	9,220 acres	Same as No Action
Life of Mine Disturbance Area	6,134 acres	7,111 acres (an additional 977 acres) Breakdown for TR1 Project: <ul style="list-style-type: none"> • 844 acres for expansion of Pits 1, 2 and 6 • 133 acres for constructing temporary overburden stockpile west of Pit 4
Surface Disturbance in Sage Grouse Core Area	1,395 acres	Approximately 642 additional acres in the TR1 would be disturbed for a total of 2,037 acres within SCM Permit Boundary. Mining would result in a loss of 615 functional acres of sage grouse habitat. <i>(Sage grouse compensatory mitigation of \$107,727 would be paid for loss of 615 functional acres.)</i>
Recoverable Coal	117.8 million tons	189.9 million tons (an additional 72.1 million tons)
Life of Mine	Mining continues to 2027 followed by reclamation	Based on the permitted production rate of 18 million tons per year, mining continues from 2027 through 2031, followed by reclamation.
Mine Closure & Reclamation	Reclamation methods per SCM’s approved Reclamation Plan; postmining land used for livestock grazing, wildlife habitat, and pastureland	Similar to No Action but post mining topography changes to provide additional bench areas more suitable for sage grouse. SCM would commit to implementing and completing the HRRP and would continue to participate in the Candidate Conservation Agreement with Assurances (CCAA) program. <i>(SCM would pay sage grouse compensatory mitigation amount of \$107,727 for loss of 615 functional acres of sage grouse habitat.)</i>

Additional voluntary sage grouse mitigation measures would be completed to offset the impacts from the Proposed Action. These mitigation measures would be implemented through the Thunder Basin Grasslands Prairie Ecosystem Association Candidate Conservation Agreement with Assurances.

SUMMARY OF IMPACTS

The impacts most likely to occur, or that would have the potential to affect some aspect of the human environment in a substantial way, are compared for each alternative in **Table S-1.1-2**. A full discussion of all potential impacts is contained in Chapters 3 and 4 in the resource-specific subsections.

**Table S-1.1-2
Comparison of Effects by Alternative and Resource**

Resource/ Issue	No Action	Proposed Action (with Mitigations)
Air Quality	Excellent air quality with limited local sources of pollutants and consistent wind dispersion. SCM to continue to control fugitive dust per SCM's Montana Air Quality Permit (MAQP) #1120-12.	Air quality would continue to be excellent. An estimated annual emission of PM ₁₀ of 668.53 tons per year over the additional 4 years if mine life. Fugitive dust would continue to be controlled per SCM's MAQP #1120-12
Land Use	SCM would not expand mining to the TR1 area and approved land use would remain unchanged. The 977 acres of grazing land would not be disturbed.	Surface disturbance for the additional 977 acres would be reclaimed to 748 acres of wildlife habitat and 229 acres of Grazing Land.
Noise	SCM would not expand mining to the TR1 area and existing noise levels are estimated to be approximately L ₉₀ 15 dBA and L ₅₀ 20 dBA, which are typical for sparsely populated, rural locations, with man-made noise sources intermittently higher. The predicted L ₅₀ noise levels would exceed ambient noise by more than +10 L ₅₀ dBA during pre-strip operations at 3 of the 4 nearest leks.	Expanded mining in Pits 1, 2, and 6 would result in short-term noise impacts at 3 sage grouse leks. The L ₅₀ noise levels are predicted to exceed the ambient noise by more than +10 L ₅₀ dBA at the Pasture lek during topsoil salvage in 2029, when the equipment is closest to the lek.
Socioeconomics	SCM would maintain current level of 281 employees for about 5 years (at 13 to 14 million tons per year); would increase to 340 employees with increase to 18 million tons per year. Total annual taxes and royalties paid to Montana to remain at approximately \$42 million.	Maintain approximately 281 to 340 employees and income for an additional 4 to 7 years. Total taxes and royalties of \$42 to \$59.5 million would continue to be paid to Montana over 4 to 7 more years.
Soils	SCM would not expand mining to the TR1 area and there would be no impacts to soils on the 977 acres.	An additional 977 acres would be disturbed with long-term and moderate impacts to soil physical properties, loss of soil structure, soil compaction, and potential soil erosion. Soil

**Table S-1.1-2
Comparison of Effects by Alternative and Resource**

Resource/ Issue	No Action	Proposed Action (with Mitigations)
		productivity would return to previous levels within 10 years after reclamation.
Transportation	SCM would continue to ship coal by rail, with an incidental amount by truck hauling, until all recoverable coal is mined in approximately 2027. An annual average daily traffic (AADT) count on Highway 314 would continue at about 176.	Continue to ship coal for about 4 additional years using the same methods and daily traffic counts.
Vegetation and Reclamation	SCM would not expand mining to the TR1 area and there would be no impacts to vegetation on the 977 acres.	The TR1 area supports sagebrush, grassland (including cheatgrass), greasewood, and limited stands of juniper in the draws and steeper slopes. Mining disturbances could result in additional weed infestations that would require monitoring and treatment. Much of TR1 reclamation is at the end of mining because of lengthening existing haul roads to recover the additional coal reserves. As a result, the haul road areas would be left unreclaimed for longer periods. (SCM would pay sage grouse compensatory mitigation amount of \$107,727 for loss of 615 functional acres of sage grouse habitat.)
Water	Mining would continue in the current permit area but not expand into the TR1 area. Existing impacts include reductions in the surface flow in Pearson Creek and reductions in the flow of the Anderson-Dietz (A-D) aquifer to the Tongue River Reservoir. Impacts to ground water would taper off over the remaining life of mine.	Most of the TR1 expands mining within the South Fork Spring Creek and Pearson Creek Drainage areas as shown in Figure 3.11-1. The TR1 revision would also reduce surface flow within the South Fork Pearson Creek ephemeral stream channel. The Proposed Action is modeled to discharge at approximately 157 gallons per minute to the Tongue River Reservoir from mining the A-D aquifer. As a result, the Proposed Action Alternative is projected to reduce ground water flow by an additional 28 gallons per minute or 45 acre-feet per year. Impacts would continue until TR1 Project Area is reconnected with Pearson Creek and the Tongue River Reservoir.

**Table S-1.1-2
Comparison of Effects by Alternative and Resource**

Resource/ Issue	No Action	Proposed Action (with Mitigations)
Wildlife	Wildlife habitat consists of sagebrush-steppe, upland grassland, bottomland, reclaimed grasslands, and agriculture fields. Impacts general to all wildlife species include mortality, disturbance, and habitat loss and would primarily be from road kill, collisions with powerlines and fences, and trapping in pits. These impacts would continue through the life of the mine but would be minimized through reclamation and continued adherence to existing plans that are part of the SCM permit. Additional voluntary conservation measures (CCAA, SOSI) would also help minimize impacts to wildlife, including sage grouse.	SCM has completed or nearly completed 12 of 14 HRRP requirements in advance of the TR1 Project. SCM also voluntarily participates in the CCAA related to TR1 to help minimize impacts to sage grouse and other anthropogenic activities in the area. SCM also submitted the SOSI Plan to provide broad, long-term direction for management of wildlife species of special interest that occur in the SCM wildlife monitoring area. (SCM would pay sage grouse compensatory mitigation amount of \$107,727 for loss of 615 functional acres of sage grouse habitat.)
Cultural Resources	There would be no additional ground disturbance with the potential to disturb cultural sites. Sites in the TR1 Project Area will continue to degrade naturally, which may result in data loss over time.	TR1 would adversely affect one site that has been determined to be eligible for the NRHP. The approved mitigation plan for the one site would be completed prior to disturbance.

CHAPTER 1

PURPOSE AND NEED

1.1 INTRODUCTION

This final Environmental Impact Statement (EIS) was prepared by the Montana Department of Environmental Quality (DEQ) Coal and Opencut Mining Bureau for the proposed TR1 major revision (TR1 Project) to the Spring Creek Mine (SCM) Surface Mining Permit C1979012. The SCM is operated by the Navajo Transitional Energy Company, LLC (NTEC). The SCM is in Big Horn County, Montana (**Figure 1.1-1**).

The TR1 Project would add approximately 977 acres of new disturbance necessary to mine approximately 72 million tons of coal reserves from federal and state coal leases within the current permit boundary. The coal would be mined from 571 acres of leased Federal coal and 273 acres of leased State coal which required the modification of Federal Coal Lease MTM-069782 and modification of Land Use Lease MTM-74913 (**Figure 1.1-2**). The TR1 Project would extend the life of the mine by about 4 years (from 2027 to 2031), based on a permitted production rate of 18 million tons per year. SCM submitted the TR1 Project application on March 2, 2012 and the application was deemed complete on December 6, 2013.

The permitted disturbance would increase from 6,134 acres to 7,111 acres (977 acres) for the life of the mine. Of the additional 977 acres, 844 acres would allow for expansion of Pits 1, 2 and 6 and 133 acres would be for constructing a temporary overburden stockpile in an area west of Pit 4. The approved surface mining permit boundary would remain the same at 9,220 acres. The TR1 Project would include some proposed changes to the currently approved postmine topography to better resemble the premine topography and provide additional flat benched areas for greater sage grouse (hereinafter sage grouse) (*Centrocercus urophasianus*) habitat reclamation. No new facilities would be constructed.

The Montana Environmental Policy Act (MEPA) (Title 75, Chapter 1, Parts 1 through 3, of the Montana Code Annotated [MCA]) requires an environmental review of major actions taken by the State of Montana. DEQ determined an EIS was the appropriate level of environmental review for the TR1 Project application because it involves a major action that could significantly affect the environment (§ 75-1-201-(1)(b)(iv), MCA). This final EIS has been prepared to fulfill MEPA's requirements.

The final EIS describes (among other things) the Proposed Action (including its purpose and benefits), the governmental units with jurisdiction over the action, the environmental conditions of the affected area, the impacts from the Proposed Action on the quality of the human environment, alternatives to the Proposed Action (including a No Action Alternative), mitigation and any compensation required, tradeoffs among reasonable alternatives (if any), and the agency's Proposed Alternative and the reasons for its preference (ARM 17.4.617).

Figure 1.1-1. Location Map

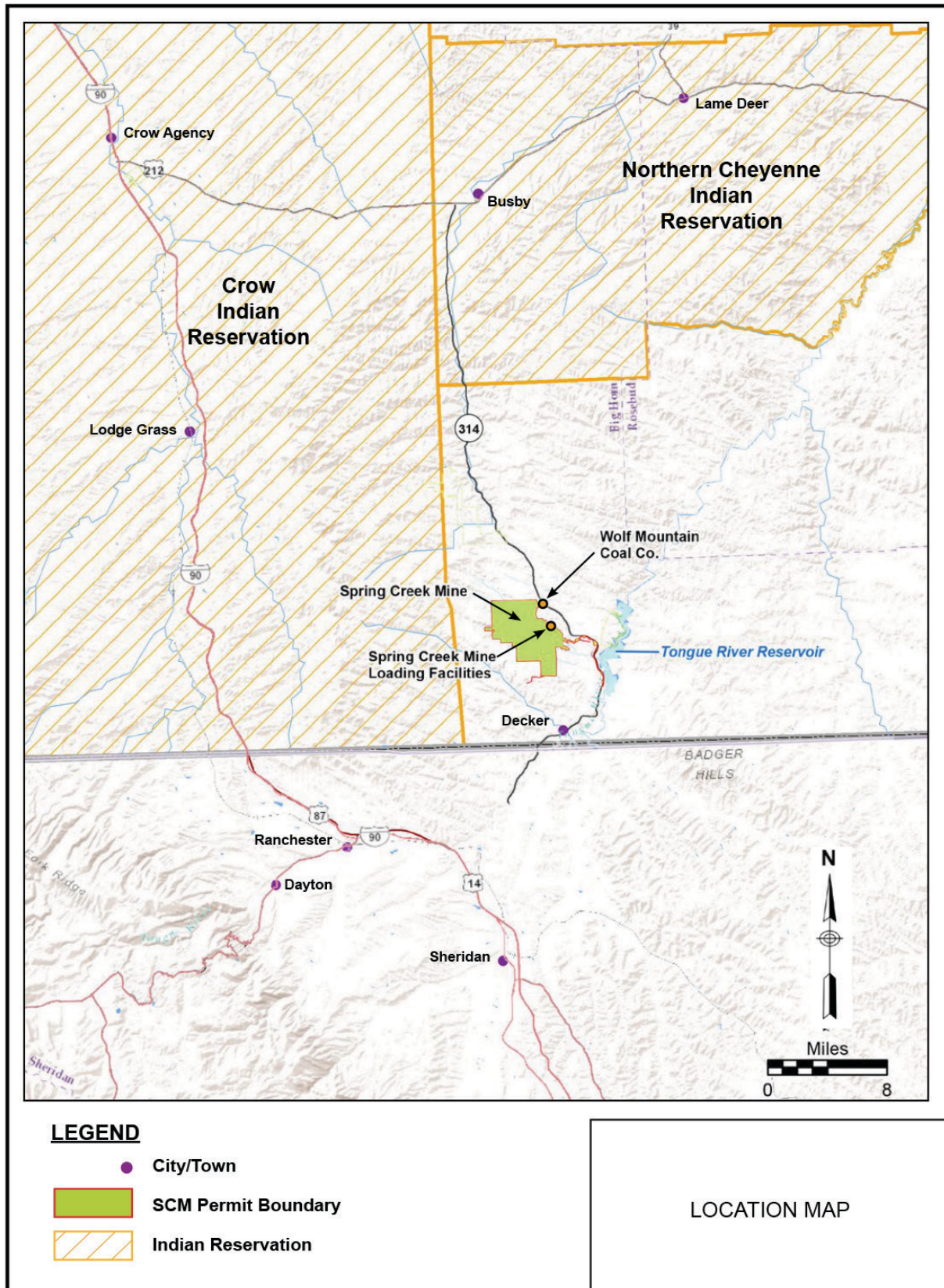
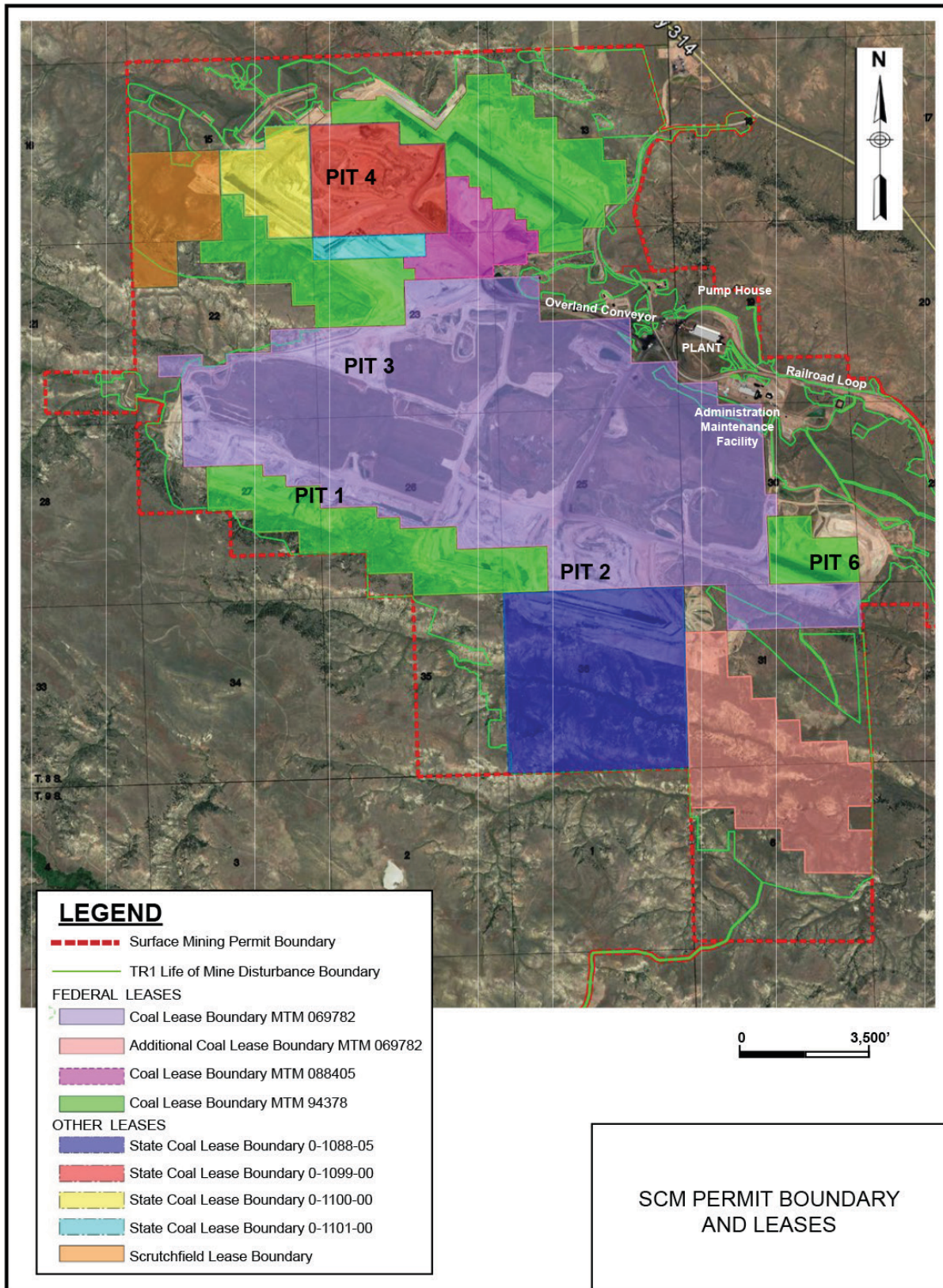


Figure 1.1-2. SCM Permit Boundary and Leases



DEQ's responses to substantive comments on the draft EIS have been included in this final EIS. DEQ will decide which of the alternatives analyzed in detail should be approved in DEQ's written findings. DEQ's written findings will be published no sooner than 15 days after publication of this final EIS.

1.2 PROJECT LOCATION AND HISTORY

The SCM is in Big Horn County near the Tongue River Reservoir north of Decker, Montana (**Figure 1.1-1**). Construction of the SCM began in April 1979. Coal mine production began in December 1980. The TR1 Project would expand mining in Pits 1, 2, and 6. Mining would be completed by 2031 and all reclamation completed by approximately 2035. The operating permit (#C1979012) has been amended as coal reserves were identified, as shown in **Table 1.2-1**.

**Table 1.2-1
Permit Amendment and Revision History Summary**

Amendment or Revision	Date Approved	Approved Actions
AM1	February 19, 1992	Application 00149 authorizes the addition of 1,487.5 acres to the approved permit area.
AM2	November 14, 2001	Application 00164 adds approximately 2,189 acres to the approved permit area.
AM3	January 29, 2008	Application 00174, South Fork Amendment adds approximately 158 acres to the approved permit area.
AM4	June 23, 2011	Application 00183, Pearson Creek Amendment adds 2,042 acres to the approved permit area.
AM5	Pending	Amendment to add 4,334 acres to the approved permit area for a haul road and associated high voltage distribution line to transport coal from a currently permitted mine in Wyoming to the SCM.
TR1 Project	Pending	A major revision to add 977 acres of additional disturbance within the previously approved permit area for expanded mining in Pits #1, #2, and #6 and construction of a temporary overburden stockpile west of Pit #4. The coal would be mined from 571 acres of leased Federal coal and 273 acres of leased State coal which required the modification of Federal Coal Lease MTM-069782. The TR1 major revision at the SCM was submitted by Spring Creek Coal (SCC), a wholly owned subsidiary of Cloud Peak Energy Resources, LLC (CPE). During the EIS development, CPE filed for bankruptcy and was acquired by the NTEC in August 2019. A minor revision was approved in October that made NTEC the contract miner at the SCM. The permit transfer from SCC to NTEC, which was submitted in November, is pending.

1.3 PURPOSE, NEED, AND BENEFITS

DEQ's purpose is to act upon SCM's major revision application in a timely manner in accordance with the requirements of the Montana Strip and Underground Mine Reclamation Act (MSUMRA) (82-4-201 et seq., MCA) and its implementing regulations (Administrative Rules of Montana [ARM] 17.24.301-1309) and to identify any permit conditions or alternatives that may reduce impacts to the human environment. The analysis will identify any potential environmental impacts of SCM's application to revise its operating permit to authorize additional mining and associated disturbance in Pits 1, 2, and 6 to recover an additional 72 million tons of coal and to allow additional disturbance west of Pit 4. Pursuant to MSUMRA, the surface-mine operating permit must be revised before SCM may access additional coal reserves needed to fulfill contractual obligations to its customers.

DEQ's need for the action is set forth in MSUMRA (82-4-201 et seq., MCA) and its implementing regulations (ARM 17.24.301-1309). Under MSUMRA, DEQ may not approve a permit or major revision for mining unless the applicant has demonstrated that the requirements of MSUMRA will be observed, and if so, DEQ must issue the permit or amendment (Sections 82-4-227(1); 82-4-252, MCA).

DEQ is also responsible for ensuring that significant environmental impacts are disclosed in an EIS. Pursuant to 75-1-201(4), MCA, DEQ may not withhold, deny, or impose conditions on the TR1 Project based on Parts 1 through 3 of MEPA. However, in accordance with the ARM 17.4.617(6) and (7), the EIS should include mitigation, stipulations, or other controls committed to and enforceable by DEQ and a discussion of any compensation related to impacts stemming from the Proposed Action.

To fulfill obligations to their customers, SCM needs to mine leased coal reserves from Federal Coal Lease MTM-069782, MTM-94378, and State Coal Lease C 1088-05 and to access Federal surface from Land Use Lease MTM-74913. To achieve this objective, SCM submitted the TR1 Project application to their Surface Mining Permit C1979012 to add 977 acres of disturbance to expand mining in Pits 1, 2, and 6 and to provide an area to construct a temporary overburden stockpile. The TR1 Project would add 72 million tons of recoverable coal and extend the mine life at least 4 years to about 2031 at an annual production rate of 18 million tons.

Pursuant to ARM 17.4.617 (1), an EIS should contain a description of the Proposed Action, including its purpose and benefits. The Proposed Action would provide the following short-term and long-term socioeconomic benefits:

- An ongoing fuel source of 72 million tons of coal;
- Continued employment for workers at the mine;
- An ongoing revenue to federal, state, and local governments;
- Ongoing royalty payments to mineral resource owners;
- Continued support to local businesses for a minimum of 4 more years; and

- An ongoing source of income for SCC and NTEC.

This EIS complies with Montana's Environmental Policy and Protection requirements for environmental impact statements (§ 75-1-201, MCA) and includes discussions of the economic and social impacts and benefits associated with the No Action and Proposed Action Alternatives (Sections 3.7.4 and 3.7.5) and addresses the advantages and disadvantages of the proposed project in the short- and long-terms.

1.4 AGENCY ROLES AND RESPONSIBILITIES

In 1973, the Montana legislature passed the MSUMRA. The State of Montana has assumed "exclusive jurisdiction over the regulation of surface coal mining and reclamation operations" within its borders (*see* 30 USC § 1253(a)). DEQ has developed, and the Secretary of the Interior has approved, Montana's permanent regulatory program authorizing DEQ to regulate surface coal mining operations on private, state, and federal lands within the State of Montana. DEQ is responsible for administering MEPA and MSUMRA and its implementing rules. The proposed TR1 Project is being reviewed and evaluated by DEQ under MSUMRA (30 C.F.R. §§ 926.10; 926.30).

1.4.1 Montana Department of Environmental Quality

1.4.1.1 Montana Environmental Policy Act

MEPA requires an EIS when making decisions or planning activities that may have a significant impact on the human environment. DEQ determined an EIS was necessary because the SCM TR1 Project would be a major state action with the potential to have a significant cumulative impact on the greater sage grouse (DEQ, 2017)(§ 75-1-201(1)(b)(iv), MCA; ARM 17.4.608). MEPA and its administrative rules define the process to be followed for preparing an EIS (Title 75, Chapter 1, Parts 1 through 3, MCA; ARM 17.4.601, *et seq.*).

1.4.1.2 Montana Strip and Underground Mine Reclamation Act

MSUMRA has three stages of application review: completeness, acceptability, and decision. A mine revision application (*e.g.*, TR1 Project) is considered administratively complete if it contains information addressing application requirements in Section 82-4-222 (revisions to a permit) and Section 82-4-231 (reclamation plan), MCA, and the rules implementing that section and all other information necessary to initiate the processing and public review. DEQ determined that SCC's application was complete on December 6, 2013, and began its review of the application for acceptability.

DEQ then provided deficiency notices to the applicant for any information that was deemed unacceptable or did not appropriately address a rule requirement, and afterward reviewed the materials submitted for deficiencies. The application was considered acceptable after all deficiencies were addressed.

The application is determined acceptable and the environmental review is completed. DEQ will issue written findings as part of the decision document. More specifically, within 45 days from the date that DEQ determines that the application is acceptable and 15 days after the Final EIS is published, DEQ shall prepare and issue Written Findings, also called a ROD, approving or denying the application in whole or in part, per § 82-4-231(8)(f), MCA, and ARM 17.24.405, and documenting DEQ's determination.

MSUMRA requires that SCC apply for and obtain a surface-mine operating permit prior to engaging in coal surface-mining operations in the Project Area. If approved, this permit would be subject to renewal at 5-year intervals by applying to DEQ at least 240 days (but not more than 300 days) prior to the renewal date (*see* ARM 17.24.416). To renew its permit, SCC would have to be in compliance with MSUMRA, environmental protection standards, and permit conditions. MSUMRA requires that the application affirmatively demonstrates full compliance with the 13 items listed in ARM 17.24.405(6), including but not limited to the 4 presented below:

- The application is complete and accurate, that the applicant has complied with MSUMRA and rules, and that the applicant has demonstrated reclamation can be accomplished;
- The hydrologic consequences and cumulative hydrologic impacts will not result in material damage to the hydrologic balance outside the permit area;
- The applicant has paid all reclamation fees from previous and existing operations nationwide; and
- The operation would not affect the continued existence of endangered or threatened species or result in destruction or adverse modifications of their critical habitats.

Conditions for Issuing a Permit

Because DEQ determined that an EIS was needed before making a permit decision, DEQ must complete and publish the Final EIS at least 15 days prior to issuing its written findings granting or denying the permit application per § 82-4-231(8)(c), MCA. Prior to approval of the TR1 Project by DEQ, SCC must affirmatively demonstrate to DEQ that it will comply with the applicable laws and rules and that postmining reclamation will be carried out in accordance with the requirements of MSUMRA. Because additional federal coal is involved, DEQ will submit its written findings and supporting documentation to the Office of Surface Mining Reclamation and Enforcement (OSMRE) for review. OSMRE will complete a National Environmental Policy Act review (42 United States Code [U.S.C.] Section 4321 et seq.) and prepare a mining plan decision document (MPDD) recommending approval, disapproval, or conditional approval of the modified federal mining plan. OSMRE often coordinates their review with the MEPA process and documents their decision in a Record of Decision. Before DEQ can issue a permit for the approved application, DEQ must have concurrence from the

federal regulatory authority, and the mine operator must submit a reclamation bond to DEQ per § 82-4-223, MCA, and ARM 17.24.405(7)(b).

Conditions for Denial

DEQ may not approve a permit application for new surface coal mining under certain circumstances, which include (without limitation) an inadequate reclamation plan; inadequate protection of water resources outside the permit area; unacceptable impacts on exceptional topographic features, cultural resources, or scientific characteristics; a proposed location on a significant alluvial valley floor; unacceptable impacts on critical biological productivity or ecological fragility; and the threat of a public hazard or designation of the land as unsuitable for mining (Section 82-4-227 and 228, MCA; ARM 17.24.1131–1148). DEQ must also withhold a permit if information contained in OSMRE’s Applicant Violator System identifies unabated or uncorrected violations of the Surface Mining Control and Reclamation Act of 1977 (SMCRA) or other environmental laws by affiliates or control entities of SCC or NTEC (Section 82-4-227, MCA; ARM 17.24.1265). If DEQ denies the permit, SCC can modify and resubmit its permit application to address issues or concerns identified by DEQ.

1.4.1.3 State and Federal Water Quality Statutes

The Montana Water Quality Act, Section 75-5-101 *et seq.*, MCA, and ARM 17.30.101 *et seq.* regulate discharges of pollutants into state surface waters through a Montana Pollutant Discharge Elimination system (MPDES) permit application process and the adoption of water quality standards. Water quality standards, including the Montana nondegradation policy, specify the changes in surface water or ground water quality allowed from a wastewater discharge. A MPDES permit is also required for discharges of stormwater associated with industrial activities and includes a storm water pollution prevention plan (40 CFR 122.26; ARM 17.30.1102(29), (30)). The federal Clean Water Act (CWA) (33 U.S.C. Section 1251 *et seq.* (1972)) also requires applicants for federal permits or licenses for activities that may result in a discharge to waters of the U.S. to obtain certification from the state under Section 401 of the CWA and comply with state water quality standards (33 U.S.C. Section 1341). Section 404 permits are issued by the U.S. Army Corps of Engineers (USACE) and require Section 401 certification. DEQ provides Section 401 certification per state regulations (ARM 17.30.101 -109).

1.4.1.4 State and Federal Air Quality Statutes

Air quality is regulated under federal and state requirements. Under the federal Clean Air Act (CAA) (42 U.S.C. Section 7401 *et seq.* (1970)), the U.S. Environmental Protection Agency (EPA) sets national standards for air quality and air pollutant concentrations. Under the CAA, states develop and implement procedures including monitoring, permitting, control measures, and enforcement to achieve and maintain these EPA-designated standards. EPA has set primary and/or secondary National Ambient Air Quality Standards (NAAQS) for seven criteria pollutants: carbon monoxide, lead, nitrogen dioxide, ozone, particulate matter, fine particulate matter, and sulfur dioxide. Under the CAA of Montana, DEQ has established Montana Ambient Air Quality

Standards (MAAQS). EPA approved Montana’s air quality program and has given DEQ authority to regulate air quality. DEQ requires a permit for the construction, installation, and operation of equipment or facilities that may cause or contribute to air pollution (Section 75-2-102, MCA).

1.4.2 SCM TR1 Project

SCM is operated by NTEC. SCM obtained an LBM approval from the U.S. Department of the Interior, Bureau of Land Management (BLM) in 2010 (BLM, 2010) for the area that would be mined by the TR1 Project. SCM submitted the original minor revision 168 (MR168) for Permit C1979012 on March 2, 2012, to DEQ to add approximately 1,011 acres to expand mining. The SCM mine expansion area was revised to 977 acres. Through DEQ’s acceptability/deficiency reviews, DEQ determined the Proposed Action constituted a major revision to SCM’s mine permit and the new project was named “TR1.” DEQ concluded its completeness review on December 6, 2013, and the acceptability review was completed with SCC’s response to the seventh round of comments on June 28, 2017.

1.4.3 Other Agencies Roles

Table 1.4-1 provides a summary of the state and federal permits and licenses, and their purposes. **Table 1.4-1** is not a comprehensive list of all permits, certificates, or approvals needed, but includes the primary federal and state agencies with permitting responsibilities.

**Table 1.4-1
Federal and State Permits, Licenses, and Approvals Required for the Project.**

Agency	Permit/License	Approval Purpose
U.S. Department of the Interior (assistant Secretary for Lands and Minerals/OSMRE)	Approval of Mining Plan (30 CFR 746)	To allow SCC to mine federal coal leases. Review of the proposed plan is coordinated with DEQ and federal agencies such as BLM. OSMRE recommends approval, disapproval, or conditional approval of the mining plan to the U.S. Department of the Interior (DOI) Assistant Secretary for Lands and Minerals.
U.S. Department of Interior (BLM)	Resource Recovery and Protection Plan (30 CFR 746.13)	To allow SCC to mine federal coal leases. BLM must make a finding and recommendation to OSMRE with respect to SCC’s Resource Recovery and Protection Plan and other requirements of SCC’s lease. BLM also will submit a recommendation regarding the federal mining plan.
U.S. Fish and Wildlife Service (USFWS)	Endangered Species Act of 1973 (ESA) Section 7 Consultation (16 U.S.C. Section 1536)	To protect Threatened and Endangered species and any designated critical habitat.
Montana DEQ	MSUMRA (Section 82-4-201, <i>et seq.</i> , MCA) Surface Mine Operating Permit	To regulate surface coal mining. Proposed activities must comply with state environmental standards and criteria. Approval may include stipulations for final design of facilities and monitoring plans. A sufficient reclamation bond must be posted with DEQ before

**Table 1.4-1
Federal and State Permits, Licenses, and Approvals Required for the Project.**

Agency	Permit/License	Approval Purpose
		implementing an operating permit modification. DEQ will coordinate with OSMRE.
	Clean Air Act of Montana (Section 75-2-102, <i>et seq.</i> , MCA) Air Quality Permit	To control particulate emissions of more than 25 tons per year.
	Montana Water Quality Act (Section 75-5-201 <i>et seq.</i> , MCA) MPDES Permit No MT0024619 and storm water MTR000514	To establish effluent limits, treatment standards, and other requirements for point source discharges, which includes storm water discharges to state waters. Coordinate with EPA. The MPDES and storm water permits have no changes associated with TR1.
	Hazardous Waste and Solid Waste Registration (various laws)	To ensure safe storage and transport of hazardous materials to and from the site and proper storage, transport, and disposal of solid wastes.
Montana State Historic Preservation Office	National Historic Preservation Act of 1966 Cultural Resource Clearance (Section 106 Review) (16 U.S.C. Section 470)	To review and comment on federal compliance with the National Historic Preservation Act (NHPA).

1.4.3.1 Montana Sage Grouse Habitat Conservation Program

The Montana Sage Grouse Habitat Conservation Program (Sage Grouse Program) was established in 2015 from collaborative work of the Montana Sage Grouse Habitat Conservation Advisory Council and other diverse stakeholders. The Sage Grouse Program was created to implement Executive Orders (EO) 12-2015 and 21-2015 across state government, federal land management agencies, and private entities wishing to develop projects in key sage grouse habitats. The Sage Grouse Program is overseen by the Montana Sage Grouse Oversight Team and administratively hosted by the Montana Department of Natural Resources and Conservation (DNRC).

Permit applications submitted in sage grouse core, general, or connectivity habitat, dated on or after January 1, 2016, must include a consultation letter from the Sage Grouse Program. The TR1 Project application was received and deemed complete in 2013 before the EOs' effective dates, thus exempting the application from the EOs and associated consultation. However, under MEPA and MSUMRA, DEQ evaluated potential impacts to sage grouse and related resources to consider alternatives and mitigations to the Proposed Action (Section 82-4-231(10)(j), MCA). For sage grouse, DEQ consulted with the Sage Grouse Program, Montana Fish, Wildlife, and Parks (FWP), BLM, and OSMRE to aid in the development of sage grouse mitigations. The resulting mitigation is described and included in the Proposed Action Alternative (Section 2.3.11).

1.5 PUBLIC PARTICIPATION

MEPA provides for public review and comment at the initiation of a project during scoping and once the environmental analysis is made available in the draft EIS document. The purpose of scoping is to gather input from the public, other governmental agencies, tribal governments, and organizations on the issues of concern and potential alternatives that would meet the purpose and need for a project.

DEQ held a scoping meeting and open house on April 18, 2018 at the Common Room in the Hardin High School in Hardin, Montana. The open house portion began at 5:00 PM with DEQ specialists available to answer individual questions. The public meeting began at 6:00 PM and included a court reporter for transcribing oral comments. The full transcript for the scoping meeting is included in the Administrative Record. DEQ also accepted written comments at the meeting, on DEQ's website, and by regular mail. DEQ published a legal notice of the scoping period and public meeting in the Big Horn County News, Billings Gazette, and Sheridan Press during the weeks of April 8 and April 15, 2018. The SCM TR1 Project EIS scoping period began on April 6, 2018 and ended on May 7, 2018.

The draft EIS was made available for public review and comment on August 27, 2019 with a 30-day comment period ending September 26, 2019. DEQ issued a press release announcing the comment period and a public meeting. The public meeting was held September 11, 2019 from 6:00 to 8:00 pm at the Big Horn County Extension Office in Hardin, Montana. Oral and written comments were accepted at the meeting.

Written and oral comments on the draft EIS appear in their entirety along with DEQ's responses to the comments in APPENDIX B.

1.5.1 Scoping Comments

DEQ received 24 comment submissions. These were from two groups ([1] Northern Plains Resource Council, the Western Organization of Resource Councils, and Powder River Basin Resource Council; and [2] Sierra Club and Montana Environmental Information Center) and 22 individuals. In addition, one individual provided oral testimony during the scoping meeting. The main issues identified from the scoping comments related to air quality; climate change and clean energy; coal train impacts; surface water quantity and quality; vegetation and reclamation; and social and economic conditions. Other issues mentioned included aquatic life and fisheries; ground water quantity and quality; health and safety concerns; land use and recreation; transportation; visual impacts; and wildlife. In addition, DEQ identified potential cumulative impacts to sage grouse core habitat through its internal scoping process.

1.5.2 Public Comment Period

The 30-day public comment period on the draft EIS began August 27, 2019 and ended September 26, 2019. The draft EIS public meeting was held on September 11, 2019. DEQ received written and oral comments on the draft EIS during the public comment period. All

public comments received during this period appear in their entirety, along with DEQ's responses to all substantive comments, are provided in APPENDIX B.

1.6 ISSUES

Issues were identified from public scoping comments, from other agencies' comments, and from internal discussions. Relevant issues were identified as ones with potential associated impacts that would adversely affect a resource area; these were retained for detailed analysis in this EIS. Nonrelevant issues were either beyond the scope of the Proposed Action, not supported by scientific evidence, or have no unresolved conflicts to resources (EQC, 2013); these nonrelevant issues were not carried forward for detailed analysis. Resource areas anticipated to be affected by the Proposed Action are provided in Section 1.6.1. Resources with no anticipated impacts or which are outside the scope of the analysis are presented in Section 3.2.

1.6.1 Resource Areas with Relevant Issues of Concern

The resource areas with relevant issues of concern associated with the Proposed Action are listed in **Table 1.6-1** and discussed in detail in their respective sections.

Table 1.6-1
Issues Discussed in the EIS and Location of Discussion

Resource Area	Section in EIS Where Discussed
Air quality	Section 3.4
Land use and recreation	Section 3.5
Noise	Section 3.6
Socioeconomics	Section 3.7
Soils	Section 3.8
Transportation (including rail)	Section 3.9
Vegetation and reclamation	Section 3.10
Water (surface and ground water quality and quantity)	Section 3.11
Wildlife	Section 3.12
Cultural Resources	Section 3.13
Cumulative impacts	Section 4.0

1.6.2 Resources Areas Not Carried Forward for Detailed Analysis

Nine resource areas with no substantive impacts anticipated by TR1 or resources areas with potential impacts beyond the scope of the TR1 project are discussed in Section 3.2. The determination and the rationale for eliminating these resource areas from detailed analysis are described.

1.7 SCOPE OF THE ANALYSIS

The geographic scope of the SCM TR1 Project EIS covers lands within the boundary of the proposed surface disturbance and lands outside of the surface disturbance boundary where resources may be affected by an alternative being analyzed. This environmental review only discloses potential impacts within the state of Montana as required by MEPA; the EIS may not examine actual or potential impacts outside of Montana (Section 75-1-201(2)(a), MCA). A No Action Alternative and a Proposed Action Alternative are analyzed in the EIS. A plan to mitigate impacts to sage grouse was analyzed as part of the Proposed Action.

The temporal scope of the EIS coincides with the life of mine extension. The additional 72 million tons of coal reserves would extend the mine for more than 4 years at the permitted annual production rate of 18 million tons per year.

1.8 FINANCIAL ASSURANCE

An adequate performance bond must be in place to ensure that reclamation of the TR1 Project expanded disturbance area will be completed. Before DEQ can issue a permit for the TR1 Project (if the Proposed Action Alternative is selected), SCC would be required to tender the appropriate performance bond. As federal lands are involved, the bond must be payable jointly to DEQ and OSMRE (30 CFR 926.30, Article IX). A complete description of DEQ's performance bonding procedure, including bond release by reclamation phase, is provided in ARM 17.24.1101 and is summarized below.

1.8.1 Performance Bond Amount

The amount of financial assurance SCC would provide is based on DEQ's estimated cost to complete site reclamation work if SCC could not or would not perform the required work. The direct and indirect reclamation costs are estimated using current industry standards and include the estimated cost for DEQ to contract, manage, and direct the reclamation work, plus any contingencies (*e.g.*, hiring a third-party contractor, interim and long-term site monitoring, and maintenance) and inflation (ARM 17.24.1102). The principal amount of the reclamation performance bond must be sufficient to cover the estimated cost to DEQ to ensure compliance with state reclamation requirements. The estimated \$108.85 million reclamation costs based on mining disturbance were approved by DEQ on September 10, 2018.

1.8.2 Timing of Performance Bond Calculation

The reclamation performance bond would be calculated in accordance with ARM 17.24.1102. A reclamation performance bond cost estimate for the TR1 Project would be provided by SCC. The final reclamation performance bond amount for the TR1 Project would be made by DEQ prior to issuing the written findings and the permit revision, if the permit revision application is approved. The reclamation performance bond would be in the form of a surety bond or a collateral bond (ARM 17.24.1105).

1.8.3 Performance Bond Review

Pursuant to ARM 17.24.1104, DEQ would conduct a review of the performance bond whenever the operating permit is reviewed: “The amount of the performance bond must be increased, as required by the department, as the acreage in the permit area increases, methods of mining operation change, standards of reclamation change or when the cost of future reclamation, restoration, or abatement work increases. The department shall notify the permittee of any proposed performance bond increase and provide the permittee an opportunity for an informal conference on the proposal. The department shall review each outstanding performance bond at the time that permit reviews are conducted under ARM 17.24.414 through 17.24.416 and reevaluate those performance bonds in accordance with the standards in ARM 17.24.1102.”

1.8.4 Performance Bond Release

DEQ is responsible for approval and release of the reclamation performance bond, although OSMRE would concur with bond release under 30 CFR 926.30, Article IX(B). The criteria and schedule for performance bond release are outlined in MSUMRA’s implementing regulations (ARM 17.24.1116). Specifically, “The department (DEQ) may not release any portion of the performance bond until it finds that the permittee (in this case, SCC) has met the requirements of the applicable reclamation phase as defined in this rule. The department (DEQ) may release portions of the performance bond applicable to a permit following completion of reclamation phases on the entire permit area or on incremental areas within the permit area” (ARM 17.24.1116(1)). Performance bond release is completed by reclamation phase. The four phases of reclamation that correspond to performance bond release, collectively known as the “bond liability period,” are described in the following subsections.

1.8.4.1 Phase I

Phase I bond release may proceed upon successful completion of backfilling, grading, and drainage control as outlined in the approved reclamation plan and the plugging of all drill holes not approved to be retained as monitoring wells per ARM 17.24.1116(6)(a).

1.8.4.2 Phase II

Phase II reclamation is deemed to have been completed when the requirements of ARM 17.24.1116(6)(b) have been met and soil replacement and tillage of the spoil and soil have been completed in accordance with the approved reclamation plan. At least two growing seasons (spring and summer for two consecutive years) must elapse after seeding or planting of the affected area. The established vegetation must be consistent with the species composition, cover, production, density, diversity, and effectiveness required by the revegetation criteria. Soils must be protected from accelerated erosion by the established vegetation. Noxious weeds must be controlled. Production of prime farmlands must be returned to the appropriate level.

1.8.4.3 Phase III

Phase III reclamation is deemed complete following the 10-year responsibility period (which commences following the last reclamation treatment as defined in ARM 17.24.725). The established landscape must be stable and consistent with the approved postmining land use. The reclaimed area cannot be contributing suspended solids to streamflow or runoff outside the permit area in excess of the requirements of ARM 17.24.633 or the permit. If an impoundment is to remain in place, DEQ must be satisfied the future management plan for the impoundment is sound and satisfactorily implemented. Finally, the reclaimed area must meet any special conditions provided in Section 82-4-235(4)(a), MCA.

1.8.4.4 Phase IV

Final (Phase IV) bond release is based in part upon successful revegetation. Under MSUMRA, a determination of successful revegetation and final bond release is based upon factors such as the effectiveness of the vegetation for the approved postmining land use, the extent of cover compared to natural vegetation, and other factors enumerated in Section 82-4-233 and Section 82-4-235, MCA. Phase IV reclamation is deemed to be complete in accordance with ARM 17.24.1116(6)(d): (1) reclamation Phases I through III must be complete for all disturbed lands within the designated drainage basin; (2) fish and wildlife habitats and related environmental values have been restored, reclaimed, or protected in accordance with MSUMRA, its implementing rules, and the approved permit; (3) disturbance to the hydrologic balance has been minimized and off-site material damage prevented in accordance with MSUMRA, its implementing rules, and the approved permit; (4) water supplies adversely affected by mining and reclamation operations must be replaced and must function in accordance with MSUMRA, its implementing rules, and the approved permit; (5) the essential hydrologic functions and agricultural productivity on any alluvial valley floors must be reestablished; (6) any SCC alternative land-use plan approved pursuant to ARM 17.24.821 and ARM 17.24.823 must be successfully implemented; and (7) all other reclamation requirements of MSUMRA, its implementing rules, and the approved permit must be met.

Final bond release relieves the operator of liability for corrective actions needed to comply with MSUMRA. ARM 17.24.1116(2). By allowing final bond release only after all disturbed lands have been reclaimed, fish and wildlife habitats have been fully restored, alternative water supplies are provided, and essential hydrologic functions of alluvial valley floor are restored, DEQ retains jurisdiction of the mine site and the financial security of the surety bond so corrective action can be taken.

CHAPTER 2

DESCRIPTION OF ALTERNATIVES

This chapter describes two alternatives evaluated in the EIS; the No Action and the Proposed Action Alternatives. The descriptions include maps, activities common to all alternatives, a comparison of the alternative focusing on the issues of concern, and design elements. This chapter also describes alternatives that were considered but not analyzed in detail.

The Proposed Action Alternative is based on the permit application materials submitted by SCC to DEQ for the TR1 major revision to permit C1979012.

2.1 DEVELOPMENT OF ALTERNATIVES

Alternatives were developed based on requirements for alternatives pursuant to MEPA and its implementing rules. MEPA does not specify the number of alternatives that need to be considered in the EIS; however, any alternative proposed must be reasonable, in that the alternative must be achievable under current technology and the alternative must be economically feasible as determined solely by the economic viability for similar projects having similar conditions and physical locations and without regard to the economic strength of the specific project sponsor (Section 75-1-201(1)(b)(iv)(C)(I), MCA). In accordance with ARM 17.4.603(2)(b), DEQ is “required to consider only alternatives that are realistic, technologically available, and that represent a course of action that bears a logical relationship to the proposal being evaluated.” In addition, MEPA requires a meaningful analysis of a No Action Alternative, along with other reasonable alternatives that may or may not be within the jurisdiction of the agency to implement (if any) (ARM 17.4.617(5)). DEQ must also assess the tradeoffs among the alternatives and identify DEQ’s preferred alternative (if any) (ARM 17.4.616(3) (c) and (d); ARM 17.4.617(8) and (9)).

Under MEPA, “alternative” means an alternative approach or course of action that would appreciably accomplish the same objectives or results as the Proposed Action; this includes design parameters, mitigation, or controls other than those incorporated into a Proposed Action by an applicant or by an agency prior to preparation of the EIS (ARM 17.4.603(2)).

As part of the MEPA review process, DEQ cannot impose measures on SCC’s Operating Permit beyond what is required for compliance with MSUMRA and other state statutes. However, SCC and DEQ can mutually develop measures that, if requested by SCC, would be incorporated into the proposed permit application.

DEQ considered several alternatives that (1) had greater impacts to the human environment than the Proposed Action, (2) did not meet the project’s stated purpose, or (3) did not meet the criteria for reasonableness. The alternatives were not carried forward for detailed analysis and are discussed in Section 2.4.

A summary of the alternatives and potential impacts for the No Action and the Proposed Action is provided in **Table 2.5-1** and **Table 2.5-2**. The detailed analysis, description of potential impacts, and tradeoffs from the alternatives on each resource area are in Chapters 3 and 4.

2.2 NO ACTION ALTERNATIVE

MEPA requires a meaningful No Action analysis for all environmental reviews. **Figure 2.2-1** provides a graphical presentation of the No Action Alternative. The No Action Alternative provides a comparison and baseline of environmental conditions without the Proposed Action. MEPA requires the consideration of the No Action Alternative, even if it would fail to meet the purpose and benefits or would not be able to satisfy environmental permitting standards.

Under the No Action Alternative, the SCM permit revision application would not be approved by DEQ for one or more of the conditions for denial listed in Section 1.4.1.2 of this EIS. SCM would continue to operate the mine and process coal produced within their current disturbance area. At an average production rate of approximately 18 million tons per year, the mine life is expected to continue through approximately 2027. Information in this section is a summary of the currently-approved operating permit, which is available on DEQ's ePermit public portal <http://svc.mt.gov/deg/myCOALPublic/180/ePermitAdmin/ApplicationForm>.

In 2017, 58 percent of the coal mined from SCM was shipped to US domestic electric generation facilities. About 7 percent was used domestically for industrial purposes. Less than 1 percent was used for residential and institutional heating. Approximately 34 percent was sent to international markets for electric generation (SCM, 2018a). SCM expects future sales to be similar to the recent past.

2.2.1 Permit Boundary and Disturbed Area Description

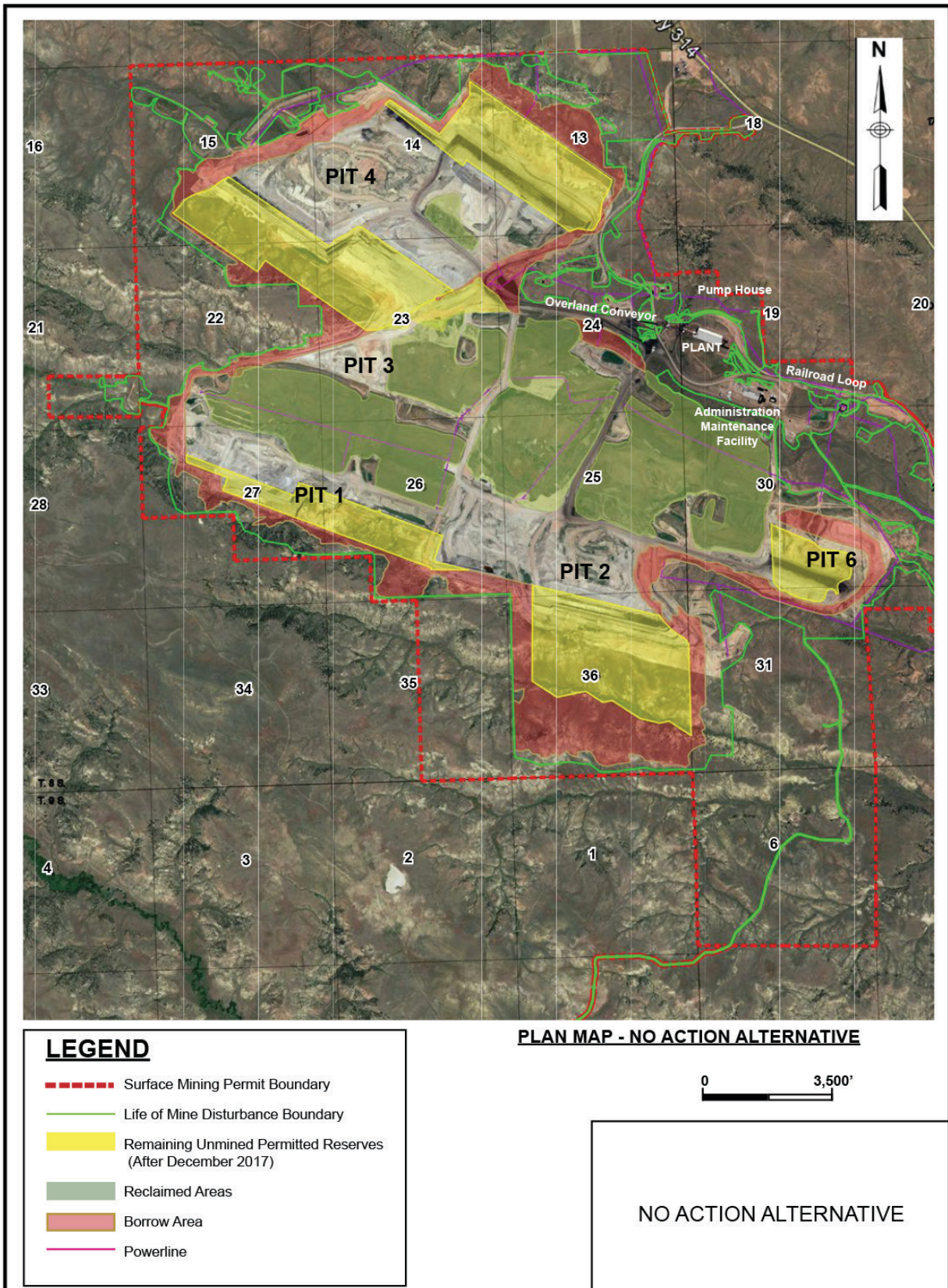
The mine permit boundary encompasses 9,220 acres and 6,134 acres within the permit boundary are approved for disturbance. No changes would occur in the permit boundary or the disturbance area. The current permit boundary for SCM is displayed on **Figure 1.1-2**. No new mining facilities would be constructed.

2.2.2 Water Management and Protection

SCC prepared a plan to protect the hydrologic balance during and after mining and reclamation activities and must conduct mine and reclamation operations in such a way as to minimize any probable impacts to the hydrologic balance and to avoid material damage outside the permit area. Surface water and groundwater monitoring and investigation information for the SCM are contained in the Probable Hydrologic Consequences Update (SCM and WWC Engineering, 2017).

Mine water needs (for dust control and other purposes) would continue to be supplied by surface water and ground water sources. Surface water quality in and adjacent to the SCM

Figure 2.2-1. No Action Alternative



would continue to be protected by surface water control measures including ponds, traps, diversions and culverts. Water originating in or flowing across disturbed areas would continue to be collected and allowed to settle in sediment control ponds before evaporation, infiltration, or discharge to the natural drainage.

Ground water quantity and quality for pre- and postmining conditions would continue to be monitored and reported as discussed in the Probable Hydrologic Consequences Update (SCM and WWC Engineering, 2017). Both surface water and ground water within and adjacent to the SCM would be protected from adverse effects of the mining activities.

SCM would replace the water supply of any impacted nearby landowner, as necessary and in like kind and quality, if such water supply is contaminated, diminished, or interrupted because of their mining operations.

SCM would continue to be required to comply with the CAA, CWA, Resource Conservation and Recovery Act and other applicable laws and standards contained in their permit documents.

2.2.3 Mine Personnel

SCM employs 285 people. Employment would continue until approximately 2027. At mine closure, reclamation is expected to initially employ 30 people, tapering off as reclamation is completed and activities focus on monitoring and bond release.

2.2.4 Cultural and Historical Resource Protection

Pursuant to ARM 17.24.304, the mining permit includes a measure to avoid or minimize impacts on cultural and historical resources. This measure states that:

- SCM will contact DEQ and the State Historical Preservation Office if any unrecorded cultural resource site is discovered during mining. All appropriate action would be taken to properly record and mitigate any such site.

2.2.5 Mining Methods and Facilities

The following provides information about SCM's current surface coal mining methods and facilities. Mining activities are supported by existing, permitted facilities within the SCM permit boundary and include the main facilities (buildings, coal handling facilities, and ancillary facilities). Other facilities include the train loadout, railroad loop, explosives storage area, scoria pits, landfarm, sediment control ponds and diversions, the access road, haul roads and miscellaneous light use roads.

Overburden is removed by a combination of dragline, cast blast, dozer, and truck/shovel methods. Coal is removed by truck and shovel type systems.

2.2.5.1 Soil Salvage and Overburden Salvage and Removal

Prior to any surface disturbance by mining and after removing larger woody vegetation, suitable topsoil is removed to predetermined depths using scrapers, dozers, or other equipment. Soil is segregated into two lifts. Lift 1 has a stripping depth of approximately 6

inches and contains soils from the A, E, and possibly upper B or C horizons; these soils go into A topsoil stockpiles. Lift 2 salvages the deeper suitable topsoil that goes into B topsoil stockpiles.

Following topsoil salvage, the overburden is drilled and blasted using a mixture of ammonium nitrate and fuel oil explosive. The blasted and fragmented overburden is then moved using combinations of draglines, shovels, trucks, and dozers.

2.2.5.2 Coal Removal

SCM mines coal from a seam averaging 80 feet thick. The coal is blasted using ammonium nitrate and fuel oil explosives and methods similar to what is used for the overburden. The coal is then loaded with shovels and front-end loaders into mining haul trucks. The coal is transported to the primary crusher at the truck dump or to the in-pit crusher for overland conveying. Mining frequently occurs simultaneously at multiple locations across the mine to blend the coal and create a marketable product to meet various customer specifications.

While the permitted mine plan projects an average annual production rate of 18 million tons from the SCM, production rates have been below this rate since 2014.

SCM currently ships coal to multiple power-generating stations (EIA, 2019) (below) and will continue to identify other customers for its coal.

- Presque Isle, Michigan
- Clay Boswell, Minnesota
- Hoot Lake, Minnesota
- Transalta Centralia Generation, Washington
- Coronado, Arizona
- DTE VRSC Shared Storage

2.2.5.3 Overburden Replacement

Overburden is placed as backfill in the mined-out pits with a dragline and by cast blasting from the adjacent pit area to be mined, according to ARM 17.24.501 and the General Backfilling and Grading Section of SCM's approved permit (SCM, 2011a). SCM has estimated up to 35 percent of the overburden volume in some areas can be moved by cast blasting. Overburden can also be transported by truck and placed on backfilled areas to achieve the designed topography (see Section 17.24.501). Final postmining topography is designed to approximate premining topography given the constraints of the equipment and material characteristics with goals to limit erosion and sedimentation on adjacent undisturbed and reclaimed areas and to reestablish channels, floodplains, valleys, and drainage basins (SCM, 2018c).

Overburden at SCM is not acidic or an acid-forming material. It is tested following grading to ensure compatibility with DEQ spoil quality guidelines. There are some overburden materials that are sodium-affected but the sodium is not at levels considered to be toxic to plants, soil organisms, or surface and ground water. There are thin, isolated partial coal stringers in some

pre-stripped areas that are mixed with other overburden and placed at least 8 feet deep in the regraded spoil profile. These materials present limited concern or potential as a fire hazard.

2.2.6 Fish and Wildlife Plans

SCM's Fish and Wildlife Plan (SCM, 2017b) (ARM 17.24.312), and Protection and Enhancement of Fish, Wildlife and Related Environmental Values (SCM, 2017b) (ARM 17.24.312) include measures to protect wildlife. The plans are designed to minimize impacts on wildlife during the life of mine. Through the modification of Federal Coal Lease MTM-069782 and of Land Use Lease MTM-74913, SCM, DEQ, FWP, and BLM developed a required Habitat Recovery and Replacement Plan (HRRP) to mitigate for impacts to sage grouse and other wildlife habitats in the disturbance area. The HRRP tasks are listed in **Table 2.2-1**. Some of the HRRP tasks are linked with reclamation of the TR1 Project Area and will only be completed if the TR1 Project is approved by the DEQ and the Federal Mine Plan revision approved by the OSM.

SCM would continue to implement the protection and enhancement measures included in the mining permit (SCM, 2017b) (ARM 17.24.751) which are summarized below:

- Electrical power lines and transmission facilities would be designed and constructed to minimize collisions and electrocutions of raptors, waterfowl and other wildlife following guidelines in *Suggested Practices for Raptor Protection on Power Lines: The State of the Art in 1996* (APLIC, 2006).
- Haul and access roads would be located and operated to avoid or minimize impacts to important fish and wildlife species, and other species protected by state and federal law.
- Fences, overland conveyers, and other potential structures would be designed and constructed to permit passage of large mammals, except where the DEQ determines such requirements would not be necessary.
- Wildlife would be excluded from ponds that contain hazardous concentrations of toxic-forming materials by fence, cover, or use other appropriate methods.
- Appropriate state and federal fish and wildlife and land management agencies would be consulted to ensure reclamation provides for the habitat needs of various wildlife species in accordance with the approved postmining land use. Pursuant to Section 82-4-231(10)(j) and Section 82-4-232(9), MCA, special attention would be given to inanimate elements such as rock outcrops, boulders, rubble, dead trees, etc., that may have existed on the surface prior to mining, and to plant species with proven nutritional and cover values. Plant groupings and water sources would be distributed to fulfill the requirements for fish and wildlife. Vegetative cover would not be less than required by the approved postmining land use.
- Wetlands, riparian vegetation along rivers and streams and bordering ponds and lakes, and other habitats of unusually high value for fish and wildlife would be restored or avoided, and where practicable, enhanced. Prior to disturbing any delineated wetlands and during the appropriate permitting period, permanent mitigation plans would be developed and submitted to DEQ and OSMRE for review and approval. The approved

mitigation plan would then be submitted to the USACE. SCM would use a wetland delineation approach like what was submitted with the Pearson Creek Amendment package.

- Aquatic communities would be protected by avoiding stream channels, or by restoring stream channels as required by ARM 17.24.634.

SCM would use the following best practices outlined in SCM's Fish and Wildlife Plan to the extent possible (SCM, 2017b):

- Develop a separate Species of Interest Monitoring and Management Plan to serve as an overall guidance document for minimizing impacts to wildlife and wildlife habitats during the life-of-mine.
- Honor raptor nest buffers to the extent practicable except when birds clearly demonstrate tolerance by nesting near ongoing mine operations.
- Honor grouse lek buffers to the extent practicable and schedule disturbance activities near active leks to occur outside the breeding season.
- Complete reclamation contemporaneously to minimize the disturbance footprint of the mine.
- Design and construct all electric power lines and other associated transmission facilities in the permit area in accordance with guidelines in the most current recommendations from the Avian Power Line Interaction Committee (APLIC) or USFWS to minimize collisions and electrocutions of raptors, waterfowl, and other wildlife species.
- Construct temporary ponds and traps to provide resources for wildlife during mining; include escape ramps, as appropriate.
- Use proper stream crossing, culvert designs, erosion control, and sediment control features (i.e., Best Management Practices) to minimize impacts to stream crossings, aquatic species and habitats, and watersheds. Culvert crossings of minor drainages or super-span arch crossings of all major drainages will be engineered and installed to not impede natural flow once completed. These crossings will assure continuity of flow for wildlife uses and appropriators downstream.
- Use proper designs for fences, above-ground conveyors, and above-ground creek crossings to allow big game to pass unimpeded across or under roads and railways, per current Montana Fish, Wildlife and Parks (FWP), BLM, or other agency guidelines for such structures.
- Consolidate infrastructure such as roads, overhead power lines, etc. when feasible to minimize habitat fragmentation and avoid sensitive habitats, when possible.
- Conduct regular training sessions and/or communication with equipment operators, supervisors, and contractors to maintain awareness of the importance of wildlife in the environment at SCM, potential wildlife concerns, and the need for all personnel to be committed to minimizing impacts to wildlife resources to the extent practicable, particularly during the breeding season and harsh winter conditions when species are most vulnerable.

- Continue to provide nesting sites for resident and seasonally present raptors; construct scarps or steep-sloped areas designed to replace existing cliff habitat in the postmining landscape to mitigate losses of potential raptor nesting sites within the affected area.
- Prevent disturbance in the dense sagebrush bench area between Pits 1 and 4.
- Regularly review and analyze wildlife monitoring information and attempt to schedule mining activity around potential nesting/rearing seasons when possible.
- Monitor all environmental variables, including vegetation, soils, wildlife (terrestrial and aquatic, as warranted), water, and air quality/meteorology to proactively mitigate mine related impacts.
- Follow the approved Reclamation Plan to establish the desired postmining habitats and land uses, per ARM 17.24.313(h).

The HRRP tasks associated with SCM's leasing of federal coal reserves for the TR1 Project are listed in **Table 2.2-1**. SCM worked with the DEQ, BLM, and FWP to develop the HRRP tasks, particularly those associated with sage grouse mitigation. SCM voluntarily began implementing many of the HRRP tasks in advance of mining disturbances for the TR1 Project. The HRRP includes commitments to complete 14 tasks, and 12 of which have been completed or nearly completed (SCM, 2017b).

2.2.7 Air Pollution Control

Fugitive dust is regulated pursuant to ARM 17.8.308 and in accordance with SCM's air quality permit number 1120-12. Operations that emit fugitive particulate matter would be subject to DEQ air quality regulations ARM. 17.8.304 and 17.8.308(2) and (3). Pursuant to ARM 17-8-304(2), fugitive dust emissions would not be allowed to exceed visible opacity of 20 percent or greater, averaged over 6 consecutive minutes. Pursuant to ARM 17.8.308(2), SCM would also be required to take reasonable precautions to control emissions of airborne particulate matter from operations. MSUMRA requires that all surface areas associated with SCM's operations be stabilized and protected to effectively control air pollution (Section 82-4-231(10)(m), MCA). Operators are required to employ fugitive dust control measures in accordance with Section 82-4-231(10)(m), MCA, the operator's air quality permit, and applicable federal and state air quality standards (ARM 17.24.761(1); 17.24.311(1)). Monitoring to evaluate the effectiveness of the fugitive dust control practices must also be conducted (ARM 17.24.761(2)).

**Table 2.2-1
SCM Habitat Recovery and Replacement Plan (HRRP) and Related Projects**

Number	Benefit Term	Project	Mitigation (M) ¹ or Compensation ² (C)	Plan Item Reference	Approvals Required	Implementation Date
1	Long Term	Continue to investigate several methods of sagebrush establishment	M	2(a)	None Required	2009 to 2013 (Completed)
2	Long Term	Enhance existing reclamation with sagebrush interseeding	M	2(a)	Already allowed by Mining Permit 79012 Section 313(h)(ii).	2009 to 2016 (Completed)
3	Long Term	Removing Pastureland Seeding from Reclamation Plan	M	2(a)	Approved by DEQ under MR 08-12-09	August 2008 (Completed)
4	Long Term	Revise Reclamation Plan to balance land use types such as Pastureland	M	2(a)	DEQ with approval of Permit Amendment 183	June 2011 (Completed)
5	Long Term	Get DEQ approval to use sagebrush grassland or other new seed mixes	M	2(a)	Approved by DEQ under MR 08-12-09	August 2008 (Completed)
6	Short Term	Fund \$12/acre for Land Owner Incentive Program for land to be disturbed by mining in LBM area	C; expect this will only preserve sage grouse habitat in areas away from the mine.	2(b)	None Required	Not Completed. The Land Owner Improvement Program is no longer available.
7	Short Term	Provide FWP with a list of landowners who have expressed an interest in participating in conservation programs	C or M; C if native rangeland is preserved away from the mine, M if native rangeland areas are preserved near the mine.	2(b)	FWP	Not Completed. At least one year prior to disturbance.
8	Long Term	Provide Mechanical Manipulation Study Plan to FWP, and BLM areas inside and possibly outside the LBM area	C or M; C if native sagebrush areas are improved in other areas, M if native sagebrush areas are improved near the mine.	2(c)	BLM, FWP, and DEQ	The project started in 2013 and was completed in 2018.
9	Short Term	SCM will consult with agencies to see if there is any benefit to removing existing fencing in Sections 6 & 31	M	2(d)	MFWP & BLM	Spring 2013 (Completed)

**Table 2.2-1
SCM Habitat Recovery and Replacement Plan (HRRP) and Related Projects**

Number	Benefit Term	Project	Mitigation (M)¹ or Compensation² (C)	Plan Item Reference	Approvals Required	Implementation Date
10	Short Term	Any new fencing will be constructed with a wildlife friendly design	M	2(d)	None Required	Summer 2012 (Completed)
11	Short Term	Evaluate during next grazing agreement renewal (annually) in Sections 6 & 31 to ensure sage grouse habitat is protected.	M	2(e)	None Required	Spring 2009 to 2012 (Completed)
12	Long Term	Final habitat recovery will be achieved during Phase IV bond release of current mining and the LBM area	M	3	DEQ	Reclamation Commitments in TR1 Project Permit (Completed)
13	Short Term	Continue to treat water in ponds and stored tires with mosquito larvicide	M	3	None Required	Annually (Completed)
14	Short Term	Additional winter/spring wildlife monitoring plan for 2008	N/A	3	Approved (BLM, FWP, and DEQ)	Spring 2008 (Completed)
Additional Related Actions to Help Sage Grouse						
15	Long Term	Modified Postmining Topography to provide additional bench areas and less dramatic topography for sage grouse	M	See MR 168 Cover Letter Dated 3-2-12	DEQ	Not Completed. To be completed if TR1 Project is approved
16	Long Term	CCAA Agreement	C		..	NTEC entered into voluntary 30-year plan in 2017 (Completed)

Source: (SCM, 2017b)

1 Mitigation is defined as “rectifying an impact by repairing, rehabilitating, or restoring the affected environment” in MEPA Guide p. 28, Rev 2006.

2 Compensation is defined as, “the replacement or provision of substitute resources or environments to offset an impact on the quality of the human environment” under MEPA.

Long Term = birds may not benefit for 5 + years. Short Term = birds may benefit from the project before 5 years.

Measures used to control fugitive dust according to SCM's Air Pollution Control Plan (SCM, 2002) include:

- Enclosed conveyors;
- Enclosed truck dump stilling shed with a dust suppression system;
- Dust suppression at the crusher operation;
- Dust suppression at the collection system and railcar loadout chute;
- Completely enclosed storage barn for the coal storage pile;
- Minimize fall distances of coal and overburden when loading trucks and stockpiles;
- Prevention of overshooting when blasting;
- Use of vegetation to prevent wind erosion;
- Use of chemical dust suppression and water on haul roads along with removal of loose debris from haul roads;
- Reclamation within one growing season;
- Paved access roads; and
- Baghouse filters on the coal quality analytical laboratory coal sample system exhaust.

2.2.8 Approximate Original Contour, Soil Distribution, and Seeding

SCM is required to return the postmine topography to the approximate original contour, which is defined by Section 82-4-203(4), MCA as:

That surface configuration achieved by backfilling and grading of the mined area so that the reclaimed area, including any terracing or access roads, closely resembles the general surface configuration of the land prior to mining and blends into and complements the drainage pattern of the surrounding terrain, with all highwalls, spoil piles, and coal refuse piles eliminated, so that:

(a) the reclaimed terrain closely resembles the general surface configuration if it is comparable to the premine terrain. For example, if the area was basically level or gently rolling before mining, it should retain these features after mining, recognizing that rolls and dips need not be restored to their original locations and that level areas may be increased;

(b) the reclaimed area blends with and complements the drainage pattern of the surrounding area so that water intercepted within or from the surrounding terrain flows through and from the reclaimed area in an unobstructed and controlled manner;

(c) postmining drainage basins may differ in size, location, configuration, orientation, and density of ephemeral drainageways compared to the premining topography if they are hydrologically stable, soil erosion is controlled to the extent appropriate for the postmining land use, and the hydrologic balance is protected; and

(d) the reclaimed surface configuration is appropriate for the postmining land use.

Reclamation activities include (1) grading the spoils to limit erosion, (2) constructing any reclamation enhancement features, (3) sampling the spoils for suitability, (4) ripping the suitable spoils to reduce compaction, (5) distributing the soils to the prescribed depths, and (6) preparing the seedbed, seeding with the approved seed mix, and applying mulch, if needed. Final postmining topography surfaces are configured to limit erosion and sedimentation onto adjacent undisturbed or reclaimed areas and to reestablish channels, floodplains, valleys, and drainage basins.

SCM will use weed-free seed to help control noxious weeds. If mulch is used, weed-free sources will be utilized. Additionally, SCM will utilize several other practices to control weeds such as cutting or mowing; cultivation or tillage; crop or plant competition; burning; biological control; and chemicals/herbicides. SCM will comply with established practices and criteria outlined by the Montana Department of Agriculture's County Noxious Weed Control Law, and by adhering to the Big Horn County Noxious Weed Management Plan (SCM, 2018c).

2.2.9 Mine Closure and Reclamation Plan

Existing disturbed areas for the support facilities, such as roads, office buildings, shops, coal handling facilities, conveyors, powerline, and fences, would be completely reclaimed at the end of mining operations. After mining, all structures, including but not limited to partially buried wire, conduit, waterlines, and other support facilities, will be removed and all areas (including mined areas) graded to approved postmining contours. Following grading operations, areas will be topsoiled and seeded in accordance with procedures outlined in the approved Operations and Reclamation Plans (SCM, 2018c).

Mining would cease at SCM in approximately 2027 under the No Action Alternative. Reclamation methods are set forth in SCM's approved Reclamation Plan (SCM, 2018c). The approved postmining land uses are livestock grazing, wildlife habitat, and pastureland.

SCM's reclamation plan accounts for all permit provisions during a temporary cessation of operations per ARM 17.24.521 (SCM, 2001). In the event a permanent cessation of mining occurs, SCM would close or backfill and otherwise permanently reclaim all affected areas of mining per ARM 17.24.522 (SCM, 2000).

SCM's performance bond has been established to cover the cost of reclamation in the event SCM fails to perform reclamation in a successful manner. The performance bond is evaluated and adjusted annually to improve bond accuracy. The annual evaluation is based on topography and detailed earthwork requirements to achieve an approved postmining topography. The performance bond amount as of September 2018, in the form of several sureties, was \$108.85 million (DEQ, 2019).

2.2.10 Environmental Monitoring

SCM conducts environmental monitoring and data-gathering activities inside and outside the mine permit boundary. Resource-specific monitoring includes, but is not limited to, ground water, surface water, vegetation, wildlife, soils, and weather. These environmental monitoring activities have minimal surface impacts, other than those from vehicular access to the areas on existing roads and trails. These monitoring activities are part of SCM's permit and must continue until final performance bond release.

Surface disturbances resulting from environmental monitoring, including rutting and tracking from vehicle traffic on roads and off roads during wet weather conditions or other factors, will be repaired and seeded by SCM with an approved seed mix as soon as possible. Road repairs will be completed in compliance with the requirements of ARM 17.24.1004 through 1013 and will be completed so the affected areas are returned to the approved post-disturbance land use.

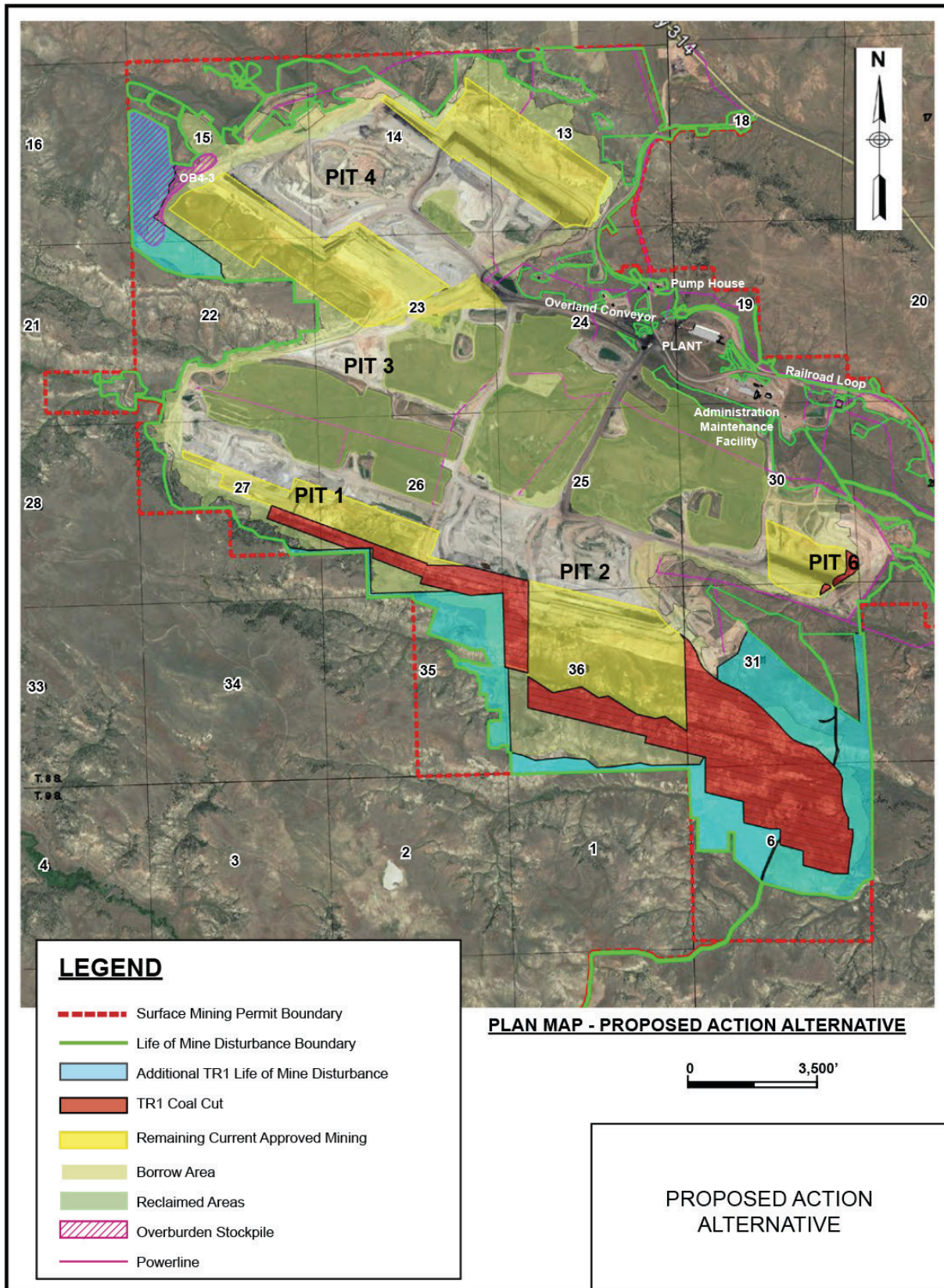
Vegetation monitoring is an ongoing activity consisting of sampling vegetation reference areas for performance bond release and annually monitoring revegetation progress. Ground water monitoring consists of regular periodic monitoring and maintenance of water wells within SCM's currently active ground water monitoring and sampling sites. Surface water monitoring involves regular periodic monitoring and maintenance of SCM's surface water monitoring and sampling sites. Wildlife monitoring has been conducted as prescribed in ARM 17.24.312, 17.24.723, and 17.24.751 of the mining permit to determine changes to the wildlife that reside in or use the SCM area. Wildlife monitoring includes monitoring within the mine permit boundary and within a 2-mile buffer area outside the mine permit boundary. Weather is regularly monitored using a meteorological station and data recorder. Surveying work consists of periodic visits to established survey control points to maintain the network of survey control.

2.3 PROPOSED ACTION ALTERNATIVE

SCM submitted the TR1 major revision application to their Surface Mining Permit C1979012 to add 977 acres of additional disturbance to expand mining in Pits 1, 2, and 6 to provide additional coal and to provide an area west of Pit 4 to construct a temporary overburden stockpile. The TR1 Project includes modification of Federal Coal Lease MTM-069782 and modification of Land Use Lease MTM-74913 which adds approximately 72 million tons of recoverable coal and extends the mine life a minimum of 4 years to approximately 2031 at an annual production rate of 18 million tons. Coal mined from SCM would be sold to a customer mix depending on prevailing market conditions (SCM, 2018a).

Table 2.5-1 provides the acreages and other specific features for the Proposed Action Alternative compared to the No Action Alternative. **Figure 2.3-1** provides a graphical presentation of the Proposed Action Alternative. Features of the Proposed Action are described below. The additional coal reserves are of similar quality compared to the approved coal mining reserves. As a result, annual coal production would not change.

Figure 2.3-1. Proposed Action Alternative



2.3.1 Permit Boundary and Disturbed Area Description

The overall permit boundary would remain unchanged at 9,220 acres. The total life-of-mine disturbance within the permit boundary would increase by 977 acres from the current 6,134 acres to the proposed 7,111 acres (SCM, 2018b). The additional disturbance of 844 acres would allow expansion of Pits 1, 2 and 6 and the additional disturbance of 133 acres in an area west of Pit 4 for the construction of a temporary overburden stockpile.

The TR1 Project would increase the recoverable coal available to SCM by approximately 72 million tons by expanding coal mining blocks in Pits 1, 2, and 6. Modification of Federal Coal Lease MTM-069782 and modification of Land Use Lease MTM-74913 would allow for the additional mining and surface disturbances. Specifically, the additional 72 million tons is proportioned as follows: 45 million tons from LBM to MTM-069782 (Pit 2 east side), 15 million tons from State Coal Lease C-1088-05 (Pit 2 and Pit 6 west side), and 12 million tons from Federal Coal Lease MTM-94378 (Pit 1 and Pit 2 west side)). Additionally, Land Use Lease MTM-74913 adds 197 acres of BLM surface to be used for coal mining disturbance and pit layback on the west side of Pit 2.

2.3.2 Mine Personnel and Facilities

The Proposed Action would result in no adjustment to the number of mine personnel or facilities needed compared to the No Action Alternative (*see* Section 2.2.1) but would extend employment at SCM by approximately 4 years due to the longer mine life.

2.3.3 Water Management and Protection

The Proposed Action Alternative would require no adjustment in the annual amount of mine water needed as compared to the No Action Alternative (*see* Section 2.2.2). Mine water needs would be extended for an additional 4 years due to the longer mine life. SCM would continue to follow the plan to protect the hydrologic balance described in Section 2.2.2. There would be no changes to SCM's MPDES permit for discharging mine water and stormwater associated with mining and the related industrial activities.

2.3.4 Mining Methods

The Proposed Action would result in some minor changes to the mining sequence for Pits 1 and 2 to improve material handling, reclamation scheduling, and improve postmining topography by improving slope diversity and creating more natural looking slopes. The TR1 Project would provide for additional sage grouse habitat compared to the existing premine topography.

Except for the mining sequence, the mining methods used in the Proposed Action would be the same methods used for the No Action Alternative (*see* Section 2.2).

2.3.4.1 Soil Salvage and Overburden Salvage and Removal

The Proposed Action Alternative adds additional mining blocks to existing pits. As a result, the mining sequence in the existing pits would be extended and the active mining block would

progress into additional disturbance areas. The Proposed Action Alternative would continue the same topsoil salvage and overburden movement practices as required under the No Action Alternative.

2.3.4.2 Coal Removal

The additional 72 million tons of recoverable coal from the Proposed Action Alternative would extend the life of the mine approximately 4 years at an average annual production rate of 18 million tons. Production rates have been less than 18 million tons since 2014.

2.3.4.3 Overburden Replacement

Under the Proposed Action, an overburden stockpile would be relocated from the approved location south of the final pit in Section 36 (as seen in Figure 2.3-1) to an area to the north side of Pit 2 (and renamed OB-2-2) in Section 36 due to mining an additional 15 million tons from State Coal Lease C-1088-05. This move would require a sediment pond. The move would be needed because the currently-approved location is on State Coal Lease C-1088-05 coal leased in 1965 (CPE, 2012). Otherwise, the Proposed Action would continue the same overburden replacement practices as required under the No Action Alternative.

2.3.5 Fish and Wildlife Plan

Most of the current fish and wildlife protection and habitat reclamation tasks described in Section 2.2.6 for the No Action Alternative would occur under the Proposed Action. The HRRP tasks associated with the TR1 Project are listed in **Table 2.2-1** along with additional related projects or actions that would benefit sage grouse. SCM began implementing many of the HRRP tasks in advance of any mining disturbances for the TR1 Project and has completed or nearly completed 12 of the required 14 tasks as well as one of the two additional related actions (SCM, 2017b).

2.3.6 Air Pollution Control

Under the Proposed Action, controls on fugitive dust and other emissions would be the same as described in the No Action Alternative in Section 2.2.7. The Proposed Action Alternative lengthens the mining cuts in Pit 2 to the south east. As a result, SCC updated the air dispersion model to include mining the additional coal reserves from the Proposed Action and obtained a revised Montana Air Quality Permit # 1120-12 air permit approved on October 16, 2014.

2.3.7 Cultural and Historical Resources

Under the Proposed Action, the additional mining would disturb one site (24BH3392) that has been determined to be eligible for the National Register of Historic Places (NRHP). This site is a Prehistoric occupation site located on private land within SCM mine permit boundary. The site was found and recorded in 2006 (GCM Services, Inc, 2007). This site was recommended for NRHP eligibility because it met Criterion D of the NRHP due to its archaeological content and unique shelter remains, consisting of the recognizable remains of structures made of stacked

juniper logs surrounding central features. An approved mitigation plan for the site would be completed prior to any surface disturbance.

In addition to the avoidance measure identified in Section 2.2.7, other cultural and historic preservation measures employed by SCM would be:

- Notification of the BLM if discoveries are made during operations; and
- Update of information for archaeological sites 24BH2530, 24BH2531, 24BH3388, 24BH3396 and 24BH3401.

2.3.8 Approximate Original Contour, Soil Distribution, and Seeding

Under the Proposed Action, grading and reclamation would be conducted using the same process as described under the No Action Alternative described in Section 2.2.8.

2.3.9 Mine Closure and Reclamation Plan

Mining would be extended approximately 4 more years under the Proposed Action with the proposed TR1 alternative, extending mine life through approximately 2031.

SCM would reclaim the TR1 mined areas to a postmine landscape with steep and moderate slopes, draws and drainages, and benchland for establishing a diversity of vegetation communities. The TR1 Project revegetation plan and postmining topography would primarily provide wildlife habitat for mule deer and sage grouse. Sage grouse prefer flat to gentle slopes and the TR1-reclaimed benchland in the Pearson Creek drainage would provide additional sage grouse habitat compared to the No Action (premine) topography (CPE, 2012). **Figure 2.3-2** shows the postmine reclaimed land use and revegetation plan for the TR1 Project areas and for the entire SCM.

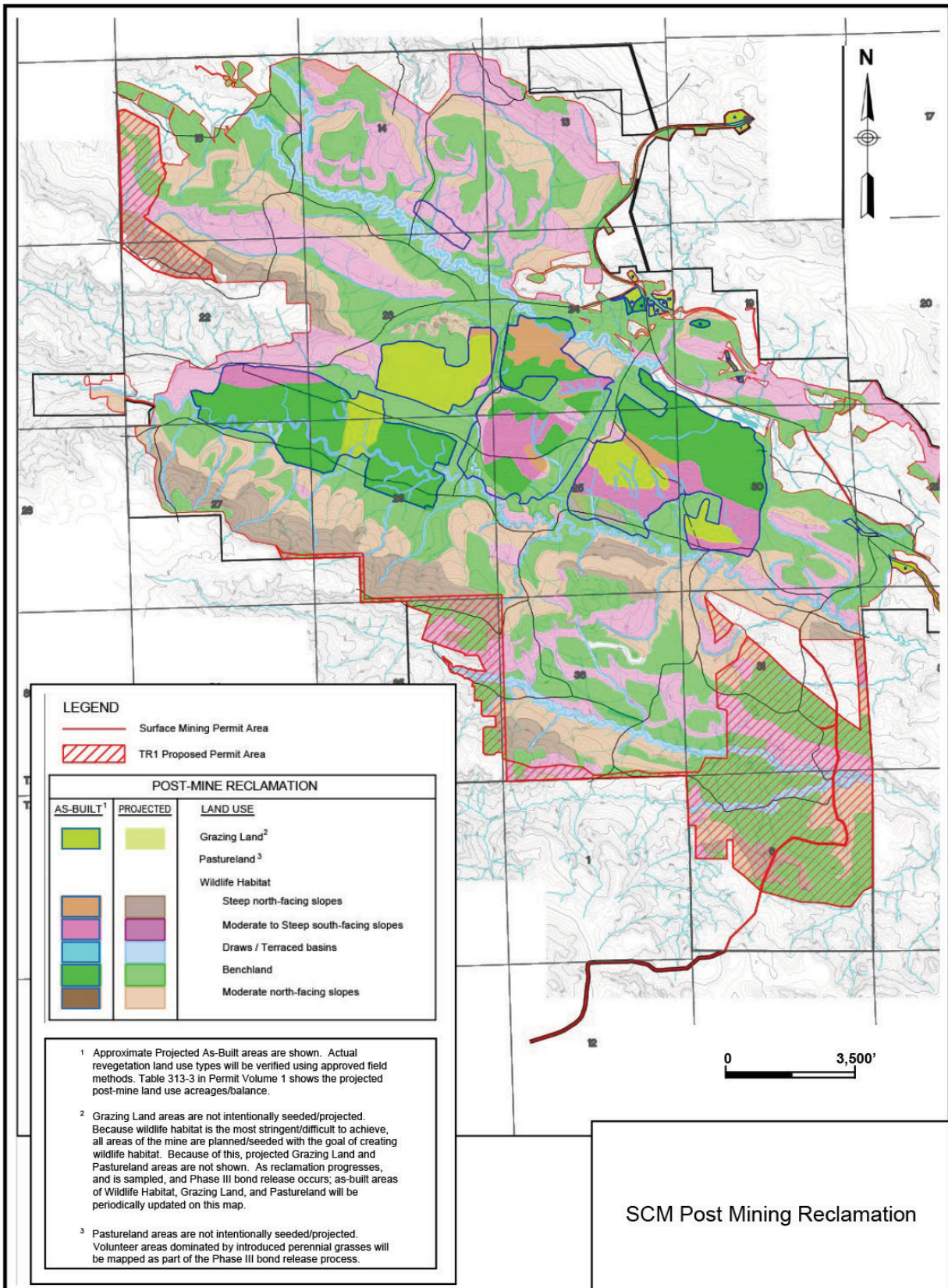
SCM would construct topographic and wildlife habitat features to promote vegetational diversity and provide wildlife habitat similar to premine or undisturbed land. Landscape features would be constructed during the regrading process and could include randomly placed areas with multiple larger shrubs, wetlands, rock piles and ledges, cliffs and steeper slopes, small depressions, and riparian areas.

The same process described in Section 2.2.9 would be used to establish a performance bond and reevaluate it annually. Before the permit revision would be issued by DEQ, SCM must file a performance bond payable to the State of Montana with surety satisfactory to DEQ in an amount to be determined by DEQ (see Section 82-4-223, MCA). A complete description of DEQ's performance bonding procedure, including bond release by reclamation phase, is provided in ARM 17.24.1101 *et seq.*

2.3.10 Environmental Monitoring

Environmental monitoring under the Proposed Action Alternative would be the same as the No Action Alternative, described in Section 2.2.10.

Figure 2.3-2. SCM Postmining Reclamation



2.3.11 Mitigation Measures for the Proposed Action

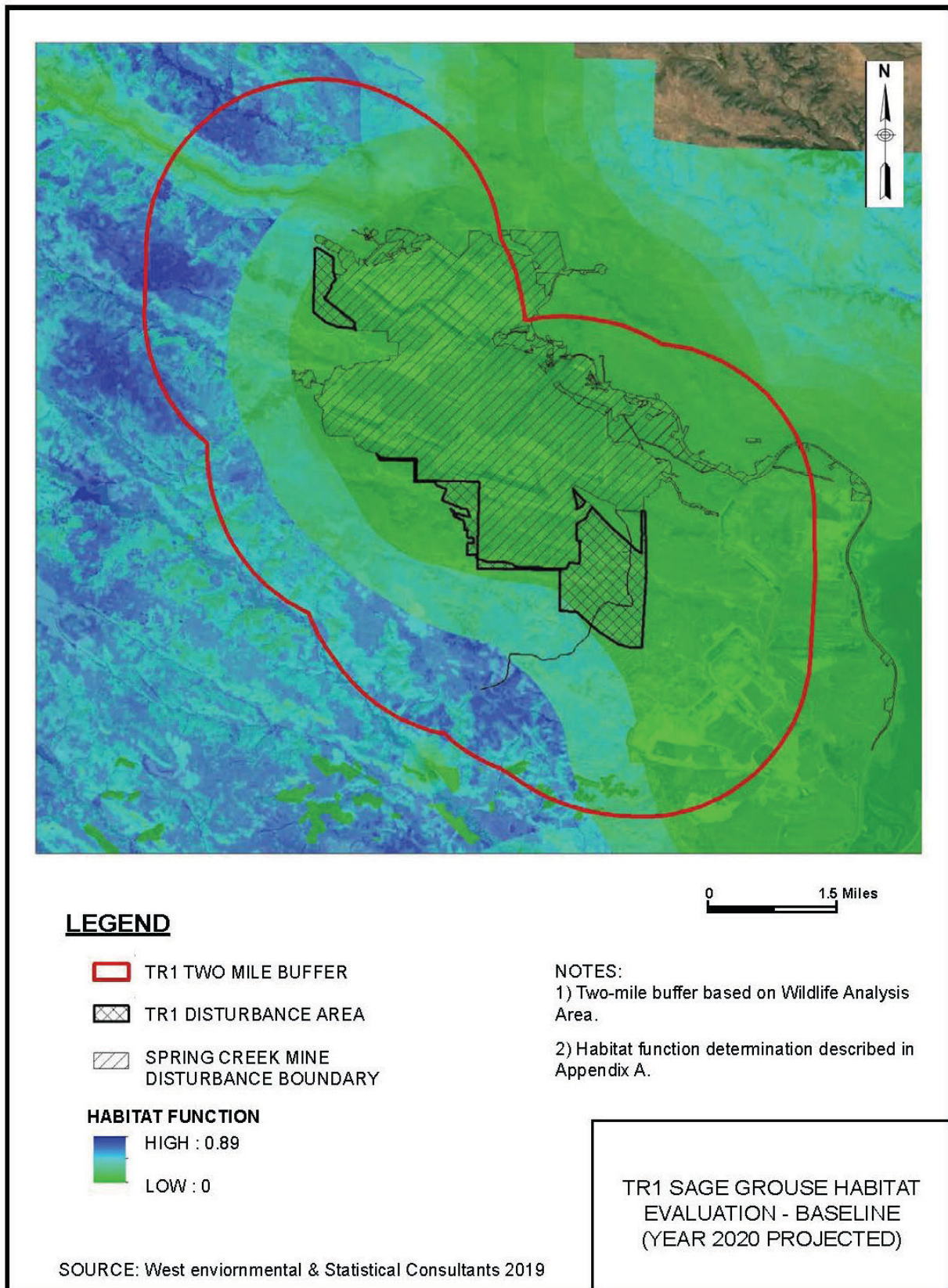
Implementing the Proposed Action would result in impacts to sage grouse habitat. In accordance with ARM 17.4.626(1), DEQ contacted other governmental agencies with special expertise in sage grouse mitigation measure to request their participation and consultation in the MEPA process. Specifically, DEQ requested the BLM (Miles City field office), FWP (Region 7), and OSMRE to review and concur with DEQ's proposed sage grouse mitigation measures for the TR1 Project and as a suitable replacement to the HRRP stipulation for SCC to provide funds to the now defunct LIP program (Coleman, 2019). DEQ developed the sage grouse measures to mitigate impacts under MSUMRA and MEPA, as well as address the need to fulfill the BLM's LIP stipulation, in consultation with the BLM, FWP, and OSMRE. DEQ sent the memo and the SCM TR1 mitigation measures to the BLM, FWP, and OSMRE on March 27, 2019 and followed by a conference call on March 28, 2019. DEQ received a letter of concurrence from the BLM and FWP on May 13, 2019. Pursuant to MSUMRA (Section 82-4- 227(2)(a) and 82-4-231(10)(j), MCA), DEQ would incorporate the sage grouse mitigation measures as conditions of approval, should DEQ grant the TR1 Project permit.

DEQ and their third-party consultants prepared a technical memorandum to quantify the amount of sage grouse habitat likely to be affected by direct and secondary impacts associated with the Proposed Action. The existing habitat (No Action Alternative) based on the projected 2020 TR1 sage grouse habitat evaluation area, including a 2-mile buffer, was approximately 28,220 acres and is shown on **Figure 2.3-3**. The Proposed Action TR1 sage grouse habitat was based on a 2034 projection. The technical memorandum "TR1 Greater Sage grouse Habitat Assessment", completed by West Environmental & Statistical Consultants (WEST), is in Appendix A. The TR1 sage grouse habitat evaluation identified additional sage grouse mitigation measures to offset the impacts from the Proposed Action. The habitat evaluation considered previously-implemented recovery and replacement measures stipulated by BLM in the HRRP, and the conservation measures implemented through the Thunder Basin Grasslands Prairie Ecosystem Association CCAA that were related to the TR1 development. The CCAA is a voluntary program to develop a conservation strategy to address loss of habitat for eight species, including sage grouse (USFWS and Cooperating Agencies, 2017).

2.3.11.1 TR1 Sage Grouse Habitat Evaluation

A landscape-scale functional acreage approach, similar to Montana's Habitat Quantification Tool (HQT), was used to quantify and compare baseline (No Action) and future (Proposed Action) sage grouse habitats to determine the need for additional sage grouse habitat enhancement measures to mitigate impacts from the TR1 Project. The functional acreage comparison evaluated expected impacts to sage grouse habitat associated with the Proposed Action. One functional acre lost would equate to one mitigation debit. The total compensatory mitigation obligation (debits minus credits) factors in the potential benefits (credits) to sage grouse habitat from SCM's commitments in the HRRP and participation in the CCAA program.

Figure 2.3-3. TR1 Sage Grouse Habitat Evaluation – Baseline, Year 2020



The average baseline (No Action) habitat functional acre score of 0.1733 was compared to the average future (Proposed Action) functional acre score of 0.1515. The Proposed Action would decrease sage grouse habitat function in the 28,220 acres and would result in a loss of 615 functional acres (see Table 3 in **Appendix A**).

Applying (1) 10 percent multiplier to ensure no net loss; (2) 20 percent multiplier to account for credits lost due to unforeseen events; and (3) 10 percent Steward Fund multiplier, the total compensatory mitigation obligations to sage grouse habitat from the Proposed Action equals 861 debits.

The Montana Sage Grouse Habitat Conservation Program (MSGHCP) policy document (Montana Mitigation Stakeholder Team, 2018b) was used to quantify the gains and losses of sage grouse habitat caused by the Proposed Action when compared to the No Action Alternative. A \$13.00 per debit value, with an annual depreciation of 3%, was used to calculate total debit costs for the TR1 project beginning in 2020 through completion in 2044, 10 years after TR1 has been reclaimed. A total of 13,019 net debits to sage grouse habitat would accumulate during the 24-year period of the Proposed Action and would result in a total compensatory mitigation cost of \$107,727 (see Table 5 in **Appendix A**). SCC would deposit the mitigation funds into the Montana Sage Grouse Oversight Team's Stewardship Fund.

2.3.11.2 Sage Grouse Compensatory Mitigation and Condition of Approval

The sage grouse compensatory mitigation would address sage grouse impacts under MSUMRA and MEPA, and address the need to fulfil the BLM's LIP stipulation. DEQ sent the TR1 Greater Sage grouse Habitat Assessment and proposed compensatory mitigation measures to the BLM, FWP, and OSMRE in March 2019. DEQ received a letter of concurrence from the BLM and FWP on May 13, 2019. If DEQ approves the TR1 major revision, SCC would be required to pay \$107,727 in compensatory mitigation into the Montana Sage Grouse Oversight Team's Stewardship Fund prior to mining. SCC will need OSMRE's approval of the federal Mine Plan to begin operations.

2.4 ALTERNATIVES NOT CARRIED FORWARD FOR DETAILED ANALYSIS

Several alternatives were either suggested in the public comments or identified as a result of DEQ's alternative screening. These alternatives were considered, but for the reasons described below, were not carried forward for detailed analysis.

To be considered for detailed analysis, a reasonable alternative must fulfill the purpose and need of the Proposed Action and meet criteria described in ARM 17.4.603 and Section 75-1-201 and -220(1), MCA:

- Evaluates different design parameters, mitigation measures, or control measures that accomplish the same objectives as those in the Proposed Action by the applicant;
- Does not include an alternative facility or an alternative to the proposed project itself;
- Is technically feasible (achievable by using current technology);

- Is economically feasible (based on similar projects having similar conditions and physical locations, regardless of the economic strength of the specific project sponsor); and
- Is environmentally beneficial (environmental impacts must be reduced compared to the Proposed Action).

2.4.1 Delay TR1 Project Until SCM Reclaims Majority of Mined Lands

Comments were submitted during the public scoping period asking DEQ to require SCC to mine existing pits (i.e. Pit 4) prior to initiating mining within the TR1 Project Area. This alternative was not analyzed in detail because it would be inconsistent with the project's stated purpose. This alternative would leave the coal reserves in TR1 Project Area until all other coal is mined out, limiting the ability of SCC to blend coal of different qualities to meet coal quality criteria for various coal customers. SCC must maintain the ability to blend coal from more than one pit to meet the specific coal quality required by various customers. This blending scenario has been approved since the SCM was first permitted in 1979.

DEQ, BLM, and OSMRE all require contemporaneous reclamation whenever it is possible. MSUMRA requires operators to commence reclamation as soon as possible in accordance with the permit's plan of operation (Section 82-4-234, MCA). Reclamation and revegetation must occur as rapidly, completely, and effectively as the most modern technology and the most advanced state of the art will allow (Section 82-4-231(1), MCA). Contemporaneous reclamation is also the fastest way for the reclamation bond to be released to SCC. Bond release requirements are detailed in ARM 17.24.1116. SCM has remained in compliance with its approved reclamation plan and has achieved Phase III reclamation bond release on 417 acres within the 5,171 acres of surface disturbance as of December 2017. SCM had reclaimed a cumulative total of 1,334 acres, or 25.8 percent of the disturbed area, as of 2017 (SCM, 2018c). The proposed revision would add mining blocks and pit length to existing pits which is not expected to substantially delay contemporaneous reclamation.

2.4.2 Additional Money for Active Reclamation

Comments were received asking DEQ to require SCC to add money to their reclamation budget to increase the amount of reclamation completed annually. This alternative was not carried forward because it assumes that SCC is lagging behind in its reclamation commitment and that additional reclamation is needed at this time.

Review of the 2018 annual report indicates that SCC is in compliance with the approved reclamation schedule. There is also limited area for additional reclamation without affecting the approved mine plan. Removal of a coal seam that is approximately 80 feet thick also requires that borrow material from areas of thick overburden be used to ensure backfilled areas approximate the approved postmine topography. Additionally, as mining has progressed at the SCM, areas available for reclamation have increased and SCC has increased the amount of reclamation completed.

2.4.3 Investments in Clean Energy

DEQ received public comments requesting that consideration of an alternative to replace coal mining with “investments in clean energy.” This alternative was not carried forward for further analysis because it does not meet the purpose of the project (Section 1.3) which is to review and make a decision on SCM’s proposed TR1 Project and to comply with MSUMRA and its implementing rules. In addition, MEPA does not allow for consideration of alternative facilities or alternative to the proposed project itself (Section 75-1-220(1), MCA).

2.4.4 No Mining on West Side During Lekking and Brood Seasons

DEQ explored an alternative in which SCM would curtail mining on the west side of the mine to limit noise and other activities during the sage grouse breeding season. Implementation of this alternative would limit mining in a significant area of SCM from March 15 through July 15. This alternative was not carried forward for further analysis because it would not conform with the existing approved mine plan. The alternative would limit the time during which reclamation activities could be conducted, including elimination of the spring seeding period. This alternative also would not allow SCM to move through the sequence of mining operations from topsoil stripping, truck and shovel prestripping, dragline, and coal removal stages without stopping for a particular season. In addition, SCM would be limited in their ability to blend coal of different qualities to meet coal quality criteria for their customers.

2.4.5 Reduce Coal Mining Rates and Numbers of Trains

Under this alternative, SCM would reduce their coal mining production rates, resulting in the need for fewer coal trains. This alternative was not carried forward for further analysis because it is inconsistent with the project’s stated purpose and would not add an environmental benefit. The alternative would increase the duration of mining and train traffic. It would also delay reclamation, potentially increasing impacts in the TR1 Project Area.

In addition, SCC is not proposing to increase the number of coal shipments. Production rates would remain the same in both the No Action and the Proposed Action.

2.4.6 Create Regional Coal Train Transportation Plan

Comments were received asking DEQ to consider an alternative requiring SCM to develop or participate in a regional coal train transportation plan to improve scheduling of coal trains to minimize impacts to traffic and to communities traversed by railroads. This alternative was not carried forward for further analysis because it would not meet the stated project purpose. The action before DEQ is to review and decide on SCC’s major revision application that is compliant with MSUMRA and its implementing rules. The impacts from rail transportation of coal are discussed in Section 3.9 (Transportation).

2.4.7 Additional Aquifer Restoration Plan for Mine Pits

Under this alternative, SCM would complete additional aquifer restoration efforts in the mined pits to improve ground water quality and quantity after mining. This alternative is based on a misconception of the ground water aquifer. The basis for this alternative is that ground water is present in underground streams instead of being transmitted through an extensive area of bedrock. This alternative would require SCC to develop “French drains” to connect the upstream portion of the underground stream to the downstream portion. This is technologically infeasible and would not result in the appropriate reclamation of the aquifer.

2.4.8 Limit New Oil and Gas Wells

Public comments request DEQ consider an alternative that would limit the development of new oil and gas wells (especially coal-bed methane wells) within a specified distance from the mine boundary. This alternative does not meet the stated project purpose. The action before DEQ is to review and decide on SCC’s major revision application to mine coal that is compliant with MSUMRA and its implementing rules. In addition, this alternative would not appreciably accomplish the same objectives or results as the Proposed Action as defined in ARM 17.4.603(2)(a)(i) and as stated in Section 2.4.

2.4.9 Mitigation Measures Suggested

In addition to the sage grouse compensatory mitigation measures described in Section 2.3.11 and presented in detail in Appendix A, scoping comments suggested other mitigation measures to add to any action alternative. Some of the mitigation measures are already required and were not studied in detail.

- Shape the top profile of the coal in the loaded train cars and combine with approved topper agents to reduce emissions of fugitive coal dust. This is the method that is currently followed to comply with ARM 17.8.308.
- Establish methods to mitigate dust. A separate mitigation measure for dust control was not considered because the mine already actively controls fugitive dust during activities (see Section 2.2.7) in accordance with ARM 17.24.31, ARM 17.8.304 and ARM 17.8.308. SCM currently incorporates BMPs to mitigate dust under their air quality permit. SCM would continue to use existing BMPs and include new practices as they become available.

2.5 SUMMARY COMPARISON OF ALTERNATIVES

Table 2.5-1 provides a comparison of the main SCM features under the No Action and the Proposed Action. The impacts most likely to occur, or that potentially affect some aspect of the human environment in a substantial way, are compared for each alternative in **Table 2.5-2**. A full discussion of all potential impacts is contained in Chapters 3 and 4 in the resource-specific subsections.

**Table 2.5-1
Comparison of Alternative Features**

Feature	No Action	Proposed Action (with Mitigations)
Surface Mine Permit Boundary	9,220 acres	Same as No Action
Life of Mine Disturbance Area	6,134 acres	7,111 acres (an additional 977 acres) Breakdown for TR1 Project: <ul style="list-style-type: none"> • 844 acres for expansion of Pits 1, 2 and 6 • 133 acres for constructing temporary overburden stockpile west of Pit 4
Surface Disturbance in Sage grouse Core Area	1,395 acres	Approximately 642 additional acres in the TR1 would be disturbed for a total of 2,037 acres within SCM Permit Boundary. Mining would result in a loss of 615 functional acres of sage grouse habitat. <i>(Sage grouse compensatory mitigation of \$107,727 would be paid for loss of 615 functional acres.)</i>
Recoverable Coal	117.8 million tons	189.9 million tons (an additional 72.1 million tons)
Life of Mine	Mining continues to 2027 followed by reclamation	Mining continues from 2027 through 2031, followed by reclamation
Mine Closure & Reclamation	Reclamation methods per SCM's approved Reclamation Plan; postmining land used for livestock grazing, wildlife habitat, and pastureland	Similar to No Action but post mining topography changes to provide additional bench areas more suitable for sage grouse. SCM will commit to implementing the HRRP and will participate in the CCAA program. <i>(SCM would pay sage grouse compensatory mitigation amount of \$107,727 for loss of 615 functional acres of sage grouse habitat.)</i>

**Table 2.5-2
Comparison of Effects by Alternative and Resource**

Resource/ Issue	No Action	Proposed Action (with Mitigations)
Air Quality	Excellent air quality with limited local sources of pollutants and consistent wind dispersion. SCM to continue to control fugitive dust per SCM's Montana Air Quality Permit (MAQP) #1120-12.	Air quality would continue to be excellent. An estimated annual emission of PM ₁₀ of 668.53 tons per year over the additional 4 years if mine life. Fugitive dust would continue to be controlled per SCM's MAQP #1120-12
Land Use	SCM would not expand mining to the TR1 area and approved land use would remain unchanged. The 977 acres of grazing land would not be disturbed.	Surface disturbance for the additional 977 acres would be reclaimed to 748 acres of wildlife habitat and 229 acres of Grazing Land.
Noise	SCM would not expand mining to the TR1 area and existing noise	Expanded mining in Pits 1, 2, and 6 would result in short-term noise impacts at 3 sage grouse leks. The

**Table 2.5-2
Comparison of Effects by Alternative and Resource**

Resource/ Issue	No Action	Proposed Action (with Mitigations)
	levels are estimated to be approximately L ₉₀ 15 dBA and L ₅₀ 20 dBA, which are typical for sparsely populated, rural locations, with man-made noise sources intermittently higher. The predicted L ₅₀ noise levels would exceed ambient noise by more than +10 L ₅₀ dBA during pre-strip operations at 3 of the nearest leks.	L ₅₀ noise levels are predicted to exceed the ambient noise by more than +10 L ₅₀ dBA at the Pasture lek during topsoil salvage in 2029, when the equipment is closest to the lek.
Socioeconomics	SCM would maintain current level of 281 employees for about 5 years (at 13 to 14 million tons per year); would increase to 340 employees with increase to 18 million tons per year. Total annual taxes and royalties paid to Montana to remain at approximately \$42 million.	Maintain approximately 281 to 340 employees and income for an additional 4 to 7 years. Total taxes and royalties of \$42 to \$59.5 million would continue to be paid to Montana over 4 to 7 more years.
Soils	SCM would not expand mining to the TR1 area and there would be no impacts to soils on the 977 acres.	An additional 977 acres would be disturbed with long-term and moderate impacts to soil physical properties, loss of soil structure, soil compaction, and potential soil erosion. Soil productivity would return to previous levels within 10 years after reclamation.
Transportation	SCM would continue to ship coal by rail, with an incidental amount by truck hauling, until all recoverable coal is mined in approximately 2027. An annual average daily traffic (AADT) count on Highway 314 would continue at about 176.	Continue to ship coal for about 4 more years using the same methods and daily traffic counts.
Vegetation and Reclamation	SCM would not expand mining to the TR1 area and there would be no impacts to vegetation on the 977 acres.	The TR1 area supports sagebrush, grassland (including cheatgrass), greasewood, and limited stands of juniper in the draws and steeper slopes. Mining disturbances could result in additional weed infestations that would require monitoring and treatment. Much of reclamation is at the end of mining and additional areas would be left unreclaimed for longer periods. (SCM would pay sage grouse compensatory mitigation amount of \$107,727 for loss of 615 functional acres of sage grouse habitat.)

**Table 2.5-2
Comparison of Effects by Alternative and Resource**

Resource/ Issue	No Action	Proposed Action (with Mitigations)
Water	Mining would continue in the current permit area but not expand into the TR1 area. Existing impacts include reductions in the surface flow in Pearson Creek and reductions in the flow of the AD aquifer to the Tongue River Reservoir. Impacts to ground water would taper off over the remaining life of mine.	Most of the TR1 expands mining within the South Fork Spring Creek and Pearson Creek Drainage areas as shown in Figure 3.11-1. The TR1 revision would also reduce surface flow within the South Fork Pearson Creek ephemeral stream channel. The Proposed Action is modeled to discharge at approximately 157 gallons per minute to the Tongue River Reservoir from mining the A-D aquifer. As a result, the Proposed Action Alternative is projected to reduce ground water flow by an additional 28 gallons per minute or 45 acre-feet per year. Impacts would continue until TR1 Project Area is reconnected with Pearson Creek and the Tongue River Reservoir.
Wildlife	Wildlife habitat consists of sagebrush-steppe, upland grassland, bottomland, reclaimed grasslands, and agriculture fields. Impacts general to all wildlife species include mortality, disturbance, and habitat loss and would primarily be from road kill, collisions with powerlines and fences, and trapping in pits. These impacts would continue through the life of the mine but would be minimized through reclamation and continued adherence to existing plans that are part of the SCM permit. Additional voluntary conservation measures (CCAA, SOSI) would also help minimize impacts to wildlife, including sage grouse.	SCM has completed or nearly completed 12 of 14 HRRP requirements in advance of the TR1 Project. SCM also voluntarily participates in the CCAA related to TR1 to help minimize impacts to sage grouse and other anthropogenic activities in the area. SCM also submitted the SOSI Plan to provide broad, long-term direction for management of wildlife species of special interest that occur in the SCM wildlife monitoring area. Impacts general to all wildlife species as described for the No Action would also apply. (SCM would pay sage grouse compensatory mitigation amount of \$107,727 for loss of 615 functional acres of sage grouse habitat.)
Cultural Resources	There would be no additional ground disturbance with the potential to disturb cultural sites. Sites in the TR1 Project Area will continue to degrade naturally.	TR1 would adversely affect one site that has been determined to be eligible for the NRHP. The approved mitigation plan for the one site would be completed prior to disturbance.

2.6 AGENCY PREFERRED ALTERNATIVE

The rules and regulations implementing MEPA require agencies to indicate a Preferred Alternative in the final EIS, if one has been identified. DEQ has identified the Proposed Action Alternative with mitigation measures as the Preferred Alternative for the reasons discussed below as required by ARM 17.4.617(9).

2.6.1 Rationale for the Preferred Alternative

2.6.1.1 Sage Grouse Mitigation

The sage grouse compensatory mitigation is part of the Preferred Alternative to help minimize project impacts to sage grouse from the TR1 Project. During the required MEPA consultation process, DEQ contacted governmental agencies with special expertise in sage grouse mitigation. DEQ requested the BLM (Miles City Field Office), FWP (Region 7), and OSMRE to review and concur with DEQ's proposed sage grouse mitigation measures for the TR1 Project. This mitigation requirement would also fulfill the condition in the HRRP for SCC to provide funds to the now defunct LIP program. DEQ would incorporate the sage grouse mitigation measures as conditions of approval, should DEQ grant the TR1 Project permit.

Through the environmental analysis, DEQ determined that opportunities for effective, on-site sage grouse habitat mitigations were limited. Previous disturbances and the cumulative impacts of TR1 and potential future projects would impact sage grouse habitat in the area. Therefore, a plan to complete compensatory mitigation off-site was pursued. A landscape-scale functional acreage approach was used to quantify and compare baseline (No Action) to the Proposed Action and estimate the compensatory amount for off-site sage grouse habitat mitigation. If approved, SCM would be required to pay a sage grouse compensatory mitigation amount of \$107,727 for the loss of 615 functional acres of sage grouse habitat to the Montana Sage Grouse Oversight Team's (MSGOT) Stewardship Fund. In the BLM and FWP letter of concurrence, they requested that attempts be made for funds to first be used in the southeast service area or within the Miles City Field Office Area (Lepisto, 2019).

The Preferred Alternative would include best practices to reduce noise impacts to wildlife, particularly for the predicted topsoil salvage noise level at the Pasture lek. The best practices are listed in the revised SCM Fish and Wildlife Plan (ARM 17.24.312) in the TR1 Project Application (SCM, 2017b) and include:

- Minimize surface disturbance activities to the extent practicable (e.g., soil salvage, road construction, grubbing, logging, exploratory drilling, etc.) during the primary breeding season for most species in the region (i.e., April 1 through July 31);
- Honor sage grouse lek buffers to the extent practicable and schedule disturbance activities near active leks to occur outside the breeding season; and

- Monitor all environmental variables, including vegetation, soils, wildlife (terrestrial and aquatic, as warranted), water and air quality/meteorology, to proactively mitigate mine related impacts.

DEQ has determined all aspects of the Preferred Alternative are reasonable, achievable under current technology, and economically feasible (Section 75-1-201(1)(b)(iv)(C)(I), MCA). DEQ has consulted with SCM regarding all aspects of the Preferred Alternative, has given due weight and consideration to SCM's comments to date regarding the Preferred Alternative, and will do so going forward in connection with the formulation of the final EIS (Section 75-1-201(1)(b)(iv)(C)(II), MCA).

CHAPTER 3

AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This chapter describes the existing conditions of relevant resources that could reasonably be impacted by implementation of the alternatives described in Chapter 2 as they relate to the TR1 application at the SCM. After the affected environment of each resource has been described, the potential direct and secondary impacts and unavoidable, irreversible, and irretrievable impacts of the No Action and Proposed Action are discussed.

3.1 INTRODUCTION

This chapter provides a baseline of current environmental conditions in the TR1 Project Area from which to analyze and compare the effects of the Proposed Action and alternative(s) (ARM 17.4.617(3)). The impact analysis is developed around the issues identified in scoping (public and internal) and is based on a thorough review of relevant scientific information, an evaluation of proposed and industry practices, a review of regulatory requirements, and a compilation of results from on-site surveys and studies. For the purpose of this analysis, the TR1 Project Area is considered the existing SCM permit boundary and surrounding study areas. Each resource area discussion includes information on the data reviewed, how each data source was collected, and the geographic limits of the analysis area. Data analyses are presented commensurate with the importance of each respective impact (ARM 17.4.617(3)). Analysis areas vary by resource based on the potential for impacts and are defined at the beginning of each resource section.

3.2 RESOURCES AREAS CONSIDERED BUT NOT STUDIED IN DETAIL

DEQ reviewed issues and resource areas and eliminated several resource areas from detailed analysis because, based on the issues, the resource areas were (1) determined to have no impacts or minimal impacts or (2) the analysis suggested the impacts were outside the scope of this EIS.

Under MEPA, the Montana DEQ's detailed analysis of impacts on resource areas is limited to actions which significantly affect the quality of the human environment in Montana (Section 75-1-201(1)(b)(iv), MCA). MEPA also requires the impacts analysis be confined to the area within Montana's borders and not include impacts that are regional, national, or global in nature unless the environmental review is conducted by the Department of Fish, Wildlife and Parks for the management of wildlife and fish or a review beyond Montana's borders is required by law, rule, regulation, or federal agency (Section 75-1-201(2), MCA). Impacts on climate and climate change from the TR1 Project action would be regional or global in nature, would extend beyond Montana's borders, and would not meet the exceptions described above.

Table 3.2-1 provides rationale for resources that were considered but not analyzed in detail.

**Table 3.2-1
Resource Areas Eliminated from Detailed Analysis**

Resource Area	Determination	Rationale
Climate Change	Outside Scope, outside Montana's border, and regional, national, and global in nature	Per MEPA statute Section 75.1.201(2)(a), MCA.
Fish	Not present on-site; present downstream, but no impact	There are no perennial or intermittent streams or natural lakes/ponds in the permit area to support fish. Man-made impoundments are present but do not contain fish. Fish downstream in Tongue River and Tongue Reservoir are protected through MPDES requirements for surface water discharge of pollutants.
Health and Safety	Negligible impacts	Related concerns are addressed in air quality, water quality and transportation.
Paleontology	No impact	Dismissed pursuant with Section 22-3-435, MCA 2017.
Recreation	Negligible impacts	SCM manages public access to their mine permit area. Adjacent properties are privately owned and used for ranching.
Endangered Species Act (ESA) Listings	Not present	Black-footed ferrets are the only ESA-listed species in Big Horn County. No sign of black-footed ferrets has ever been documented in surveys conducted at SCM; the analysis area is not in black-footed ferret reintroduction areas and habitat to support a black-footed ferret (USFWS, 1989) is not present. No other threatened or endangered wildlife species have been found in baseline or annual wildlife surveys.
Visual Quality	Negligible impacts	Related concerns are addressed in air quality and transportation.
Wastes (hazardous or solid)	Negligible impacts	Wastes generated from mining operations in the TR1 Project Area would be collected, stored, and managed in other permit areas of the SCM. Hazardous wastes include greases, lubricants, paints, flammable liquids, solvents, and any other material as defined (40 CFR 261.3) and are permitted and managed through the DEQ Hazardous Materials Section.
Wetlands and Waters of the US	Not present	SCM completed wetlands and Waters of the US inventory and no jurisdictional wetlands or waters were observed.

3.3 RESOURCE AREAS ANALYZED IN DETAIL

Impacts were analyzed in detail for air quality, land use, noise, socioeconomics, soils, transportation, vegetation and reclamation, water, wildlife, and cultural resources. Each resource includes an analysis area shown on **Figure 3.3-1** and **Figure 3.3-2**.

The impact analysis will identify and estimate if the impacts are direct or secondary impacts. Direct impacts occur at the same time and place as the action that causes the impact.

Figure 3.3-1. Air, Noise, and Other Resources Analysis Areas

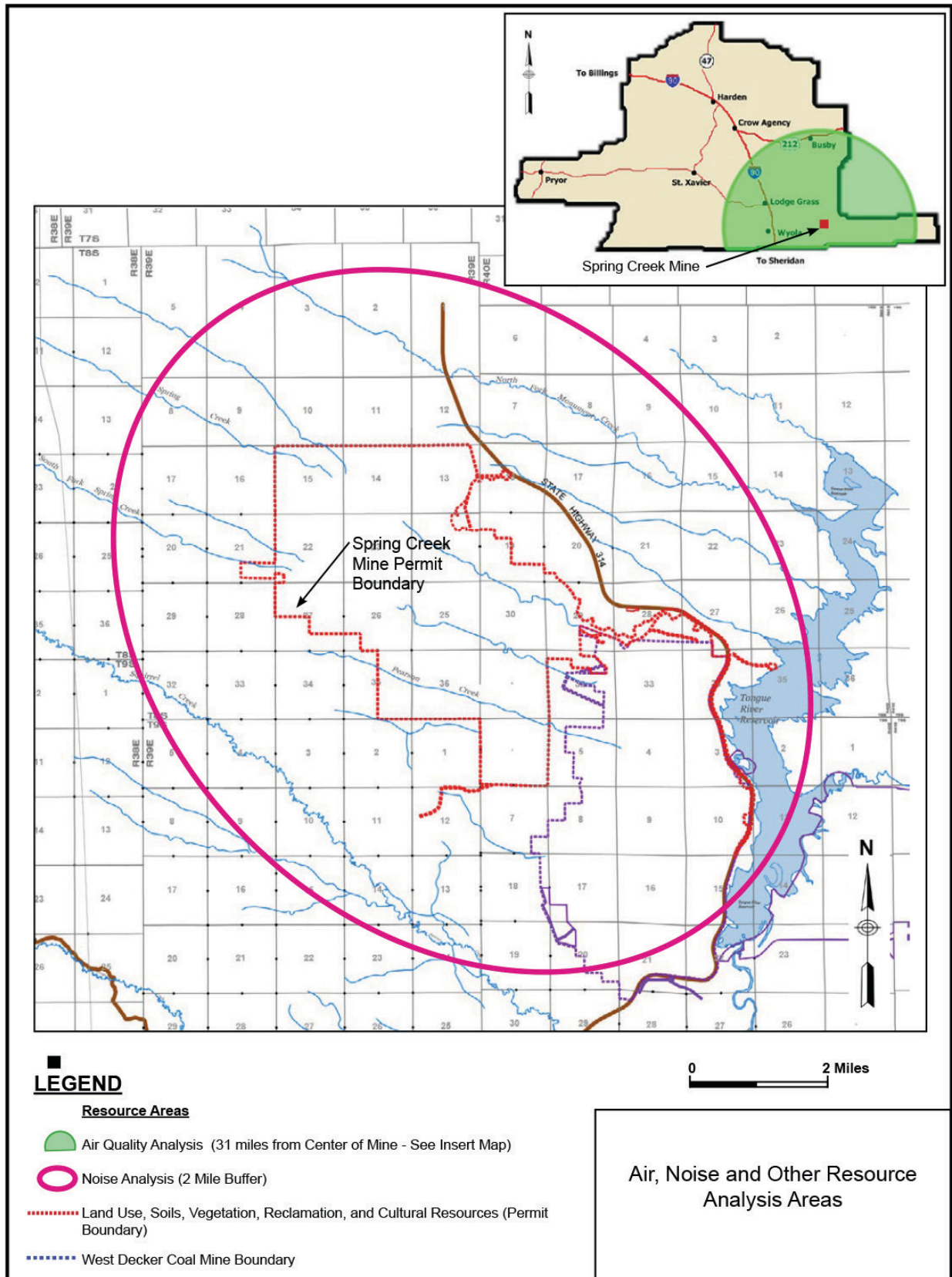
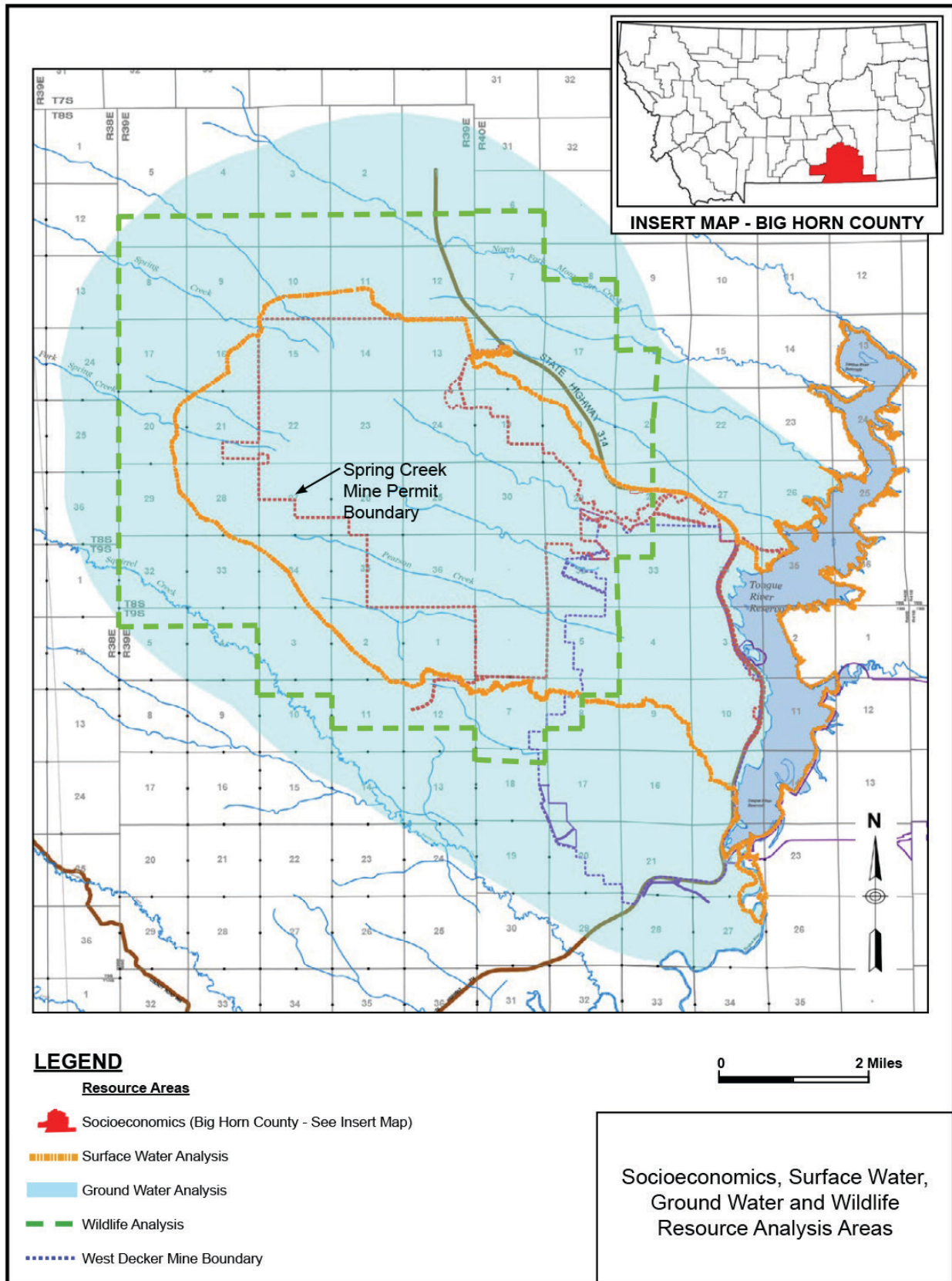


Figure 3.3-2. Socioeconomics, Surface Water, Ground Water, and Wildlife Analysis Areas



Secondary impacts are a further impact to the human environment that may be stimulated or induced by or otherwise result from a direct impact of the action (ARM 17.4.603(18)).

Where impacts would occur, the impacts analysis will also estimate the duration and intensity of the impact. The duration is quantified as follows:

- Short-term: Short-term impacts are defined as those impacts that would not last longer than the life of the project, including final reclamation.
- Long-term: Long-term impacts are impacts that would remain or occur following project completion.

The intensity of the impacts is measured using the following:

- No impact: There would be no change from current conditions.
- Negligible: An adverse or beneficial effect would occur but would be at the lowest levels of detection.
- Minor: The effect would be noticeable but would be relatively small and would not affect the function or integrity of the resource.
- Moderate: The effect would be easily identifiable and would change the function or integrity of the resource.
- Major: The effect would alter the resource qualities and diminish or improve the overall function and integrity of the resource.

3.4 AIR QUALITY

This section discusses air quality resource issues, the analysis area, the affected environment, and direct and secondary impacts associated with the No Action and Proposed Action Alternatives.

3.4.1 Analysis Area

The air analysis area includes the TR1 Project Area plus a 31-mile buffer, but all within the state of Montana as shown in **Figure 3.3-1**. A component and primary indicator for air quality is the amount of particulate matter with an aerodynamic diameter of 10 microns or less in size (PM₁₀) generated by mine construction activities and road traffic. Common sources for particulate matter in the SCM area are carbon black soot, smoke, and fugitive dust from unpaved roads and construction sites (DEQ, 2016a). Particulate matter will be transient and primarily deposited within a half mile of the fugitive source locations that generate particulates. Primary gaseous pollutants such as nitrogen dioxide (NO₂) may travel farther from their sources. Atmospheric chemistry may cause the formation of secondary gaseous pollutants from the primary pollutants.

The EPA regulates emissions for on-road and non-road vehicles and engines by regulating fuel and sets emission standards on the amount of pollution a vehicle or engine can emit. This ensures that the vehicles meet federal average fuel economy standards (EPA, 2018); therefore,

engine emissions related to on-road and off-road vehicles are expected to meet regulations and were not addressed in this evaluation.

3.4.2 Issues and Analysis Methods

Public comments related to air quality and those generated from internal discussions are stated below and followed by a brief description of the method for analyzing the issue and potential impacts. Issues identified for analysis include the following:

- How much nitrogen oxide air pollution would occur from blasting and for how long? The increase in nitrogen oxide air pollution was analyzed by estimating emissions using AP-42 Chapter 15 (EPA, 1996; EPA, 1998; EPA, 2006a; EPA, 2006b; EPA, 2009). The duration of the pollution is a minimum of 4 years, as described in Section 2.3.
- How much will particulate matter emissions increase from coal dust and from diesel-fired coal-mining equipment and for how long? The increase in particulate matter and diesel emissions from coal mining and mining equipment were estimated using AP-42 Chapter 11 (EPA, 1998). The duration of the pollution is a minimum of 4 years, as described in Section 2.3.
- How much particulate matter and nitrogen compounds would be emitted from coal dust particles and diesel emissions from railroad engines and trucks? Particulate matter and other vehicle emissions from vehicle travel were estimated using AP-42 Chapter 13 (EPA, 2006c).
- How much particulate matter would be generated from blowing dust, dirt, and debris during construction and for how long? Particulate emissions from construction were estimated using AP-42 Chapter 13 (EPA 2006c). The duration of the pollution is a minimum of 4 years, as described in Section 2.3.
- How much would particulate matter increase from wind erosion of disturbed areas during operations and for how long? Particulate emissions from wind erosion was estimated using AP-42 (EPA, 2009). The duration of the pollution is a minimum of 4 years, as described in Section 2.3.
- Would the emissions be within permit limits and would ambient air quality standards be met? Emissions and pollutions controls were compared to regulatory and permit requirements.

3.4.3 Affected Environment

This section describes the topography, climate and meteorology, regulatory environment, and existing air quality.

3.4.3.1 Regulatory Environment

The Proposed Action must demonstrate compliance with all applicable state and federal air quality standards. The CAA requires EPA to set NAAQS for six harmful pollutants to protect public health and the environment: carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO₂), ground-level ozone, (O₃), particulate matter with an aerodynamic diameter of 10 microns or less (PM₁₀), fine PM with an aerodynamic diameter of 2.5 microns or less (PM_{2.5}), and sulfur

dioxide (SO₂). EPA has delegated authority to administer and enforce the rules under the CAA in the state of Montana. DEQ has established air quality regulations under the ARM, Title 17, Chapter 8, Subchapters 1 through 17. In addition to the NAAQS (**Table 3.4-1**), Montana has adopted state air quality standards known as MAAQS for the same pollutants (ARM 17.8.101, *et seq.*). The applicable NAAQS and MAAQS are provided in DEQ's air quality standards (DEQ, 2016b) and EPA Guidelines (EPA, 2015).

To determine compliance and assess progress against the NAAQS, the EPA uses a criteria air pollutant-specific statistic referred to as a design value, which describes the air quality status compared to the NAAQS. The design value of each criteria air pollutant at a given location is calculated using ambient monitoring data following the form of the respective NAAQS. The calculated design values are then used to officially designate the areas as "attainment" (demonstrates compliance with NAAQS), "nonattainment" (exceeds the NAAQS), "maintenance" (in the process of re-designating to attainment by continuing to show compliance with the NAAQS after having initially been in nonattainment), or "unclassifiable" (insufficient data for compliance determination). Once a nonattainment designation occurs, state and local air agencies must develop a federally enforceable State Implementation Plan to outline the control measures and strategies that will be used to attain and maintain compliance with the NAAQS (40 CFR Part 51). States are required to demonstrate that the plans adequately provide for timely attainment and maintenance of the NAAQS. In addition, states are encouraged to investigate alternative strategies and assess the cost and benefit of each in respect to achieving and maintaining attainment.

The New Source Review program of the CAA requires a preconstruction permit that outlines air emission limits and required operating procedures for any new or modified source for which the construction or modification would result in a level of net emissions increase of regulated pollutants that is of concern. The New Source Review program applies to sources in both nonattainment and attainment areas through the Nonattainment New Source Review program and the Prevention of Significant Deterioration program, respectively (EPA, 2006c). There are several Prevention of Significant Deterioration classifications which allow differing levels of development. This acceptable growth is estimated using dispersion modeling techniques to quantify effects of current and potential pollutant sources on the surrounding airsheds. Class I areas indicate the highest level of protection while Class II may receive a greater amount of man-made pollution than Class I areas and can accommodate normal and well-managed industrial growth (DEQ 2016). SCM is not a PSD source, since the potential to emit does not meet the minimum amount of 250 tons of the criteria pollutants per year.

**Table 3.4-1
National Ambient Air Quality Standards**

Pollutant		Primary/ Secondary	Averaging Time	Level	Form
Carbon Monoxide (CO)		primary	8 hours	9 parts per million (ppm)	Not to be exceeded more than once per year
			1 hour	35 ppm	
Lead (Pb)		primary and secondary	Rolling 3- month average	0.15 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$)(1)	Not to be exceeded
Nitrogen Dioxide (NO ₂)		primary	1 hour	100 ppb	98th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		primary and secondary	1 year	53 ppb (2)	Annual Mean
Ozone (O ₃)		primary and secondary	8 hours	0.070 ppm (3)	Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years
Particle Pollution (PM)	PM _{2.5}	primary	1 year	12.0 $\mu\text{g}/\text{m}^3$	annual mean, averaged over 3 years
		secondary	1 year	15.0 $\mu\text{g}/\text{m}^3$	annual mean, averaged over 3 years
		primary and secondary	24 hours	35 $\mu\text{g}/\text{m}^3$	98th percentile, averaged over 3 years
	PM ₁₀	primary and secondary	24 hours	150 $\mu\text{g}/\text{m}^3$	Not to be exceeded more than once per year on average over 3 years
Sulfur Dioxide (SO ₂)		primary	1 hour	75 ppb ⁽⁴⁾	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		secondary	3 hours	0.5 ppm	Not to be exceeded more than once per year

Source: (EPA, 2015)

- (1) In areas designated nonattainment for the Pb standards prior to the promulgation of the current (2008) standards, and for which implementation plans to attain or maintain the current (2008) standards have not been submitted and approved, the previous standards (1.5 $\mu\text{g}/\text{m}^3$ as a calendar quarter average) also remain in effect.
- (2) The level of the annual NO₂ standard is 0.053 ppm. It is shown here in terms of ppb for the purposes of clearer comparison to the 1-hour standard level.
- (3) Final rule signed October 1, 2015, and effective December 28, 2015. The previous (2008) O₃ standards additionally remain in effect in some areas. Revocation of the previous (2008) O₃ standards and transitioning to the current (2015) standards will be addressed in the implementation rule for the current standards.
- (4) The previous SO₂ standards (0.14 ppm 24-hour and 0.03 ppm annual) will additionally remain in effect in certain areas:
 - (1) any area for which it is not yet 1 year since the effective date of designation under the current (2010) standards, and
 - (2) any area for which an implementation plan providing for attainment of the current (2010) standard has not been submitted and approved and which is designated nonattainment under the previous SO₂ standards or is not meeting the requirements of a State Implementation Plan call under the previous SO₂ standards (40 CFR 50.4(3)). A State Implementation Plan call is an EPA action requiring a state to resubmit all or part of its State Implementation Plan to demonstrate attainment of the required NAAQS.

Environmental protection performance standards within the Montana Settleable PM standard was designed for much larger particles than those covered under the federal NAAQS for PM₁₀ and PM_{2.5}. Montana uses measures through permitting and enforcement that serve to provide reasonable precautions against excess PM generation. These include but are not limited to the following requirements under ARM 17.8.308:

- No person shall cause or authorize the production, handling, transportation, or storage of any material unless reasonable precautions to control emissions of airborne particulate matter are taken. Such emissions of airborne particulate matter from any stationary source shall not exhibit an opacity of 20 percent or greater averaged over six consecutive minutes, except for emission of airborne particulate matter originating from any transfer ladle or operation engaged in the transfer of molten metal which was installed or operating prior to November 23, 1968.
- No person shall cause or authorize the use of any street, road, or parking lot without taking reasonable precautions to control emissions of airborne particulate matter.

In addition, when Montana PM, PM₁₀, and PM_{2.5} sources trigger permitting, they must go through a best available control technology analysis and controls that, while reducing PM₁₀ and PM_{2.5}, would also provide total PM reductions.

Requirements include stabilization of soils from wind erosion which helps to control fugitive particulate emissions from mining activities as outlined in ARM 17.24.702(2).

The New Source Performance Standards are technology-based emission limits that apply to specific categories of new or significantly modified stationary sources (40 CFR Part 60). The applicable New Source Performance Standards at Spring Creek Mine follow 40 CFR Part 60, Subpart Y: Standards of Performance for Coal Preparation and Processing Plants and 40 CFR Part 60 Subpart IIII: Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (CI ICE). 40 CFR Part 60, Subpart Y applies to facilities in coal preparation and processing plants that process more than 181 megagrams (200 tons) of coal per day. The affected facilities include thermal dryers, pneumatic coal-cleaning equipment (air tables), coal processing and conveying equipment (including breakers and crushers), and coal storage systems, transfer and loading systems that commenced construction, reconstruction or modification after October 27, 1974, and on or before April 28, 2008. An owner or operator shall not cause to be discharged into the atmosphere system emissions which exhibit 20 percent opacity or greater due to dust from any coal processing and conveying equipment, coal storage system, or coal transfer and loading. 40 CFR Part 60 Subpart IIII applies to stationary CI ICE that commence construction after July 11, 2005, where the stationary CI ICE are manufactured after April 1, 2006, and are not fire pump engines, and owners and operators of stationary CI ICE that modify or reconstruct their stationary CI ICE after July 11, 2005, are subject to this subpart. An ICE is considered stationary if it remains at the permitted location for more than 12 months (or a shorter period for an engine located at a seasonal source).

Mining the additional coal reserves in the Proposed Action was approved with the modification of MAQP #1120-11. The revised MAQP 1120-12 was approved on October 16, 2014 and is subject to air quality regulations therein.

3.4.3.2 Topography

Topographic maps of the SCM area indicate the overall surface water drainage is southeast toward the Tongue River. Valleys and drainages in the area can affect climate and influence wind direction and dispersion of pollutants. Specifically, valleys in and adjacent to the SCM have potential to build up higher cumulative concentrations of industrial and transportation-related emissions because of up-valley daytime winds and down-valley nighttime winds. These winds can dominate local wind direction over regional prevailing winds.

3.4.3.3 Climate and Meteorology

Climate in the SCM area is generally characterized as semi-arid, or a region where the potential evapotranspiration exceeds the precipitation, but not by an extreme margin (Peel, et al., 2007).

The nearest location for recorded long-term climate data was the Sheridan Field Station, Wyoming (Station ID 488160) for the period of record of 1971 to 2000. The station is approximately 11 miles directly south of the SCM. Average annual maximum and minimum temperatures ranged from 58.9 to 29.8 degrees Fahrenheit (°F), respectively. The highest temperature was seen in July 2002 at 109 °F with highest temperatures occurring in mid to late summer. The lowest temperature was noted in December 1989 at -44 °F with lowest temperatures occurring December through early March.

For the period of record of 1920 to 2006, average annual precipitation and total snowfall were reported to be 15.04 inches and 43.4 inches, respectively. The heaviest precipitation was reported between April and June with heaviest snowfall occurring in January (Western Regional Climate Center, 2017).

Wind data tabulated from 2014 indicates that prevailing winds are from the north-northwest with maximum winds greater than 25.5 miles per hour. The nearest recording station outside of the SCM station was Sheridan, Wyoming. The Western Regional Climate Center reported the annual average wind speed for 1996 to 2006 was 7.1 miles per hour (Western Regional Climate Center, 2017).

3.4.3.4 Existing Air Quality

Air quality within the analysis area is excellent with limited local sources of pollutants and consistent wind dispersion. All areas within and adjacent to the TR1 Project Area are currently considered in attainment/unclassifiable for all NAAQS/MAAQs pollutants. SCM monitored PM₁₀ as an air permit requirement from initial mine development through 2009 and confirmed the ambient air quality throughout the monitoring period was at or near background levels and below the standards for PM₁₀ (DEQ, 2014). SCM continues to voluntarily monitor PM₁₀ at the

mine with the air monitoring stations. Annual PM₁₀ concentrations in micrograms per cubic centimeter of air ($\mu\text{g}/\text{m}^3$) at two locations for 2011 through 2018 are shown in **Table 3.4-2**.

Table 3.4-2
PM10 Emissions Monitoring 2011 through 2018 (annual mean $\mu\text{g}/\text{cubic meter}$)

Site	2011	2012	2013	2014	2015	2016	2017	2018
A	22.6	26.2	20.7	26.9	26.6	14.1	24.2	25.1
B	23.3	26.4	19.7	26.9	27.3	13.6	24.2	26.2

The airshed around SCM is classified as Class II Prevention of Significant Deterioration area. The Northern Cheyenne Reservation is a non-federal Class I airshed (DEQ, 2018a). The reservation is located approximately 20 miles north of the SCM. Based on prevailing wind from the north-northwest, the reservation is upwind of the SCM.

Montana has 14 official nonattainment areas or areas not meeting the MAAQS (DEQ, 2018b). Of those areas, the nearest is Lame Deer, which is located 40 miles north of the SCM and is a federal nonattainment area for PM₁₀. The SCM area is located outside of the nonattainment boundary. Based on prevailing wind from the north-northwest, the SCM is downwind of the nonattainment area. Two other nonattainment areas are more than 90 miles to the northwest in Billings (carbon monoxide) and Laurel (sulfur dioxide). Each area is located upwind of the SCM and neither of the pollutants are associated with particulate matter or NO_x.

3.4.4 Direct and Secondary Impacts

3.4.4.1 No Action Alternative

Fugitive dust is controlled per SCM's MAQP #1120-12 (DEQ, 2014) and would continue to be controlled the same way under the No Action Alternative and as per ARM 17.8.308. Measures used to control fugitive dust according to the Air Pollution Control Plan (SCM, 2002) and the best available control capability that is technology practicable and economically feasible (ARM 17.8.752) requirements in MAQP #1120-12 (DEQ, 2014)) include:

- Enclosed conveyors;
- Enclosed dump pit with a dust suppression system;
- Dust suppression at the crusher operation;
- Dust suppression and collection system with a chute at the railcar loadout;
- Completely enclosed storage barn for the coal storage pile;
- Minimization of fall distances of coal and overburden when loading trucks and stockpiles;
- Prevention of overshooting when blasting;
- Vegetation to prevent wind erosion;
- Chemical dust suppression and water on haul roads along with removal of loose debris from haul roads;

- Reclamation within one growing season;
- Pavement of access roads; and
- Filters on the coal quality analytical laboratory.

If the No Action Alternative is selected, these process controls would remain unchanged. The mine would continue to operate under the existing permit until operations and reclamation are complete in about 2027. The impacts to air quality from the No Action Alternative would be secondary (downwind and after the mining disturbance), short-term, and minor.

3.4.4.2 Proposed Action Alternative

Several activities associated with the Proposed Action would result in emissions of air pollutants from the SCM. The individual activities are summarized in the sections below. The text sections describe each activity and the basis for the emissions factors used in the analysis, as well as the multiplier used for the emissions calculations.

PM₁₀ would be the most prevalent emission (**Table 3.4-3**). The SCM air permit details emission factors for a permitted production rate of 30 million tons of coal per year (DEQ, 2014). The Proposed Action is expected to result in the production of 18 million tons of coal production per year. To estimate emissions, the analysis assumes the same emission factors from the air permit established for 30 million tons production per year (EPA, 1996; EPA, 1998; EPA, 2006a; EPA, 2006b; EPA, 2009; DEQ, 2014) and most were estimated using activity rates estimated using a ratio of the production rates. Based on the ratio of 18 million tons per year to 30 million tons per year, emissions were calculated as 60 percent (18 ÷ 30) of the permit estimates. PM₁₀ emissions from wind erosion was based on the disturbed area (wind erosion from disturbed acres), which is the additional 977 acres to be disturbed under the Proposed Action. The estimated annual emissions of PM₁₀ is 668.53 tons per year (**Table 3.4-3**). It should be noted that this method generates a calculation of additional emissions is very conservative, because disturbance of 977 acres would occur over 4 years, not 1 and the mining permit requires contemporaneous reclamation and for surface disturbance to be minimized as much as possible.

Table 3.4-3
Estimated Emissions of PM₁₀ and PM_{2.5} for Proposed Action

Process	PM ₁₀ Emissions (tons/year)	PM _{2.5} Emissions (tons/year)
Topsoil Removal	3.14	0.44
Topsoil Dumping	0.22	0.03
OB Drilling	2.64	0.15
OB Blasting	12.84	0.74
OB Removal (Truck/Shovel)	19.63	2.94
OB Replacement (Truck/Shovel)	19.63	2.94
OB Removal (Dragline)	180.65	4.09
OB Removal (Cast Blast)	4.62	0.69

Table 3.4-3
Estimated Emissions of PM₁₀ and PM_{2.5} for Proposed Action

Process	PM₁₀ Emissions (tons/year)	PM_{2.5} Emissions (tons/year)
OB Replacement (Cast Blast)	4.62	0.69
OB Haul	166.06	16.61
Coal Drilling	0.34	0.02
Coal Blasting	5.93	0.34
Coal Removal	0.45	0.07
Coal Haul	94.62	9.46
Coal Dump (Truck Dump)	0.03	0.00
Coal Dump (Conveyor)	0.15	0.02
Wind Erosion (Open Acres)	0.26	0.04
Wind Erosion (Storage Pile at Conveyor)	0.19	0.03
Wind Erosion (Storage Pile at Truck Dump)	0.19	0.03
Haul Road Repair	2.27	0.23
Water Trucks	61.10	6.11
OB Manipulation (Dozers)	67.22	6.72
Lump Coal Production	0.00	0.00
Stoker Coal Loadout	0.00	0.00
KPI-JCI 400 tph Scoria Crusher	0.53	0.08
Metso 400 tph Scoria Screen	0.74	0.11
Scoria Conveyor Transfer Points (10)	0.05	0.01
Fragmented Stone Load-in	0.02	0.00
Storage Pile Load-in and Load-out (2 piles)	1.68	0.25
Scoria Haul Road	1.83	0.18
Access Road	0.45	0.04
Nonroad Engine Sources	14.71	1.47
Train Loading	0.53	0.08
Coal Loadout from Stockpile (Truck Dump)	0.03	0.00
Primary Crusher (Truck Dump)	0.35	0.05
Secondary Crusher (Truck Dump)	0.54	0.08
Coal Loadout from Stockpile (Conveyor)	0.02	0.00
Primary Crusher (Conveyor)	0.02	0.00
Stationary Combustion Sources	0.25	0.02
Total Annual Emissions	668.53	54.81

Emissions of PM_{2.5} were also estimated (**Table 3.4-3**). Emissions factors for PM_{2.5} were not included in the air permit and therefore were calculated as a portion of the PM₁₀ based on AP-42 emissions factor guidance (EPA, 1996; EPA, 1998; EPA, 2006a; EPA, 2006b; EPA, 2009; Midwest Research Institute, 2006) depending on the source. The ratio of PM_{2.5} to PM₁₀ is

between 0.023 and 0.15. The PM_{2.5} emissions from these activities were estimated as 54.81 tons per year. If the Proposed Action is approved, fugitive dust would continue to be controlled per SCM's MAQP #1120-12, as described in Section 3.3.1 above (DEQ, 2014).

Emissions of NO_x were estimated for blasting activities. Because information on the specific type of blasting explosives in use was not available, the highest emission factor in AP-42 Section 15.9 was used as a conservative estimate (EPA, 2009). **Table 3.4-4** summarizes estimated NO_x emissions from blasting activities. The estimated annual emissions of NO_x are 0.0036 tons per year, or 7.14 pounds per year.

**Table 3.4-4
Estimated Emissions of NO_x for Proposed Action**

Process	Controlled NO _x Factors			Emissions	Emissions
	Value	Units	Blasts/year	Pounds/year	Tons/year
Overburden Blasting	0.07	pounds/blast	30	2.1	0.0011
Coal Blasting	0.07	pounds/blast	72	5.04	0.0025
Total Annual Emissions				7.14	0.0036

As noted in Section 3.4.1, secondary impacts in the form of transient particulate emissions would primarily be deposited within a half mile of where they are generated and gaseous pollutants such as NO₂ may travel farther. Dust control measures would eliminate secondary impacts from particulate emissions further than one-half mile downwind.

Based on the analysis above, overall impacts on air quality from the Proposed Action are expected to be both direct (on SCM and at the time of mining) and secondary (downwind), short-term, and negligible.

3.4.5 Unavoidable, Irreversible and Irretrievable Impacts

3.4.5.1 Air Quality

Some impacts to air resources are unavoidable and would be associated with emissions and fugitive dust from operating a coal mine, traffic and transportation of coal, and other reasonably foreseeable future actions.

3.5 LAND USE

This section discusses land use resource issues, the analysis area, the affected environment, and direct and secondary impacts associated with the No Action and Proposed Action Alternatives.

3.5.1 Analysis area

The analysis area for land use is the Permit Area (9,220 acres).

3.5.2 Issues and Analysis Methods

Issues identified for analysis include the following:

- What would the postmining land use be? This issue was addressed by reviewing the reclamation plan and postmining land uses.
- Who owns the expansion parcels? A listing of parcels and the ownership is presented in the Affected Environment in Section 3.5.3.

3.5.3 Affected Environment

3.5.3.1 *Regulatory Environment*

Land use is defined in MSUMRA, Section 82-4-203(29), MCA, as;

specific uses or management-related activities, rather than the vegetative cover of the land. Land uses may be identified in combination when joint or seasonal uses occur and may include land used for support facilities that are an integral part of the land use. Land use categories include cropland, developed water resources, fish and wildlife habitat, forestry, grazing land, industrial or commercial, pastureland, land occasionally cut for hay, recreation, or residential.

ARM 17.24.762 Postmining Land Use includes regulations on postmining land use, as follows:

- (1) The postmining land use must satisfy Section 82-4-203(29) and Section 82-4-232(7), MCA. In applying Section 82-4-232 (7), MCA, the following applies:
 - (a) The premining uses of the land to which the postmining land use is compared are those that the land previously supported or could have supported if the land had not been mined and had been properly managed.
 - (b) The postmining land use for land that has been previously mined and not reclaimed must be judged on the basis of the land use that existed prior to any mining. If the land cannot be reclaimed to the use that existed prior to any mining because of the previously mined condition, the postmining land use must be judged on the basis of the highest and best use that can be achieved and is compatible with surrounding areas.
 - (c) The postmining land use for land that has received improper management must be judged on the basis of the premining use of surrounding lands that have received proper management.
- (2) (d) If the premining use of the land was changed within five years of the beginning of mining, the comparison of postmining use to premining use must include a comparison with the use of the land prior to the change as well as its uses immediately preceding mining. Alternative postmining land uses may be proposed and must be determined in accordance with Section 82-4-232(7) and (8), MCA, and ARM 17.24.821 and 17.24.823.

- (3) Certain premining facilities may be replaced pursuant to Section 82-4-232(10), MCA.

MSUMRA Section 82-4-232(7), MCA states that all disturbed areas must be reclaimed in a timely manner to conditions that are capable of supporting the land uses that they were capable of supporting prior to any mining or to higher or better uses approved pursuant to subsection (8).

Approximately 977 acres would be disturbed by the TR1 Project and would require reclamation to the approximate original premine topography and approximate original drainage basins to facilitate postmine land uses. This section describes the land ownership, leases, and primary and other premining land uses in the analysis area.

3.5.3.2 Land Ownership and Leases

The surface ownership of the TR1 Project Area is shown in **Table 3.5-1** and on **Figure 3.5-1**. **Figure 3.5-2** shows oil and gas ownership.

Table 3.5-1
Surface and Mineral Ownership Within the Permit Boundary

Type	Acres of Permitted Mineral Ownership	Acres of Permitted Surface Ownership
Federal (Bureau of Land Management)	7,896	904
Tribal (Northern Cheyenne Tribe)	0	17
State (DNRC and MDT)	1,120	674
Private	204	7,625
Totals	9,220	9,220

Source: (SCM, 2019).

Primary Premining Land Uses

The primary premining land uses in the analysis area that are defined in MSUMRA Section 82-4-203 (29), MCA are wildlife habitat, grazing land, and pastureland. These land uses are also the dominant land uses on adjacent lands. These land uses are described in the sections below and the premine acres within the disturbed area are shown in **Table 3.5-2**.

Table 3.5-2
Premining Land Uses in Disturbed Area

Premining Land Use	Acres
Wildlife Habitat	3,584
Grazing	1,845
Pasture	703
Ponds	3
Total Disturbed Area at Life of Mine	6,134

Source: (SCM, 2018c)

Figure 3.5-1. Surface Ownership Map

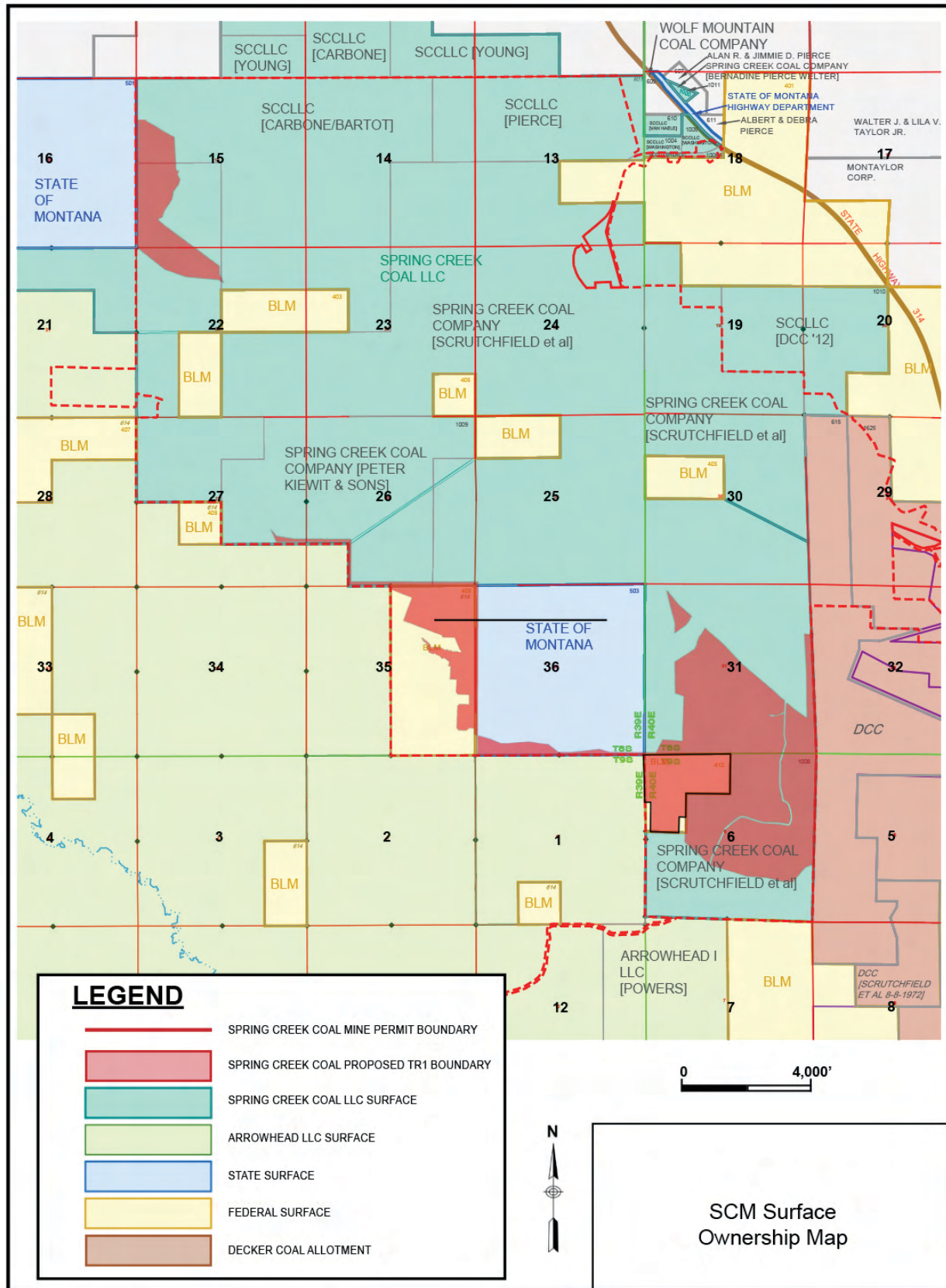
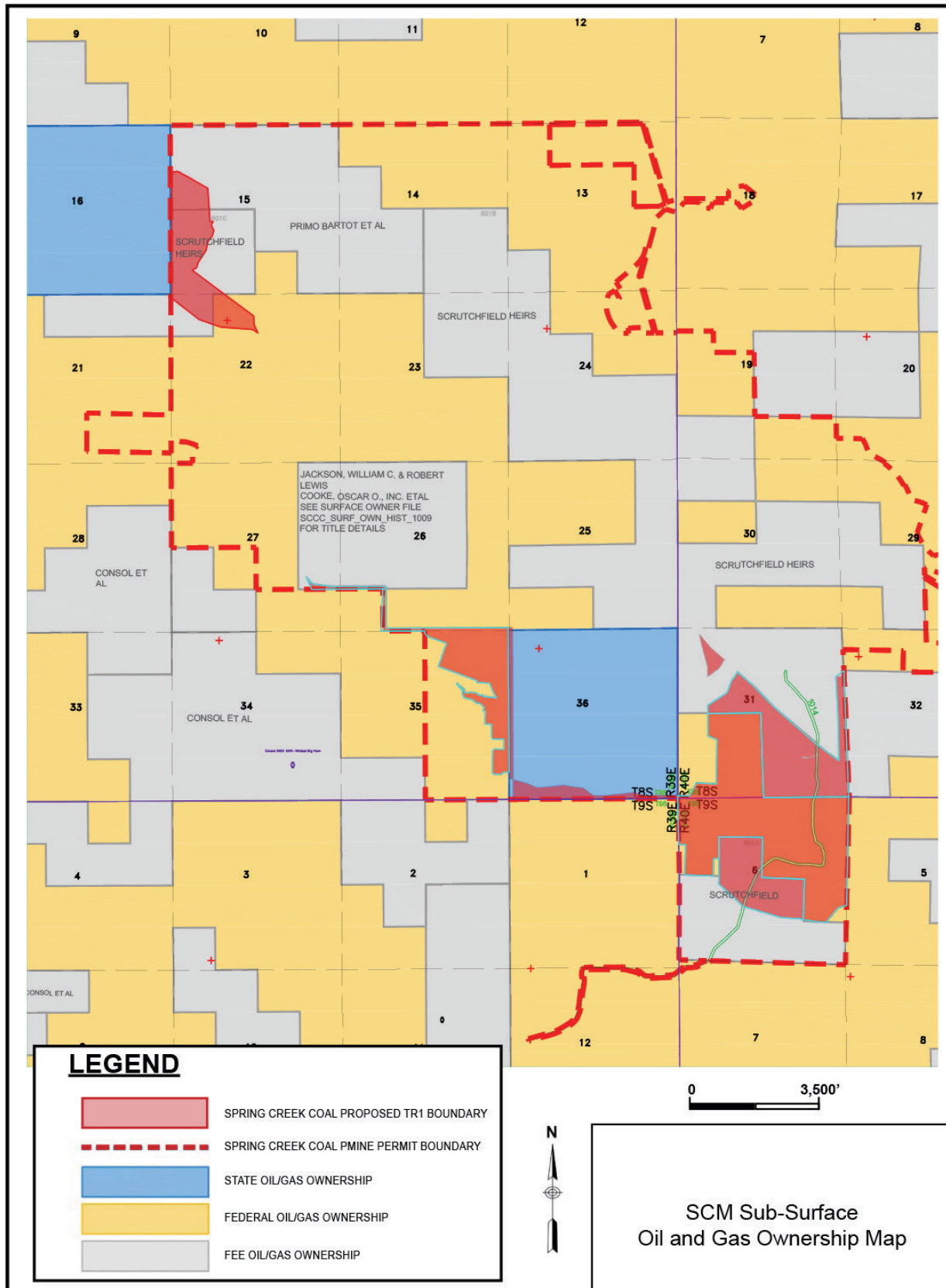


Figure 3.5-2. Oil and Gas Ownership Map



Wildlife Habitat

Fish and wildlife habitat are defined in Section 82-4-203(20), MCA, as “land dedicated wholly or partially to the production, protection, or management of species of fish or wildlife.” The primary surface land use is for wildlife habitat. There is no fish habitat in the land use analysis area. Wildlife habitat, especially for sage grouse, is discussed in Section 3.11, Wildlife.

Grazing Land

Grazing land is defined in Section 82-4-203(22), MCA, as “land used for grasslands and forest lands where the indigenous vegetation is actively managed for livestock grazing or browsing or occasional hay production.” There is one grazing lease (GR3387) on a portion of the approximately 977 acres. There is no livestock grazing within the TR1 Project Area, however, grazing occurred premining.

Pastureland

Pastureland is defined in Section 82-4-203(38), MCA, as “land used primarily for the long-term production of adapted, domesticated forage plants to be grazed by livestock or occasionally cut and cured for livestock feed.”

3.5.4 Direct and Secondary Impacts

3.5.4.1 No Action Alternative

Under the No Action Alternative, SCM would not expand mining to the TR1 Project Area and there would be no direct or secondary impacts to land use for this area.

3.5.4.2 Proposed Action

Table 3.5-3 shows the surface and subsurface (coal and other minerals) ownership in the TR1 Project.

**Table 3.5-3
Surface and Subsurface (Coal and Other Mineral) Ownership
within the Approximately 977 Acres**

Ownership	Acres Permitted	
	Surface	Subsurface (Coal)
Federal (BLM) Lands	175	936
State of Montana – School Trust Lands	41	41
SCM	761	0
Total	977	977

The approximately 977 acres of additional surface disturbance to recover the 72 million tons of recoverable coal are all located within SCM’s permit boundaries.

Figure 1.1-2 depicts the SCM permit boundaries and coal leases.

Oil and gas leases also occur within the 977 TR1 Project Area, as shown in **Table 3.5-4**.

**Table 3.5-4
Oil and Gas Leases within Approximately 977 Acres**

Township and Range	Section	Owner	Acres
T8S, R39E	15 and 22	Scrutchfield	109
T9S, R40E	6	Scrutchfield	98
T8S, R40E	31	Scrutchfield Heirs	179
T8S, R39E	36	State of Montana	43
T8S, R39E	35	Federal	125
T8S, R39E	22	Federal	21
T8S, R40E	6 and 31	Federal	395
T8S, R39E	26 and 27	Jackson, William, and Robert Lewis	7

As mining progresses, approximately 844 acres would be disturbed for the expansion of Pits 1, 2, and 6 to mine coal, while 133 acres would be disturbed for constructing a temporary overburden stockpile in an area west of Pit 4. Disturbance of the approximately 977 acres would curtail other mineral development; cause wildlife habitat disturbance; and reduce livestock grazing during active mining in the permit boundary for an additional 15 years during mining and reclamation. Wildlife (particularly big game) use would be displaced while the proposed acres are being mined and reclaimed. Livestock grazing is currently not conducted inside the permit boundary. Once reclamation is complete after Phase IV bond release (estimated to be about 10 years), livestock grazing could be conducted once the permit boundary is removed.

SCM would reclaim the 977 acres to reestablish wildlife habitat as mining progresses. See Section 3.9, Vegetation and Reclamation, for details on reclamation.

Overall, the direct impacts on land use would be moderate and short-term, continuing through the time needed to obtain bond release.

During operations and reclamation, no impacts on land uses are expected to extend beyond the TR1 Project Area, so there would be no secondary impacts occurring at a different location. There would be impacts to sage grouse and other wildlife (Sections 3.6.4 and 3.12.4) from noise and SCM has already committed to follow the best practices listed in the approved SCM Fish and Wildlife Plan (see ARM 17.24.312). The mined areas would continue to recover following reclamation and the postmining land use would primarily be for wildlife habitat. The reclaimed wildlife habitat land use could support some livestock grazing. As reclamation progresses to the Phase III reclamation level, the established reclamation areas would be monitored, and some areas allowed to be grazed by livestock. Following final Phase IV reclamation, the land use could include other mineral development.

3.5.5 Unavoidable, Irreversible, and Irretrievable Impacts

3.5.5.1 Land Use and Recreation

The reduction in livestock grazing and elimination of wildlife habitat during mining is an unavoidable impact. The removal of coal through mining is irreversible and irretrievable.

3.6 NOISE

This section discusses noise issues, the analysis area, the affected environment, and direct and secondary impacts associated with the No Action and Proposed Action Alternatives.

3.6.1 Analysis area

The noise analysis area for direct and secondary impacts on noise-sensitive receptors includes a 2-mile buffer area around the TR1 Project Area. The 2-mile buffer is adequate to evaluate the project equipment noise as it dissipates from the source.

3.6.2 Issues and Analysis Methods

- How much would the ambient noise level increase at noise-sensitive receptors? Operational and reclamation noise levels were predicted using the Cadna-A Version 2017 software and compared to ambient conditions.

3.6.3 Affected Environment

Noise is generally defined as unwanted sound, and can be intermittent or continuous, steady or impulsive, stationary or transient. Noise levels heard by animals are dependent on several variables, including distance and ground cover between the source and receiver and atmospheric conditions. Perception of noise is affected by intensity, frequency, pitch and duration. Response to noise by wildlife is a function of many variables, including characteristics and duration of the noise, habitat, season, previous noise exposure, and other factors. Different species have different levels of noise tolerance, habituation, and displacement.

3.6.3.1 Regulatory Environment

A review of existing federal, state, and county noise regulations, ordinances, and guidelines was conducted and used to establish significance criteria for assessing project compliance at identified noise-sensitive receptors.

MSUMRA's implementing rules do not regulate noise per se but do include regulations related to the use of explosives. Specifically, ARM 17.24.623(1) and (2) state:

- (1) The operator shall publish a blasting schedule at least 10 days, but not more than 20 days, before beginning a blasting program in which blasts that use more than 5 pounds of explosive or blasting agent are detonated. The blasting schedule must be published once in a newspaper of general circulation in the locality of the blasting site.
- (2) Copies of the schedule must be distributed by mail to local governments and public utilities and by mail or delivered to each residence within 1/2 mile of the permit area described in the schedule. For the purposes of this section, the permit area does not

include haul or access roads, coal preparation and loading facilities, and transportation facilities between coal excavation areas and coal preparation or loading facilities, if blasting is not conducted in these areas. Copies sent to residences must be accompanied by information advising the owner or resident how to request a preblasting survey.

Additional surface blasting requirements are found in ARM 17.24.624, which limit blasting to daytime hours, require a warning signal and blasting schedule, and place flyrock restrictions, among other things.

In 2005, FWP developed the *Management Plan and Conservation Strategy for Sage Grouse in Montana*. The plan describes the desired conditions for sage grouse habitat and identifies risks confronting habitat and sage grouse populations, including noise near leks that can disrupt breeding rituals and cause lek abandonment. This plan limits impacts of fossil fuel generation facilities to 10 A-weighted decibels (dBA) above background noise at the lek (FWP, 2005). Per EO 10-2014 the MSGHCP was developed to sustain viable sage grouse populations and conserve habitat while utilizing the plan, and implementing EO 12-2015 that outlines stipulations for development, including noise. However, the TR1 Project is exempt from EO 12-2015 due to pre-existing lease conditions validated prior to EO 10-2014.

MSUMRA, however, requires each application to contain a fish and wildlife plan describing how the project will minimize disturbances and adverse impacts (including noise impacts) on fish, wildlife, and related environmental values during mining and reclamation operations (ARM 17.24.312(1)(a)). Applicants are required to explain how they will utilize impact control measures, management techniques, and annual monitoring methods to protect or enhance habitats of unusually high value for fish and wildlife (ARM 17.24.312(1)(d)(iii)). DEQ consults with state and federal fish and wildlife authorities (including the Montana Sage Grouse Program) to ensure that reclamation will provide for habitat needs of various wildlife species in accordance with the approved postmining land use (ARM 17.24.751(2)(e)).

3.6.3.2 Noise Terminology

Noise levels are quantified using units of decibels (dB). Humans typically have reduced hearing sensitivity at low frequencies compared with their response at high frequencies. The “A-weighting” of noise levels, or dBA, closely correlates to the frequency response of normal human hearing (250 to 4,000 hertz [Hz]). Noise levels typically decrease by approximately 6 dBA every time the distance between the source and receptor is doubled, depending on the characteristics of the source and the conditions over the path that the noise travels. The reduction in noise levels can be increased if a solid barrier or natural topography blocks the line of sight between the source and receptor.

For environmental noise studies, noise levels are typically described using A-weighted equivalent noise levels (L_{eq}) during a certain time period. The L_{eq} metric is useful because it uses

a single number, similar to an average, to describe the constantly fluctuating instantaneous noise levels at a receptor location.

The 90th percentile-exceeded noise level (L_{90}) is typically considered the ambient noise level. The L_{90} is a single number that represents the noise level exceeded during 90 percent of a measurement period. Therefore, it is also an indication of the residual noise level, and among the lowest noise levels during a measurement period. It typically does not include the influence of discrete noises of short duration, such as bird chirps, backup alarms, vehicle pass-bys, or a single blast. If a continuous noise is audible at a measurement location, such as an engine, typically it is that noise that determines the L_{90} of a measurement period even though other noise sources may be briefly audible and occasionally louder than the equipment.

The 50th percentile-exceeded noise level (L_{50}) is a metric that represents the single noise level exceeded during 50 percent of a measurement period. The L_{50} is the median noise level during a period of time. Therefore, if the L_{50} during a 1-hour period is 60 dBA, half of the constantly-fluctuating, instantaneous noise levels are greater than 60 dBA, and half are less than 60 dBA. Noises with a duration of less than 30 minutes during a 1-hour period will have little influence on the L_{50} metric for that hour, no matter how loud the noise. The L_{max} metric denotes the maximum instantaneous sound level recorded during a measurement period.

3.6.3.3 Existing Acoustical Environment

Existing man-made noise sources within 2 miles of the TR1 Project Area include the SCM operations, intermittent vehicles traveling on gravel roads, grazing activities and aircraft flyovers. Distant train, Highway 314 traffic, and other energy development (oil/natural gas) noise sources may also be audible. Natural sound sources include wind, wildlife, birds, insects, grazing animals, and flowing water in the area creeks.

No residences are located within 2 miles of the TR1 Project Area. Noise-sensitive wildlife species occupy the area, including sage grouse, sharp-tailed grouse, songbirds, and raptors, as identified in Section 3.12. Three active sage grouse leks (Pasture, Alternate Pasture, and Playa) are located within 1.5 miles west or southwest of Pits 1 and 2.

The existing ambient sound levels based on current operations are estimated to be approximately L_{90} 15 dBA and L_{50} 20 dBA, which are typical for sparsely populated, rural locations that are predominantly natural (Harris 1998, Patricelli et al. 2013). However, sound levels at noise receptors located adjacent to existing man-made and natural noise sources are intermittently higher.

3.6.4 Direct and Secondary Impacts

The assumptions used for the noise predictions are summarized in **Table 3.6-1**.

**Table 3.6-1
Assumptions Used for Equipment Noise**

Activity	Associated Equipment and Noise Levels (L_{max} at 50 feet)	Other
Topsoil Salvage or Reclamation	(3) 637 G Scrapers – 89 dBA (1) CAT 16 Road Grader – 85 dBA (1) Small D6 Cat Dozer – 85 dBA	<ul style="list-style-type: none"> • Elevation: 1-foot below ground surface (bgs) for topsoil storage, 20 feet bgs for reclamation • Location: 500 feet ahead of Coal Block • Operations: 7am-7pm, 7 days/week • Without equipment operating, existing estimated sound levels are: L_{90} 15 dBA and L_{50} 20 dBA
Pre-strip – Dozer	(1) CAT 834B Rubber Tire Dozer – 85 dBA	<ul style="list-style-type: none"> • Elevation: 1-foot bgs to 20 feet bgs • Location: Within Coal Block • Operations: 24 hours/day, 7 days/week
Pre-strip – Truck & Shovel	(1) 303 CAT 7495 4100 Electric Shovel – 82 dBA (8) Komatsu 830E Haul Trucks – 89 dBA (1) CAT 16 Road Grader – 85 dBA (1) Diesel Powered Light Plants – 81 dBA	<ul style="list-style-type: none"> • Elevation: 30 feet bgs to 200 feet above top of coal (approx. 182 feet bgs) • Location: Within Coal Block - haul to regrade area in backfill or overburden stockpile • Operations: 24 hours/day, 7 days/week • Haul trucks equipped with thermostatic fan clutches (20-30% of typical speed) and noise blankets • Diesel lights nighttime hours only
Cast Drilling	(1) Ingersol-Rand DMM2 – 98 dBA (1) Atlas Copco DM50E Drills – 98 dBA	<ul style="list-style-type: none"> • Elevation: 200 feet above top of coal (approx. 100 feet bgs) • Location: Within Coal Block • Operations: 24 hours/day, 7 days/week • Drilling overburden 1 month ahead of Cast
Cast Shot – Blasting	Blast – 118 to 131 dB	<ul style="list-style-type: none"> • Elevation: 200 feet above top of coal (approx. 182 feet bgs) • Location: Within Coal Block • Operations: Daylight hours, 7 days/week • Shot within 1st month of Cast period (one to several months long) • Blast noise is instantaneous • Blast levels measured in Pit 4 • Surface blasting follows ARM 17.24.624
Cast Shot – Dozing	(2) CAT D11 Dozers – 85 dBA	<ul style="list-style-type: none"> • Elevation: 180 to 120 feet above top of coal (approx. 182 to 320 feet bgs) • Location: Within Coal Block • Operations: 24 hours/day, 7 days/week
Overburden Removal	(1) Electric Dragline – 79 dBA (1) Cat D11 Dozer – 85 dBA	<ul style="list-style-type: none"> • Elevation: 60 feet above top of coal to top of coal seam (approx. 382 bgs)

**Table 3.6-1
Assumptions Used for Equipment Noise**

Activity	Associated Equipment and Noise Levels (L_{max} at 50 feet)	Other
	(1) John Deer 460G Skidder – 85 dBA	<ul style="list-style-type: none"> • Location: Within Coal Block • Operations: 24 hours/day, 7 days/week • Skidder moves power cable
Coal Removal	(4) Komatsu 830E Haul Trucks – 89 dBA (1) Hitachi EX1200 Track Hoe – 80 dBA (1) Rubber Tire Dozer – 85 dBA (2) 2300 Shovel – 82 dBA (1) CAT 16 Road Grader – 85 dBA (1) Goodwin HL5 Diesel Water Pump – 81 dBA (2) Diesel Powered Light Plants – 81 dBA	<ul style="list-style-type: none"> • Elevation: Top of coal seam to bottom of coal seam (382 to 462 feet bgs) • Location: Within Coal Block • Operations: 24 hours/day, 7 days/week • Grader split up between both coal shovels • Dewatering pump - one at each shovel • Haul trucks equipped with thermostatic fan clutches (20-30% of typical speed) and noise blankets • Diesel lights nighttime hours only

Sources: (CPE, 2019; FTA, 2006; Harris, 1998; LSA Associates, 2006; Patricelli, et al., 2013; SCM, 2017a)

Diesel-powered equipment are dominant long-term noise sources during mining operations (**Table 3.6-1**). Noise levels will vary considerably based on the phase of mining, the type and condition of the equipment, the constantly-varying distances as the equipment moves, and the depth below ground surface (bgs). Therefore, mining noise varies from day to day and hour to hour, depending on the operations occurring. When the line of sight is blocked by natural terrain or by the depth of mining, a barrier effect occurs, and noise levels are reduced.

Blasting is also used during mining operations, and SCM must meet ARM 17.24.624. Although blasting noise levels are high (**Table 3.6-1**), it occurs for just a few seconds, and does not influence the L_{50} noise level metric over 1-minute, 1-hour or longer periods, and therefore, was not included in the noise analysis.

Operation and reclamation noise levels were predicted using the Cadna-A Version 2017 software that uses algorithms from the International Organization for Standardization Standard 9613-2, *Attenuation of Sound During Propagation Outdoors, Part 2: General Method of Calculation*. This standard specifies the calculations to determine the reduction in noise levels due to the distance between the noise source and the receiver, the effect of the ground on the propagation of sound, and the effectiveness of natural barriers due to grade or man-made barriers. Calculations conservatively assume that atmospheric conditions are favorable for noise propagation, but atmospheric conditions can vary dramatically at large distances between

a noise source and a receptor. Therefore, temporary significant positive and negative deviations from the average estimated noise levels can occur (Harris, 1998).

No rural residences are located within 2-miles of Pits 1 and 2, but noise-sensitive wildlife species occupy the area, including sage grouse, sharp-tailed grouse, and raptors, as identified in Section 3.12. To evaluate wildlife impacts, noise was assessed at three active sage grouse leks (i.e., Pasture, Alt Pasture and Playa) that are located within 1.5 miles. The predicted noise levels for the No Action and Proposed Action Alternatives are worst case scenarios, since all of the noise sources per phase were grouped at the closest point in a pit to a particular receptor, and all equipment per phase was assumed to be operating simultaneously (**Table 3.6-1**).

The *Management Plan and Conservation Strategy for Sage Grouse in Montana* limits impacts of fossil fuel generation facilities to 10 dBA above background noise at a lek, to avoid disruption of breeding rituals or cause lek abandonment (FWP, 2005). Therefore, impacts were assessed for equipment noise levels greater than +10 L₅₀ dBA above the estimated existing ambient sound levels at three nearby active sage grouse leks (Section 3.6.3.2) (FWP, 2005; Patricelli, et al., 2013).

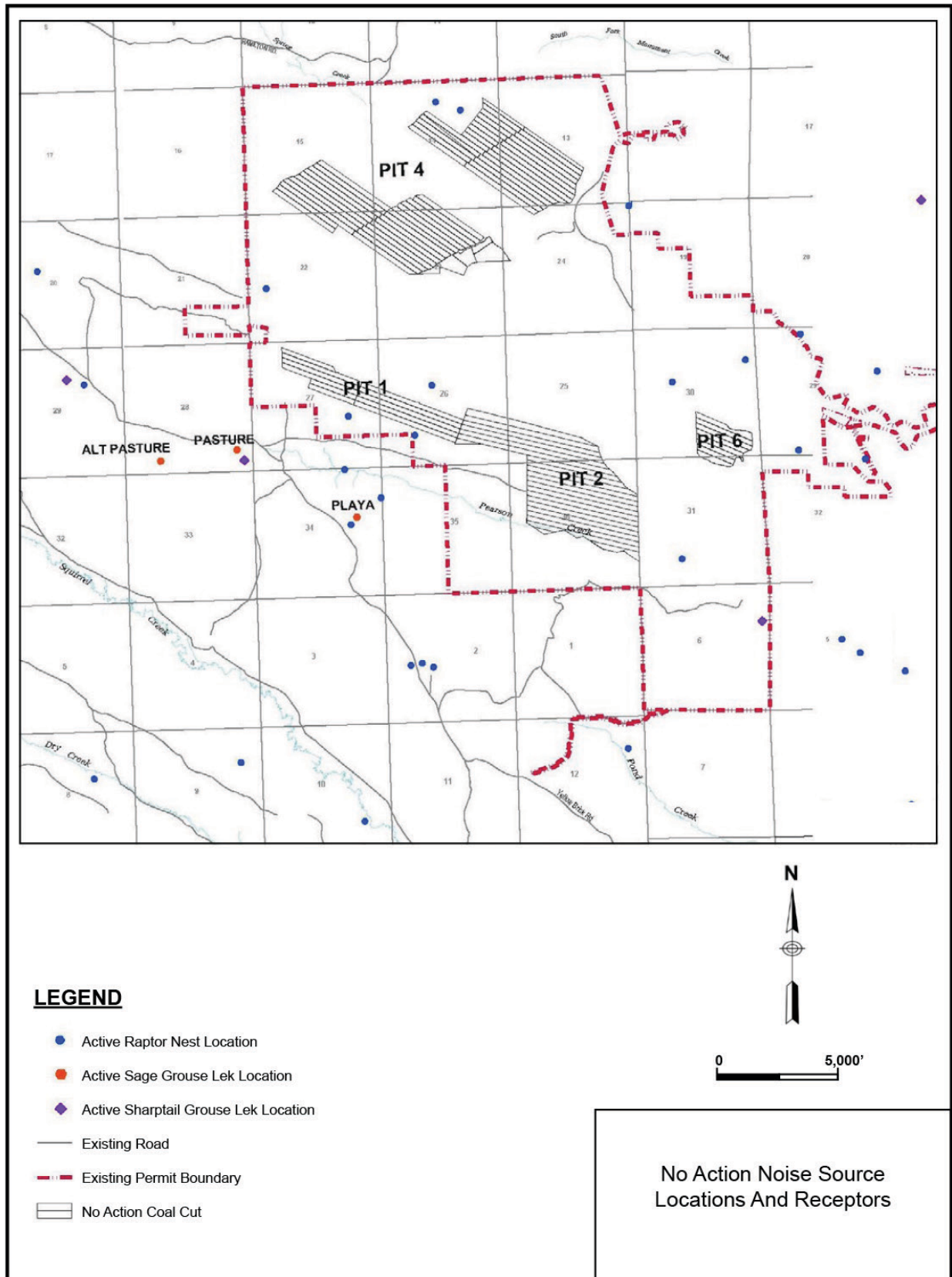
3.6.4.1 No Action Alternative

Under the No Action Alternative, SCM would not expand into the TR1 Project Area but existing mining activities and equipment would operate in the currently-permitted areas. Noise levels were predicted at three nearby active sage grouse leks for the existing permitted operations in Pits 1 and 2, as shown on **Figure 3.6-1** and in **Table 3.6-2**. For the No Action Alternative, the existing SCM operation L₅₀ noise levels are not predicted to exceed the ambient noise by more than +10 L₅₀ dBA at three nearby leks (Alt Pasture, Pasture and Playa).

3.6.4.2 Proposed Action Alternative

The Proposed Action would expand the SCM surface disturbance in Pits 1, 2 and 6, add additional soil stockpiles, and extend the life of the mine as shown on **Figure 3.6-2**. Noise levels were predicted at three nearby active sage grouse leks for the TR1 operations in Pits 1 and 2 as listed in **Table 3.6-3**.

Figure 3.6-1. No Action Noise Source Locations and Receptors



**Table 3.6-2
Noise Level Predictions No Action Alternative – Worst Case**

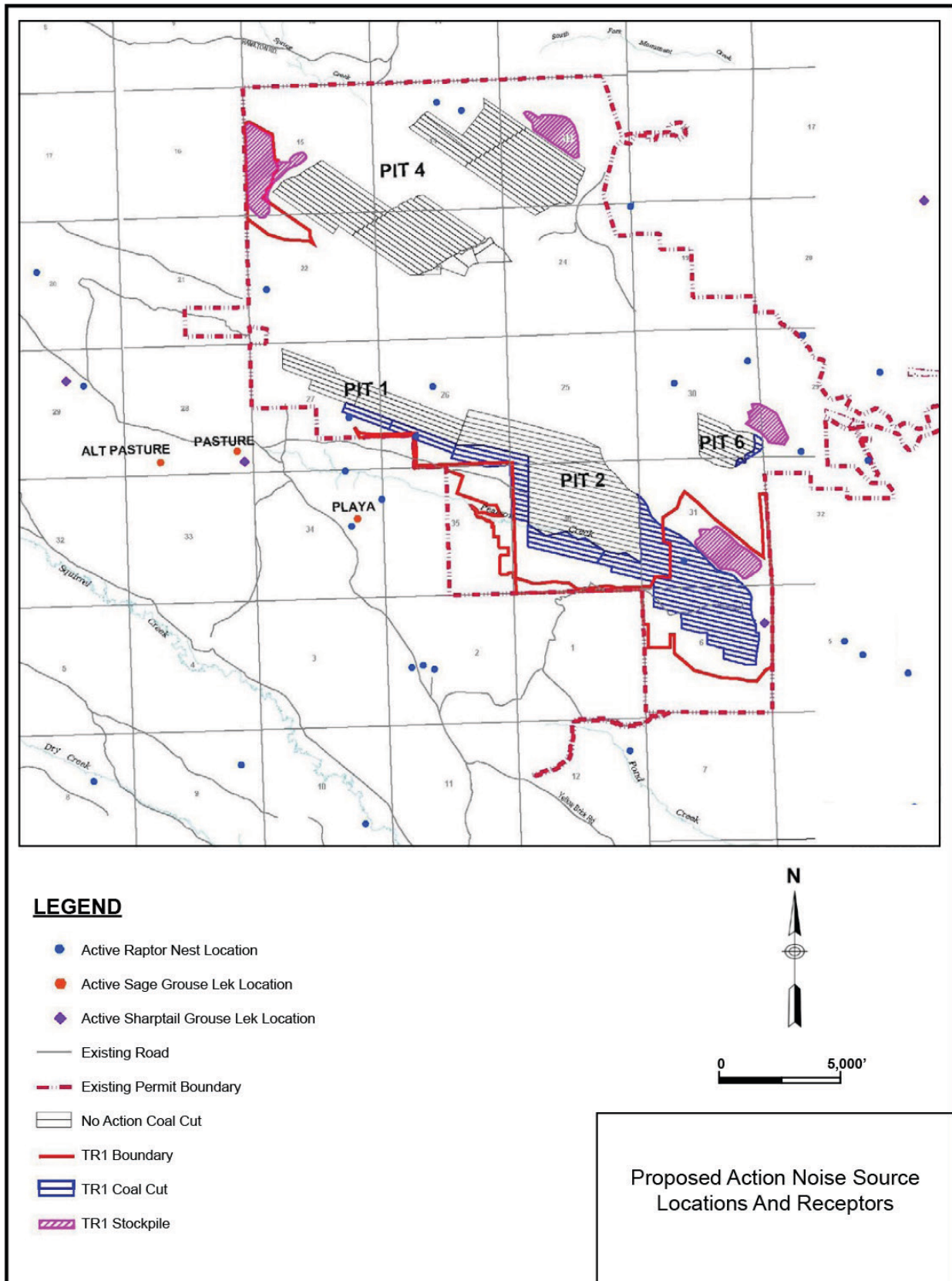
Receptor Distance and Direction from Closest Point of Existing Mine Pit (Figure 3.6-1)	Estimated Ambient Noise Level (L ₉₀ dBA)	Existing SCM Operations (Table 3.6-1)	Projected Dates of Occurrence (months/year)	Predicted Existing Equipment Noise Level (L ₅₀ dBA)	Existing Equipment L ₅₀ vs. Ambient L ₉₀	Greater than >10 L ₅₀ dBA?
Alt Pasture Lek						
1.20 miles SW of existing Pit 1	15	Topsoil salvage	1/19	13	-2	N
		Pre-strip – Dozer	3/19	16	1	N
		Pre-strip – Truck & Shovel	3/19	14	-1	N
		Cast Drilling	5/19	15	0	N
		Cast Shot Dozing	5/19	6	-9	N
		Overburden Removal	6/19	6	-9	N
		Coal Removal	6-7/19	4	-11	N
		Pit Reclamation	11/30	3	-12	N
Pasture Lek						
0.73 miles SSW of existing Pit 1	15	Topsoil salvage	1/19	23	8	N
		Pre-strip – Dozer	3/19	24	9	N
		Pre-strip – Truck & Shovel	3/19	22	7	N
		Cast Drilling	5/19	19	4	N
		Cast Shot Dozing	5/19	10	-5	N
		Overburden Removal	5/19	10	-5	N
		Coal Removal	6-7/19	8	-7	N
		Pit Reclamation	11/30	13	-2	N
Playa Lek						
0.81 miles SSW of existing Pit 1	15	Topsoil salvage	2/19	19	4	N
		Pre-strip – Dozer	2-4/21	21	6	N
		Pre-strip – Truck & Shovel	2-4/21	19	4	N
		Cast Drilling	7-9/21	15	0	N

**Table 3.6-2
Noise Level Predictions No Action Alternative – Worst Case**

Receptor Distance and Direction from Closest Point of Existing Mine Pit (Figure 3.6-1)	Estimated Ambient Noise Level (L₉₀ dBA)	Existing SCM Operations (Table 3.6-1)	Projected Dates of Occurrence (months/year)	Predicted Existing Equipment Noise Level (L₅₀ dBA)	Existing Equipment L₅₀ vs. Ambient L₉₀	Greater than >10 L₅₀ dBA?
		Cast Shot Dozing	7-9/21	11	-4	N
		Overburden Removal	8-12/21	11	-4	N
		Coal Removal	9-12/21	9	-6	N
		Pit Reclamation	1/26	9	-6	N

Sources: (CPE, 2019; Harris, 1998; Patricelli, et al., 2013; SCM, 2017a)

Figure 3.6-2. Proposed Action Noise Source Locations and Receptors



**Table 3.6-3
Noise Level Predictions Proposed Action – Worst Case**

Receptor Distance and Direction from Closest Point of TR1 Mine Pit Expansion (Figure 3.6-2)	Estimated Existing Ambient Noise Level (L90 dBA)	TR1 Operations (Table 3.5-1)	Projected Dates of Occurrence (months/yr)	Predicted TR1 Equipment Noise Level (L50 dBA)	TR1 Equipment L50 vs. Ambient L90	Greater than +10 L50 dBA?
Alt Pasture Lek						
1.47 miles WSW of Pit 1 expansion	15	Topsoil salvage	1-7/29	24	9	N
		Pre-strip – Dozer	1-7/29	19	4	N
		Pre-strip – Truck & Shovel	5-11/29	17	2	N
		Cast Drilling	5-11/29	8	-7	N
		Cast Shot Dozing	5-11/29	1	-14	N
		Overburden Removal	5-11/29	1	-14	N
		Coal Removal	5-11/29	-1	-16	N
		Pit Reclamation	11/30	14	-1	N
Pasture Lek						
0.88 miles WSW of Pit 1 expansion	15	Topsoil salvage	1-7/29	30	15	Y
		Pre-strip – Dozer	1-7/29	18	3	N
		Pre-strip – Truck & Shovel	5-11/29	16	1	N
		Cast Drilling	5-11/29	10	-5	N
		Cast Shot Dozing	5-11/29	1	-14	N
		Overburden Removal	5-11/29	1	-14	N
		Coal Removal	5-11/29	-1	-16	N
		Pit Reclamation	11/30	20	5	N
Playa Lek						
0.74 miles SSW of Pit 1 expansion	15	Topsoil salvage	12/23	24	9	N
		Pre-strip – Dozer	2-3/24	24	9	N
		Pre-strip – Truck & Shovel	2-3/24	22	7	N

**Table 3.6-3
Noise Level Predictions Proposed Action – Worst Case**

Receptor Distance and Direction from Closest Point of TR1 Mine Pit Expansion (Figure 3.6-2)	Estimated Existing Ambient Noise Level (L90 dBA)	TR1 Operations (Table 3.5-1)	Projected Dates of Occurrence (months/yr)	Predicted TR1 Equipment Noise Level (L50 dBA)	TR1 Equipment L50 vs. Ambient L90	Greater than +10 L50 dBA?
		Cast Drilling	4-7/24	22	7	N
		Cast Shot Dozing	4-8/24	13	-2	N
		Overburden Removal	4-8/24	13	-2	N
		Coal Removal	9-10/24	11	-4	N
		Pit Reclamation	1/26	14	-1	N

Sources: (Harris, 1998; Patricelli, et al., 2013; SCM, 2017a; CPE, 2019).

For the Proposed Action Alternative, the TR1 operation L₅₀ noise levels are only predicted to exceed the ambient noise by more than +10 L₅₀ dBA at the Pasture lek during topsoil salvage in 2029, when the equipment is closest to the lek. The topsoil salvage operations are scheduled to occur during lekking season (March 1 through July 15) in 2029. However, exceedances are not predicted for pre-strip operations or other mining activities due to a barrier effect (**Table 3.6-2**).

The difference in predicted noise levels between the No Action and Proposed Action Alternatives is +7 dBA during topsoil salvage at the Pasture lek (**Table 3.6-2** and **Table 3.6-3**). The difference is due to changes in distance and changes in terrain between the closest point of the TR1 expanded Pit 1 and the lek (**Figures 3.6-1** and **3.6-2**). Therefore, the predicted equipment noise of the Proposed Action during topsoil salvage would have a direct effect on the acoustical environment, and the noise level is predicted to exceed the +10 L₅₀ dBA impact criteria at the Pasture lek (Section 3.6.3.2). SCC is required to follow the best practices listed above to avoid topsoil salvage near active leks during the breeding season. Based on the analysis above, impacts on noise would be expected to be both direct (on the SCM at the time of mining and reclamation) and secondary (audible some distance from the actual disturbance). The direct and secondary noise impacts would be short-term and moderate.

Best Practices

To reduce noise impacts to wildlife, SCM has already committed to follow the best practices listed in the approved SCM Fish and Wildlife Plan, pursuant to ARM17.24.312, in the TR1 Project Application (SCM, 2017b) including:

- Minimize surface disturbance activities to the extent practicable (e.g., soil salvage, road construction, grubbing, logging, exploratory drilling, etc.) during the primary breeding season for most species in the region (i.e., April 1 through July 31);
- Honor sage grouse lek buffers to the extent practicable and schedule disturbance activities near active leks to occur outside the breeding season (March 1 through July 15; and
- Monitor all environmental variables, including vegetation, soils, wildlife (terrestrial and aquatic, as warranted), water, and air quality/meteorology to proactively mitigate mine-related impacts.

3.6.5 Unavoidable, Irreversible, and Irretrievable Impacts

For the Proposed Action Alternative, topsoil salvage operations are predicted to cause direct and short-term wildlife noise impacts. Noise levels would exceed +10 L₅₀ dBA above ambient noise at the Pasture lek (**Table 3.6.3**) located within 1.5 miles of Pits 1 and 2 (**Figure 3.6-2**). The topsoil salvage would be an unavoidable noise impact to sage grouse while occupying the Pasture lek. SCM is required to follow the best practices listed in the SCM Fish and Wildlife Plan (2017b) (Section 3.6.4.2) to reduce some of the noise from the topsoil salvage operations during the sage grouse breeding season, but would not completely eliminate the noise, thereby changing the acoustical environment during the TR1 operations.

3.7 SOCIOECONOMIC RESOURCES

This section discusses socioeconomic resource issues, the analysis area, the affected environment, and direct and secondary impacts associated with the No Action and Proposed Action Alternatives.

3.7.1 Analysis Area

The analysis area for socioeconomic impacts and indicators is Big Horn County, Montana, where the mine operates. Other impacts occur in Sheridan County, Wyoming, because it is the closest residential and commercial area to SCM. However, in accordance with MEPA, impacts beyond the borders of Montana are not analyzed per (Section 75-1-201(2)(a), MCA).

3.7.2 Issues and Analysis Methods

The issues analysis examined the following questions:

- What would be the impacts on employment and income from the Proposed Action and for how long? This issue was analyzed using the level of employment and income for the years these are anticipated to continue.
- What would be the impacts on local, state, and federal tax revenue from the Proposed Action and for how long? Taxes paid by the mine in property taxes, metal mines tax, and royalties were described for each alternative. Taxes paid by employees for state and federal income tax and county property taxes were analyzed.

3.7.3 Affected Environment

This section describes the regulatory environment, federal and state revenue and taxes, and employment and income. In 2017, SCM paid approximately \$55.7 million in federal, state, and local taxes and royalties on 12.7 million tons of coal mined. A summary of the taxes and royalties paid by SCM in 2017 are in **Table 3.7-1**.

**Table 3.7-1
Taxes and Royalty Payments by SCM in 2017**

Tax/Royalty	Amount
Coal Excise Tax (Black Lung Fund)	\$4.4 million
Federal Abandoned Mine Reclamation	\$3.5 million
Montana Coal Severance	\$19.7 million
Montana Coal Gross Proceeds	\$6.6 million
Resource Indemnity Trust Tax (RITT)	\$0.5 million
Federal Mineral Royalty	\$16.8 million
State Mineral Royalty	\$3.6 million
Private Mineral Royalty	\$0.6 million
Total Tax and Royalty Paid by SCM in 2017	\$55.7 million

3.7.3.1 Regulatory Environment

Coal Excise Tax (Black Lung Trust)

Section 4121 of the Internal Revenue Code imposes an excise tax on domestically-produced coal which is deposited in the Black Lung Disability Trust Fund to finance payments of benefits to afflicted miners. The tax imposed for surface mines is the lower of \$0.55 per ton or 4.4 percent of the sales price. The Coal Excise Tax paid to Montana by SCM equaled approximately \$4.4 million in 2017 based on approximately 12.7 million tons of coal mined (**Table 3.7-1**).

Federal Abandoned Mine Reclamation Fund

SMCRA requires active coal mines to reclaim their land and not cause long-term water-pollution discharges. Pre-1977, coal mines may have abandoned mine lands (AMLs) that pre-date SMCRA. Title IV of SMCRA addresses the reclamation of these AMLs through the establishment of the Abandoned Mine Reclamation Fund (AMRF) created with a federal per-ton tax on every ton of mined coal. These funds are allocated to State and Native American mine land reclamation programs to spend on reclamation projects in their jurisdictions. The fees are 28 cents per ton for surface-mined coal and 12 cents per ton for subsurface mining. SCM paid approximately \$3.5 million in 2017 based on 12.7 million tons of coal mined in that year (**Table 3.7-1**).

State of Montana Coal Severance Tax

Montana coal mines pay a severance tax based on the value of coal produced (Section 15-35-103, MCA). The tax rate on coal varies based on the heat content of the coal (**Table 3.7-2**) and the type of mine (open-pit or underground). Each coal producer is exempt from tax on 20,000 tons per year, and mines producing less than 50,000 tons per year are exempt from the tax.

Table 3.7-2
Severance Tax Computation

Heating Quality ¹	Rate for Surface Mines
Under 7,000	10 percent of value of the contract sales price
7,000 and over	15 percent of value of the contract sales price

Source: Section 15-35-103, MCA; 1 BTU per pound of coal

SCM coal averaged 9,283 British Thermal Units (BTU) per pound in 2016 and paid approximately \$19.7 million in coal severance tax (**Table 3.7-1**). For fiscal years 2015 through 2018, the average annual coal severance tax paid by all Montana coal mines averaged just over \$60 million (DOR, 2018b).

Montana Coal Board grants are funded by the coal severance tax. The Montana Coal Board distributes grants to cities, towns, counties, or school districts; any other local or state governmental units or agencies; or federally-recognized Indian Tribes to help provide government services needed as a direct consequence of an increase or decrease in coal

development, or of an increase or decrease in the consumption of coal by a coal-using energy complex (Section 90-6-208, MCA).

Coal severance taxes are also distributed to several state-level funds including the General Fund, Coal Tax Trust Fund, Long Range Building Program Account, Shared Account, Library Services, Conservation Districts, Growth through Agriculture, Park Acquisition Trust, Renewable Res. Debt Service, Cultural and Aesthetic Projects, and Coal and Uranium Program (DOR, 2018a). Extending the life of the mine 4 years would continue to generate coal severance tax revenue to Montana as shown in **Table 3.7-1**.

State of Montana Coal Gross Proceeds Tax

The coal gross proceeds tax is implemented in lieu of levied property tax on coal real property in Montana. The coal gross proceeds tax equals 5 percent of the coal's value which is determined by the contract coal price when extracted, or a price imposed by the Montana Department of Revenue (Section 15-23-703, MCA). The local county treasurer collects the tax and distributes it proportionally to the appropriate taxing jurisdictions. No tax is levied on reserve coal property in Montana. In 2017 SCM paid approximately \$6.6 million to the State of Montana for the coal gross proceeds (**Table 3.7-1**). For fiscal years 2015 through 2018, the annual gross proceeds taxes collected on all Montana coal property equaled approximately \$17 million (DOR, 2018b).

Federal Mineral Royalties

Under the Mineral Leasing Act of 1920, as amended, the DOI's Office of Natural Resources Revenue collects royalties on every ton of federal coal mined on federal land. Approximately half (49 percent) of these federal coal royalty revenues are returned to the states (Montana) which in turn use the money for road construction, schools, universities, communities affected by energy development, and general funds. In 2017, the SCM paid approximately \$16.8 million in Federal Mineral Royalties (**Table 3.7-1**).

According to the DOI Natural Resource Revenue data (DOI, 2019), the federal government received \$33 million in royalties from Montana resource development. All but \$2,600 was from coal (the rest from coal bed methane gas). In 2018, federal mineral royalties were \$31 million (about \$2,800 from coal bed methane). Of the total federal mineral royalties paid, coal mines in Big Horn County paid \$19 million in both 2017 and 2018.

The Montana Department of Revenue tracks the amounts of federal mineral royalties distributed to Montana from the federal government (DOR, 2018a). In 2017, Montana collected \$23 million and it collected \$26.9 million in 2018. Twenty-five percent of the revenue received by the State of Montana for federal mineral royalties is distributed to county governments based on mineral production in their county (Section 17-3-240, MCA). The remainder goes into the Montana general fund, 25 percent of which is deposited in a mineral impact account dedicated to local governments and the remaining 75 percent of funds going to state

government operations. The Montana Department of Administration (DOA) reported the fiscal year 2017 federal minerals royalty for Big Horn County was \$2.159 million (DOA, 2017). Big Horn County uses the mineral royalty for county-wide infrastructure improvements, acquisitions, and operation and maintenance needs.

State of Montana Mineral Royalties

Royalties are collected from state trust land coal leases; all of them are currently in Big Horn, Musselshell, and Rosebud counties. In 2017, SCM paid the State of Montana approximately \$3.6 million for 4.6 million tons of coal from state leases (DNRC, 2017). This payment includes a 12.5% royalty on coal removed and \$3 per acre annual rental cost.

Local Requirements

There are no local requirements that apply to the socioeconomic environment as it relates to the alternatives. Spring Creek Coal, LLC has the highest taxable value of property in Big Horn County (DOR, 2018b).

A summary of the tax revenue received by the state of Montana and Big Horn County in 2017 from coal mining is shown in **Table 3.7-3**.

Table 3.7-3
Revenue Paid to Montana and Bighorn County in FY 2018

Source	Montana	Big Horn County
Montana – Federal Mineral Royalties	Collected \$26.9 million in FY 2018 ^b	Received \$1.9 million in FY 2018 ^b
Montana Coal Severance (AML Fees)	Collected \$60.0 million in FY 2018 ^b	County level distribution not available.
Montana Gross Proceeds	Collected \$17.3 million in FY 2018 ^b	Received \$3.6 million in FY 2018
Montana Coal Leases	Collect \$9.7 million in 2018	County level distribution not available.
Montana Coal Board Grants	Paid out \$1.4 million in 2017 ¹	Received \$336,000 in 2017 ^a

Source: (DOR, 2018b).

1. Grant recipients were Big Horn County, City of Hardin, City of Hysham, City of Miles City, Harding Public School, Lame Deer Public Schools, Musselshell County, Northern Cheyenne Utilities Commission and Rosebud County (<https://commerce.mt.gov/News/PressReleases/montana-department-of-commerce-announces-14-million-in-community-development-funds>)
 - a. To be used for ambulance and county road department equipment. (<https://commerce.mt.gov/News/PressReleases/montana-department-of-commerce-announces-14-million-in-community-development-funds>)
 - b. Biennial Report (<https://commerce.mt.gov/News/PressReleases/montana-department-of-commerce-announces-14-million-in-community-development-funds>)

Employment and Income

SCM currently employs 281 employees. Approximately 94 percent of the workers reside in Wyoming, about 5 percent in Montana, and less than 1 percent in South Dakota. Payroll in 2017

from SCM was estimated at \$23.7 million for 247 employees (average of nearly \$96K annual income for each employee). There are no large towns in Montana near the mine (Sheridan, Wyoming is the closest), therefore most SCM employees live and spend money outside of Montana. In 2017, only 13 to 15 SCM employees live in Montana, therefore employment and income impacts on Montana and Big Horn County are insignificant under all Alternatives. Mining employed a total of 577 Big Horn County residents in 2017 (Headwaters Economics, 2019).

SCM spent approximately \$11 million on goods, services, and contributions in Montana, and nearly \$53 million in total in 2017 (SCM, 2018a).

3.7.4 Direct and Secondary Impacts

Public comments asked DEQ to analyze impacts that are outside the scope of this EIS. These include:

- Plans for employee transition out of coal mining;
- Impacts the SCM would have on coal markets;
- The Youngs Creek Mine and energy markets;
- The financial cost of coal trains;
- The social cost of carbon;
- Economic impacts from climate change on other industries such as timber, agriculture, or recreation and the cost of fire-fighting;
- The employment in or development of “green energy” or “clean energy;” and
- The price of coal.

In addition, there were several comments that used erroneous assumptions, including assumptions that coal train traffic would increase, and that other infrastructure would need to be modified to accommodate coal trains. The Proposed Action would not increase the rate of production and the use of coal trains (number or trips) would not change. Neither of these assumptions would occur, therefore they were not analyzed.

Employment and Income

No Action Alternative

The No Action Alternative would maintain employment at current levels for about 5 years if production is 13 to 14 million tons per year. If production were to increase to the 18 million tons per year, up to 340 employees would be maintained for about 4 more years (SCM, 2018a). After the mine closes, employees that still want to work would need to find employment elsewhere, which may be locally, or they may choose to relocate. Approximately 5 percent of SCM employees (13 to 15 people) reside in Montana.

SCM has estimated the number of employees needed for reclamation and closure (**Table 3.7-4**). Under the No Action Alternative, reclamation and closure would occur about four years earlier

compared to the Proposed Action Alternative and could begin in 2021 or 2022 and extend through approximately 2034.

Table 3.7-4
Employment During and After Closure by Year

Years from Closure	0-2	3-4	5-7	8-12
Employees Needed	30	18	14	3

Source: (SCM, 2018a).

The needs for goods and services for operations would begin to taper off in 2027 (when the mine closes) until all reclamation is complete in about 12 years, which would reduce the amount spent in Montana by SCM by approximately \$11 million. Based on the analysis above, impacts on employment and income in Montana are expected to be primarily secondary (after mining), short-term, and minor.

Proposed Action Alternative

The Proposed Action Alternative would have the same socioeconomic impacts as the No Action Alternative, but the employment of up to 340 people would extend about four more years until 2031. Assuming a production rate of 18 million tons per year, approximately 340 people would be employed until approximately 2031. Based on the analysis above, impacts on employment and income in Montana (13 to 15 employees) are expected to be direct (to the SCM employees), short-term, and minor.

Tax Revenue

No Action Alternative

Total federal, state and local taxes and royalties paid to Montana from SCM is expected to remain at 2017 levels of approximately \$42 million on 12.7 million tons of coal for about 4 more years through 2031. This revenue would go to the general fund and the county for school, roads, health care, pensions, and other spending. Based on the analysis above, impacts from continuation of taxes and royalty payments are expected to be short-term and moderate. These impacts would occur for approximately four years less than the Proposed Action Alternative. After mining and reclamation is complete, these impacts would cease, which would be a direct, long-term, and moderate impact on the state as a whole and a direct, long-term and major impact on Big Horn County from the reduction in taxes, royalties, and revenues from state coal leases.

Proposed Action Alternative

The additional coal mined from four additional years of SCM operations would be a benefit to economic activity and would be used mostly in electricity generation. This coal could potentially find alternative uses if not used for power generation.

While royalties on federal coal go to the federal government (with about 50 percent returned to the state), all the taxes on the coal mined would be paid to Montana. Based on SCM mining for four more years at a rate of 18 million tons of coal per year, the Proposed Action would result in approximately \$60 million paid annually to Montana from federal, state and local taxes and royalties. General fund money is used for state government operations (health care, education, pensions, transportation, welfare, and other spending).

Based on the analysis above, the impacts from continuation of taxes and royalty payments, from the Proposed Action would be expected to be short-term and moderate. These impacts would occur for approximately four years longer than under the No Action Alternative. After mining and reclamation is completed, these impacts would cease, which would be a direct, long-term, and moderate impact on the state as a whole and direct, long-term, and major for Big Horn County from the reduction in taxes, royalties, and revenues from state coal leases. Due to the isolated nature of the mine and the majority of workers residing in Wyoming, social impacts in Montana from four extra years of operation would likely be small.

3.7.5 Unavoidable, Irreversible, and Irretrievable Impacts

The Project would have no unavoidable, irreversible, and irretrievable impacts on economic or social activities in Big Horn County, Montana.

3.8 SOILS

Soil resources, soil salvage, soil stockpiling, and reclamation procedures used by SCM for the Proposed Action are described in the following subsection. Regulatory requirements are also identified along with methods and procedures for SCM to protect their soil resources and enhance the potential for successful reclamation of the mined lands. The direct and secondary impacts to soils associated with the No Action and Proposed Action Alternatives are also included.

3.8.1 Analysis Area

The analysis area includes the baseline soil survey areas completed for the entire SCM permitted mine area.

The original SCM baseline soil survey was conducted in 1979 (SCC, 1979) and used large scale soil mapping information from the 1977 Big Horn County Soil Survey (U.S. Department of Agriculture, Soil Conservation Service [USDA-SCS] 1977). The baseline soil survey for the South Fork expansion was completed in 1990 (Lupcho, 1990). A soil survey for the Carbone area expansion into Pit 4 was completed in 1998 (BKS, 1998) and included sampling and analysis of soil properties outlined in the 1998 revised DEQ Soil Suitability Guidelines (DEQ, 1998). The soil survey for the Pearson Creek Amendment area was completed in 2007 and 2008 (Bighorn Environmental Sciences, 2008). Lastly, in 2012, a baseline soil survey was completed for Areas A and B Expansion areas by Terra Soil and Environmental Solutions, LLC (2012). These SCM soil surveys have been merged together and cover the entire SCM permitted area. In addition, soil

sampling and analyses results have been included to characterize the soils and used to develop the plan to salvage the quantity and quality of soil for reclamation.

3.8.2 Issues and Analysis Methods

The soils issues analysis was designed to answer the following question:

- Would full reclamation of the land disturbed by the coal strip mine be successful? Soil properties and quantities of the salvaged soils (Lifts 1 and 2) were evaluated for compliance with DEQ Soil Suitability Guidelines (DEQ 1998).

Soil survey data from 1979 (SCC, 1979), 1990 (Lupcho, 1990), 1998 (BKS, 1998) 2007 and 2008 (Bighorn Environmental Sciences, 2008), and 2012 (Terra Soil Environmental Solutions, LLC, 2012) were used to analyze and assess potential impacts to SCM soil resources associated with the Proposed Action. Soils information was used to evaluate current practices SCM employs to characterize the soils, salvage the quantity and quality of soil needed for reclamation, and stockpile and redistribute soil.

Soils have been mapped for the 977 acres of the TR1 Project Area and include 53 different soil types (soil mapping units) that fall into 3 soil taxonomic orders. Soil orders include arid soils (Aridisols), weakly-developed soils (Entisols), and grassland soils (Mollisols) (Bighorn Environmental Sciences, 2008). Rock outcrops are present but are not classified as soils. A summary of the soil is provided in **Table 3.8-1**.

Table 3.8-1
Summary of Soil Resources on TR1 Acres

Soil Taxonomic Order	Cumulative TR1 Area (acres)	Number of Map Units in TR1 Area	Maximum Map Unit Size (acres)	Minimum Map Unit Size (acres)
Entisols	566.6	26	65.6	0.3
Aridisols	307.5	21	67.0	0.2
Mollisols	39.2	2	25.8	13.4
Not Classified	64.1	4	36.6	3.8
Totals	977.4	53	67.0	0.2

3.8.3 Affected Environment

The affected environment is the TR1 Project Area and the other disturbed areas in the SCM permitted area that have not been reclaimed.

The TR1 Area does not contain any areas designated as prime farmland or unique farmland (USDA, 2018). One soil map unit, Chutger clay loam (1 to 4 percent slopes (42B)), has properties that meet the criteria for prime farmland if irrigated. Farming has not occurred in this area and no reasonable sources of irrigation water are currently available.

3.8.3.1 Regulatory Environment

MSUMRA contains some provisions that address soil at Montana surface mines (Section 82-4-231 and 232, MCA; ARM 17.24.701 and 702). SCM is required to: (1) remove all topsoil and subsoil suitable for reclamation, (2) immediately replace or temporarily store and protect the soil resource during mining, and (3) replace soil following mining to support revegetation. **Table 3.8-2** summarizes the applicable rules and regulations.

**Table 3.8-2
Applicable Soil Rules and Regulations Under ARM and MSUMRA**

MSUMRA Title 82, Chapter 4, Part 2	Summary of Requirement
Subpart 222	Requires a Surface Mining Permit application, including a plan for the mining, reclamation, revegetation, and rehabilitation of land and water to be affected by the operation
Subpart 231	Requires a reclamation plan that includes a plan of grading, backfilling, highwall reduction, topsoiling, and reclamation for the area of land affected by the operation
Subpart 232	Specifies soil removal, storage, replacement, and reconstruction on prime farmlands and non-prime farmlands
Subpart 233	Requires planting of vegetation following grading of disturbed area
Subpart 235	Determination of successful revegetation – final bond release
ARM Title 17, Chapter 24	Summary of Requirement
Subchapter 3	Requires gathering soil baseline information (ARM 17.24.304 and 306), requirements of the reclamation plan (ARM 17.24.313), special application requirements for prime farmlands (ARM 17.24.324), and special-use requirements for coal-mining operations on or adjacent to areas including alluvial valley floors (ARM 17.24.325)
Subchapter 5	Contains backfilling and grading requirements
Subchapter 6	Lists performance standards for drainage reclamation (ARM 17.24.634) and sediment-control measures (ARM 17.24.638)
Subchapter 7	Requires soil removal (ARM 17.24.701); soil stockpiling and redistribution (ARM 17.24.702); establishment of vegetation (ARM 17.24.711); soil-stabilizing practices (ARM 17.24.714); use of soil amendments, management techniques, and land use practices (ARM 17.24.718); soil/spoil monitoring plan (ARM 17.24.723); postmining land use (ARM 17.24.762); and cropland reclamation (ARM 17.24.764)
Subchapter 8	Requires reclamation and preservation for prime farmland and alluvial valley floors

The DEQ has outlined methods and procedures for protecting soil resources disturbed by coal-mining operations and for enhancing the potential to achieve successful reclamation (*Soil, Overburden, and Regraded Spoil Guidelines* (DEQ, 1998). These guidelines are based on the requirements and objectives of MSUMRA and its implementing ARMs and include soil suitability criteria for determining salvage depths and volumes of suitable soil and other plant growth media for use in reclamation.

3.8.3.2 Soil Salvage and Removal

SCM would remove any large vegetation that would interfere with soil removal activities and then would use heavy equipment for the soil salvage operations. Suitable soil would be stripped and segregated into two lifts. Lift 1 would include soils from the A, E, and possibly upper B or C horizons and would be from the approximate upper 6 inches; this material would be placed into "A-soil" stockpiles. Lift 2 would include soils from deeper but still suitable soil horizons and would be placed in "B-soil" stockpiles.

SCM would include additional field characterization prior to soil salvage to accurately determine soil depths. Grid sampling would be completed across the areas and the results used to refine the soil salvage depths. Samples would be collected from the various soil horizons and analyzed for texture, pH, electrical conductivity (EC), sodium adsorption ratio (SAR), saturation percentage, boron (if EC exceeds 4.0), and percent coarse fragments for special soils. Other visible physical parameters (color, percent coarse fragments, etc.) would be determined and recorded. The soil field characterization results would be used to determine the planned soil salvage depths, which would be submitted to DEQ for approval.

SCM would use salvage stakes on 250-foot centers, or closer, to relay soil salvage depth information to the equipment operators. Additional salvage stakes would be used if topography or special conditions dictate. All available and suitable soils would be salvaged before drilling for blasting, mining, or other surface disturbances.

Salvaged soils could be immediately redistributed if regraded areas would be ready for soil placement. Concurrent direct-haul redistribution of salvaged soil eliminates the need to stockpile the soil. Most salvaged soil would be placed in soil stockpiles and the stockpiles would be seeded to minimize erosion. First-lift soil would be stockpiled separately from the deeper Lift 2 soil. SCM would salvage all Lift 2 soil to balance soil coverage requirements that is suitable for serving as plant growth media.

The volumes for Lift 1 and Lift 2 salvaged soils would be updated after actual volumes have been determined and the information would be provided in the Annual Mining Reports.

Substitute plant growth media, including scoria and other coarse-textured (alluvium) materials, would also be salvaged for special revegetation substrate media to create shrub mosaic areas and reclamation features. Results from SCM revegetation test plots have shown scoria to be a suitable plant growth media for some shrubs (big sagebrush) and warm-season grasses and can help increase species diversity. Scoria would be salvaged from natural deposits for use in reclamation to promote shrubs in certain areas as well as for road and other borrow materials. Suitable alluvial and colluvial materials would also be used as plant growth media for reclaiming channels and floodplains.

The volume of SCM Life of Mine soil and other plant growth media already salvaged, and soil available but not yet salvaged, were compared to the estimated volume of soil and other plant

growth media needed for reclamation (SCM, 2012). The soil volumes available and needed (balance) are calculated annually and are shown in **Table 3.8-3**. SCM has enough Lift 1 soil stockpiled and available to place an average of 4.6 inches of soil on areas designated for standard reclamation. The volume of Lift 2 soil stockpiled and available would provide approximately 12 inches of soil over those same standard reclamation areas.

Table 3.8-3
Soil and Other Plant Growth Media for Reclamation (in cubic yards)

Material	Lift 1 Salvaged	Lift 2 Salvaged	Not Yet Salvaged	Total Available
Soil	1,514,456	5,201,844	5,749,760	12,466,060
Other Plant Growth Media	57,698	311,540	778,901	1,148,139
Total Available	1,572,154	5,513,384	6,528,661	13,614,199
Total Soil and Plant Growth Media Needed				13,209,270
Balance (extra available)				404,929

Regraded spoil would be covered with Lift 2 soil first and then with Lift 1 soil as soon as practicable to prevent erosion of the spoil. The areas with replaced soil would then be seeded during the first appropriate season.

Soils are intrinsically related to successful reclamation. Reclamation bond is released based on completion of specified reclamation activities grouped under four bond release phases described in Section 1.8 and in ARM 17.24.1116(6).

Direct and Secondary Impacts

Direct soil impacts occur at SCM primarily from soil stripping, soil stockpiling, and soil replacement activities. These impacts are due to disturbance to soil physical properties including the loss of soil structure, compaction, and potential erosion. Secondary soil impacts occur after the soil has been redistributed but before the soil has reestablished biological activity, nutrient cycling, soil structure, or soil productivity which could be expected to take up to 10 years.

3.8.3.3 No Action Alternative

Under the No Action Alternative, the TR1 Project would not be approved and SCM's disturbance area would not be expanded to include the 977 acres. No additional direct or secondary impacts to soils from mining activities would occur on the 977 acres under the No Action Alternative.

In 2017, of the 4,879 acres disturbed at SCM, 1,017 acres (20.8 percent) had been released for Phase II bond (**Table 3.10-1**) (CPE, 2017). The four reclamation bond release phases are defined in Section 1.8.4 and Phase II reclamation is an important reclamation milestone for soils. Soil erosion and other soil aspects (i.e., compaction and fertility) have not restricted existing reclamation success or bond release at SCM. Rather, non-noxious invasive species at

reclamation sites have been the main reason some sites have not achieved Phase III bond release (SCM, 2017c).

3.8.3.4 Proposed Action Alternative

Under the Proposed Action Alternative, an additional 977 acres would be disturbed for mining coal and related activities. An estimated 134 acres of the 977 acres would be disturbed for constructing the OB4-3 soil stockpile to the west of Pit 4 but would not have any coal mined below Pit 4. Lift 1 (upper soil) and Lift 2 (subsoil) would be stockpiled for use in reclamation. Disturbed areas would be reclaimed and revegetated with the approved seed mixtures as mining is completed (concurrent reclamation).

Direct impacts to soil disturbed under the Proposed Action Alternative would result from the disturbance to the physical properties of soil including, loss of soil structure, soil compaction during stripping and stockpiling, and potential erosion from the soil surfaces and stockpiles. Secondary impacts to soils would include the overall loss of soil development and horizons from mixing, reduction of favorable physical and chemical properties, reduction in biological activity, and changes in nutrient levels. Soil productivity would be expected to return to previous levels within 10 years after reclamation.

Overall, the direct impacts from the Proposed Action Alternative on soil would be long-term and moderate. A direct impact of adding 977 acres of disturbance at the SCM would delay Phase II bond release until about 2034, after soil has been replaced, seeded, and at least two growing seasons have elapsed in the TR1 area. The secondary impacts to soils from the Proposed Action Alternative are expected to be long-term and minor.

3.8.4 Unavoidable, Irreversible, and Irretrievable Impacts

Mining would have unavoidable impacts on soil for the Proposed Action Alternative during the life of the mine through final reclamation. Soil chemical, physical, and nutrient properties would be adversely affected by soil salvage operations, stockpiling, and through reclamation until biological activity and soil nutrient and fertility return to previous levels.

Based on the analysis above, impacts on soil from the Proposed Action are expected to be long-term and minor. However, soils begin redevelopment upon redistribution for reclamation and the establishment of predominantly native vegetation.

3.9 TRANSPORTATION

The transportation resources used for moving coal consist of private haul roads on land leased by SCM, public roads owned and maintained by Montana counties and the state of Montana, and railroads owned and operated by Burlington Northern Santa Fe (BNSF) and Montana Rail Link in Montana. All coal is loaded onto BNSF trains and then is transported via both BNSF and Montana Rail Link. This section discusses the transportation analysis area, the affected

environment, and direct and secondary impacts to transportation associated with the No Action and Proposed Action Alternatives.

3.9.1 Analysis Area

The analysis area includes the permit area (**Figure 3.9-1**), the mine road between Wolf Mountain Coal Company (WMCC) and SCM, and the railroad rights-of-way owned and operated by BNSF between the SCM and the Wyoming-Montana border generally along Secondary Highway 314. The transportation analysis also included the railroad rights-of-ways in Montana along I-90 as which travel generally northwest until reaching the Idaho-Montana border and generally northeast until reaching the North Dakota-Montana border.

3.9.2 Issues and Analysis Methods

The issues analysis for transportation has examined the following:

- What would be the impacts on railroad safety and transportation?
- Would coal train traffic increase, for how long, and what impacts would an increase have on communities traversed?
- What impacts would coal transportation have on fugitive coal dust emissions from SCM and would it contribute to ballast fouling and increased derailments?

The proposed plan and the Surface Transportation Board, NTEC, and BNSF websites were accessed for information regarding coal dust emissions impacts from railway transportation.

3.9.3 Affected Environment

This section describes existing and future site roads, the railroad loop required to mine coal, railway access, and offsite roads.

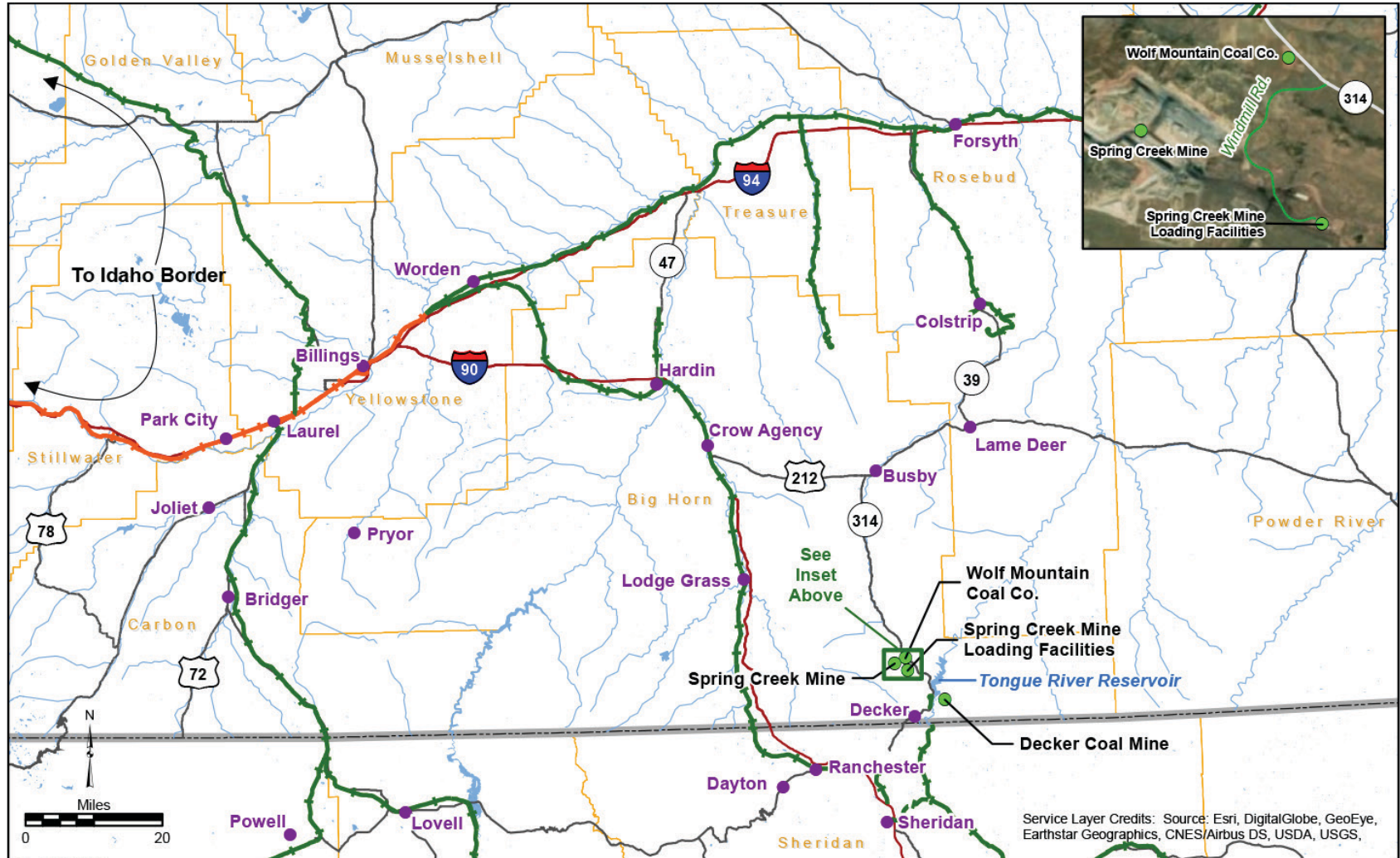
3.9.3.1 Regulatory Environment

Federal, State, and Local Requirements

DEQ regulates permitting and operation of surface coal mines on federal lands within Montana under the authority of MSUMRA (Section 82-4-221 *et seq.*, MCA) and its implementing regulations (ARM 17.24.301 *et seq.*). Requirements under MSUMRA include:

- Provisions for the relocation of use of public roads (ARM 17.24.319). Each mine application must describe the measures to be used to ensure that the interests of the public and landowners affected are protected if the applicant is seeking approval of: (1) conducting the proposed mining activities within 100 feet of the right-of-way line of each public road, except where mine access or haul roads join that right-of-way; or (2) relocating or closure of a public road
- Requirements to develop a transportation facilities plan (ARM 17.24.321); each mine application must contain a description of each road, conveyor, and railroad loop to be constructed, used, or maintained within the proposed permit area

Figure 3.9-1. Transportation Analysis Area



Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS,

Legend

- Mine
- City/Town
- Burlington Northern Santa Fe Railway
- Montana Rail Link
- Interstate
- US/State Hwy
- County
- Montana/Wyoming Border

Roads and Railroad Routes Used by Spring Creek Mine
Spring Creek Mine EIS

- General requirements for road and railroad loop construction (ARM 17.24.601)
- Requirements for the location of roads and railroad loops (ARM 17.24.602)
- Requirements for the location of roads and railroad loop embankments (ARM 17.24.603)
- Requirements to account and design for the hydrologic impact of roads and railroad loops (ARM 17.24.605)
- Requirements for the maintenance of roads and railroad loops (ARM 17.24.607)
- Provisions for permanent roads (ARM 17.24.610)
- Provisions for areas upon which coal mining is prohibited that address how to obtain permission to mine near public roads (ARM 17.24.1134); whenever a proposed mining operation is to be conducted within 100 feet measured horizontally to the outside right-of-way line of any public road (except where mine access roads or haul roads join such right-of-way), DEQ may permit mining to occur if the applicant
 - obtains the necessary approval of the authority with jurisdiction over the public road,
 - gives appropriate notice of a public hearing,
 - holds a public hearing with the purpose of determining whether the interests of the public and affected landowners will be protected, and
 - produces a written finding based on the information from the public hearing.
- Areas upon which coal-mining is prohibited that address the relocation or closure of a public road (ARM 17.24.1135); whenever any mine application proposes to relocate or close a public road to facilitate surface- or underground-mining operations, the road may not be relocated or closed until
 - the permit authorizing the operation is granted,
 - the applicant obtains the necessary approval from the authority with jurisdiction over the public road,
 - a notice of a public hearing in a newspaper of general circulation in the affected locale is provided at least two weeks before the hearing,
 - an opportunity for a public hearing at which any member of the public may participate is provided in the locality of the proposed mining operations for the purpose of determining whether the interests of the public and affected landowners will be protected, and
 - a written finding based upon information received at the public hearing is made within 30 days after completion of the hearing as to whether the interests of the

public and affected landowners will be protected from the proposed mining operations.

Provisions to mine near public roads or that address the relocation or closure of a public road would require approval from the authority with jurisdiction over the public road. The local regulatory framework is provided under MSUMRA, specifically in § 82-4-227(7)(d), MCA, and in its implementing rules at ARM 17.24.1134 and ARM 17.24.1135.

3.9.3.2 Site Roads and Railroad Loop

3.9.3.3 Existing and future site roads and the railroad loop required to mine coal as currently permitted at SCM have been designed using a Transportation Facilities Plan required by ARM 17.24.321. A report was prepared by a qualified professional engineer (PE) as required by ARM 17.24.601(8) stating that the roads and railroad loop were constructed or reconstructed in accordance with the approved plan. Railway Access

Most of the coal from SCM is transported by rail with a relatively small amount transported by truck to WMCC for local retail coal sales. Using the average production rate of 18 million tons per year (although production rates have been below this rate since 2014) and 15,000 tons of coal per train, an average of approximately 3 to 4 trains are loaded and shipped from SCM per day. Of the total coal mined per year, approximately 80,000 cubic yards (about 54,000 tons) per year are shipped to WMCC.

Under the current Coal Loading Rule (October 1, 2011), BNSF requires:

All shippers loading coal at any Montana or Wyoming mine to take measures to load cars in such a way that ensures coal dust losses in transit are reduced by at least 85% compared to cars where no remedial measures have been taken. The Coal Loading Rule also has a "safe harbor" provision stating that a shipper will be deemed to be in compliance with BNSF's Coal Loading Rule if it loads cars in compliance with BNSF's published Load Profile Template, and either (i) applies an approved in-transit dust suppressant agent to the loaded cars in the specified manner, or (ii) uses another method of coal dust suppression that, together with profiling, reduces coal dust losses in transit by the required 85 percent (BNSF and UP, 2010).

The effectiveness of surfactants was studied and summarized in a BNSF and Union Pacific (UP) Railroad Company Super Trial document (BNSF and UP, 2010). This document states:

Testing has demonstrated that profiling must be combined with additional measures to meet the 85% reduction requirement. In addition to proper load profiling, in-transit dust suppressant agents can be sprayed over the loaded coal by the shipper or its mine agent at the mine origin to keep the coal in place during transit.

Coal dust suppression follows a three-step process (CPE, 2018b) to maintain coal shipment integrity for coal shipped from SCM. First, a dust suppressant coats coal surfaces before loading. Coal is then loaded in an aerodynamic pattern. Finally, a neutral polymer, called a topper, is applied after loading to create a crust on the top surface of the coal. The spray is not hazardous or toxic and has been effective at keeping dust from leaving the coal cars during transit.

3.9.3.4 Offsite Roads

SCM employees and vendors utilize Montana Secondary Highway 314 to access the mine. According to information obtained from the Montana Department of Transportation (MDT, 2019), the AADT for 2013 through 2018 north of the SCM entrance was 261 vehicles (Traffic Count Site 02-7-2008) and south of the entrance was 581 vehicles (Traffic Count Site 02-8-001) for a difference of 320 vehicles. Also included in this stretch of the Highway 314 is the Tongue River Reservoir State Park access road, Tongue River Road, and the access road to Wolf Mountain Coal Company. The AADT difference from north and south of the SCM entrance includes the traffic related to SCM operations, WMCC operations, Tongue River Reservoir, and some possible local residential use. The traffic counts in and out of the State Park and WMCC are unknown but the annual visitor count for Tongue River Reservoir State Park in 2018 was 72,693 or 199 visitors per day.

3.9.4 Direct and Secondary Impacts

3.9.4.1 No Action Alternative

Under the No Action Alternative, most of the coal would continue to be shipped by rail, with an incidental amount by truck hauling, until all recoverable coal is mined in approximately 2027. The SCM operations would continue to average about 176 daily trips.

The potential for train derailments and truck accidents would continue. Even with fluctuations in the coal market, the railroad would maximize train traffic (Stephens, 2018) and the overall number of trains would remain constant independent of the number of coal trains.

BNSF coal dust mitigation measures would continue to be implemented but trains would continue to lose some amount of coal dust and this dust may contribute to ballast fouling and derailments (BNSF and UP, 2010).

Based on the analysis above, impacts on transportation from the No Action Alternative are expected to be secondary, long-term, and negligible.

3.9.4.2 Proposed Action Alternative

Under the Proposed Action Alternative, SCM would continue to ship coal for 4 more years.

Railway Access

Assuming coal transported by truck is inconsequential and using an estimated 15,000 tons of coal per train, the Proposed Action would result in 1,200 train trips per year or 3 to 4 train trips per day (one way) for 4 additional years. The estimated life of mine including the extended mining under the Proposed Action would depend on the coal market. It is assumed that BNSF would adjust other coal and non-coal train traffic up or down to account for varying frequency of coal trains from SCM to maximize track use (Stephens, 2018). Therefore, the number and frequency for all train traffic would not change (only the duration) and the waiting times for trains would also stay the same.

Site Roads and Railway

No new transportation buildings would be required to support the Proposed Action. However, some new site roads would be constructed as described in the future Transportation Facilities Plan of the application required under ARM 17.24.321. The roads would be constructed or reconstructed in accordance with the plan approved per ARM 17.24.321 and must be submitted to DEQ. Access and haul roads must be designed “according to sound engineering and construction practices” and must, to the extent possible, “not cause damage to fish, wildlife, and related environmental values and must not cause additional contributions of suspended solids to streamflow or to runoff outside the permit area or otherwise degrade the quantity or quality of surface or ground water” (ARM 17.24.601(2), (6)).

The potential for train derailments and truck accidents would continue for about 4 additional years. Even with fluctuations in the coal market, the railroad would maximize train traffic (Stephens, 2018) and the overall number of trains would remain constant and independent of the number of coal trains.

SCM coal dust would continue to emit from coal trains and foul railbed ballast for 4 additional years under the Proposed Action. However, BNSF requires mitigation measures and SCM has developed loading procedures to comply with BNSF’s requirements.

Based on the analysis above, the impacts on site roads, railroads, and other transportation factors (such as train derailments, truck accidents, and waiting for trains) from implementing the Proposed Action would be extended for 4 more years and would be short-term and negligible.

3.9.5 Unavoidable, Irreversible, and Irretrievable Impacts

No unavoidable, irreversible, or irretrievable adverse impacts related to transportation are anticipated for any of the alternatives.

3.10 VEGETATION AND RECLAMATION

This section presents vegetation and community types in the affected environment and discusses how the proposed disturbances and reclamation procedures are anticipated to impact these communities.

3.10.1 Analysis Area

The analysis area for vegetation and reclamation is the TR1 Project Area (**Figure 3.3-1**).

3.10.2 Issues and Analysis Methods

Several public comments related to vegetation and reclamation were received during scoping (DEQ, 2018c) and are provided below. The issues from the comments were used to guide the evaluation and comparisons of effects of the two alternatives.

- How are weed infestations surveyed and monitored? Would expanding the coal mine disturbance cause more weeds?
- What is the status of reclamation at SCM? Has there been a lack of success with final reclamation and bond release?
- How would the TR1 expansion effect reclamation schedules and time frames?
- How does ownership of SCM, which encompasses federal, state, and private lands, impact mining operations and future reclamation?
- What are the existing reclamation issues at SCM and is the mine in compliance with its obligations under federal and state mining laws?

3.10.3 Affected Environment

The affected environment is the TR1 Project Area and the other disturbed areas within the SCM permitted area that have not been reclaimed. The TR1 Project Area does not contain any areas designated as prime farmland or unique farmland (USDA, 2018).

Vegetation and community types are described below in Section 3.10.3.2, Existing Conditions. The TR1 Project would result in changes in the acreage of disturbance, sequence, and the timeline for reclamation. Plant species used for reclamation include a variety of seed mixes for alluvial, woodlands, scoria, upland shrub steppe, grassland, and temporary stockpiles. Seed mix variations depend on topographic and soil conditions at a given site. Common species among these seed mixes include western wheatgrass (*Agropyron smithii*), slender wheatgrass (*Elymus trachycaulus*), prairie clover (*Dalea spp.*), yarrow (*Achillea millefolium*), yucca (*Yucca glauca*), Wyoming Big Sagebrush (*Artemisia tridentata ssp. wyomingensis*), silver sagebrush (*Artemisia cana*), black greasewood (*Sarcobatus vermiculatus*), Ponderosa pine, and Rocky Mountain juniper (CPE, 2013).

3.10.3.1 Regulatory Environment

Federal Requirements

Vegetation resources in general are not regulated by federal agencies. Federally-listed threatened and endangered plant species are protected under the ESA, as amended under 16 USC 1531–1543 (Supp. 1996). No federally-listed or proposed special status species were identified in the TR1 Project Area (Westech Environmental Services, Inc., 2012).

State Requirements

MSUMRA (Section 82-4-233 and Section 82-4-235, MCA) and its implementing rules (Subchapters 3, 5, 6, 7, 8, and 11 of the ARM) include regulations applicable to vegetation, including requirements for baseline investigations, requirements for reclamation and revegetation, protection of federally threatened and endangered species, and conditions for bond release. MSUMRA in particular requires each application to contain a fish and wildlife plan describing how the project will minimize disturbances and adverse impacts (including habitat impacts to aspects of the landscape such as vegetation) on fish, wildlife, and related environmental values during mining and reclamation operations (ARM 17.24.312(1)(a)). Applicants are required to explain how they will use impact control measures, management techniques, and annual monitoring methods to protect or enhance habitats of unusually high value for fish and wildlife (ARM 17.24.312(1)(d)(iii)). SCM must ensure reclamation will provide for habitat needs of various wildlife species in accordance with the approved postmining land use, with plant groupings distributed to fulfill fish and wildlife requirements (ARM 17.24.312(1)(e)).

Noxious weeds are managed under the Montana County Weed Control Act, as implemented under MSUMRA (ARM 17.24.308). The act states, “It is unlawful for any person to permit any noxious weed to propagate or go to seed on the person’s land, except that any person who adheres to the noxious weed management program of the person’s weed management district or who has entered into and is in compliance with a noxious weed management agreement is considered to be in compliance with this section.” Section 7-22-2116, MCA.

Local Requirements

There are no applicable local regulations for vegetation resources within or near the analysis area.

3.10.3.2 Existing Conditions

Baseline vegetation studies were completed in 1990 and 1991 for the South Fork Expansion (Bighorn Environmental Quality Control); 1998 for the Carbone Expansion (Bighorn Environmental Quality Control); 2007 for the Pearson Creek Area (Bighorn Environmental Sciences); and in 2012 for the Amendment Areas A and B (Westech Environmental Services, Inc., 2012) (CPE, 2017). The Baseline Vegetation Inventory for SCM differentiates the local

mining region into six primary community types including grassland, special-use pasture, shrub/grassland, shrub-dominated breaks, conifer-dominated breaks, and ponderosa pine-juniper forest/savannahs (Westech Environmental Services, Inc., 2012).

Much of the TR1 Project Area occurs in the Pearson Creek area, which is characterized by stands of Wyoming big sagebrush, bluebunch wheatgrass (*Agropyron spicatum*), western wheatgrass, little bluestem (*Andropogon scoparius*), silver sagebrush, winterfat (*Ceratoides lanata*), and black greasewood. Annual brome grasses are common in some areas of the drainage, as are a limited number of open and closed canopy forested areas. A single area of crested wheatgrass was found in Section 31 and was likely planted in an old prairie dog town.

The most common shrub/grassland community within the Pearson Creek area is the Wyoming big sagebrush/bluebunch wheatgrass community which grows on gentle to moderate slopes and ridges. The second most common plant community is the Wyoming big sagebrush/western wheatgrass communities. Plant communities that occupy the breaks or dissected badlands with moderate to steep slopes are the Wyoming big sagebrush/shadscale saltbush (*Atriplex confertifolia*) community, rubber rabbitbrush (*Chrysothamnus nauseosus*)/bluebunch wheatgrass associations (shrub-dominated), and the Rocky Mountain juniper/Ponderosa pine associations (conifer-dominated). Ponderosa pine and juniper forests are the only forest types occurring within the analysis area. The least common plant community type in the Pearson Creek area is the needle-and-thread (*Stipa comata*)/western wheatgrass grasslands (Westech Environmental Services, Inc., 2012).

Weeds were found in limited degrees in all plant communities. Weeds included noxious non-native species, non-noxious non-native species, and native invasive species prone to occur on disturbed sites. Canada thistle (*Cirsium arvense*), which is a Montana noxious weed, is present in existing reclamation areas throughout SCM. Non-native invasive species include cheatgrass (*Bromus tectorum*) and kochia (*Kochia scoparia*). Native disturbance-prone species present includes tansymustard (*Descurainia pinnata*) (CPE, 2017).

Sensitive habitats were evaluated within the SCM TR1 permit boundary. No federally-listed or proposed special status species were identified; however, two species of concern are listed by the Montana Natural Heritage Program (Westech Environmental Services, Inc., 2012) including Barr's milkvetch (*Astragalus barrii*) [G3 S3]¹ and woolly twinpod (*Physaria didymocarpa* var. *lanata*) [G5T2 S2S3]². No jurisdictional wetlands or waters of the U.S. exist as defined by USACE.

¹ G3 S3 - Potentially at risk because of limited and/or declining numbers, range and/or habitat, even though it may be abundant in some areas. (<http://mtnhp.org/>)

² G5 - Common, widespread, and abundant (although it may be rare in parts of its range). Not vulnerable in most of its range; T2 – Rank of subspecies is at risk because of very limited and/or potentially declining population numbers, range and/or habitat, making it vulnerable to global extinction or extirpation in the state; S2 S3 - Indicates a range of uncertainty about the status of the species between 2 and 3. (<http://mtnhp.org/>)

Stock ponds and water impoundments with wetland soils, plants, and hydrology are present, but they are not considered jurisdictional because they either lack a continuous ordinary high-water mark or do not have a continuous nexus to other waters of the U.S. (USACE, 2016).

3.10.4 Direct and Secondary Impacts

3.10.4.1 No Action Alternative

Under the No Action Alternative, the Project would not be approved and SCM's disturbance area would not be revised to allow disturbance on the 977 acres. No additional impacts to vegetation and reclamation would be expected from the No Action Alternative, but overall secondary, short-term, and moderate impacts would be expected from the No Action Alternative.

3.10.4.2 Proposed Action Alternative

All disturbed areas must be managed for weeds thus SCM prepares a weed management plan and annual mining reports that include their vegetation monitoring methods and results. Increasing the disturbed area could cause a temporary increase in some additional weeds depending on the weed abundance in the topsoil salvage area. Some reclaimed areas contained minor outbreaks of thistle (*Cirsium spp*)³, and nearly every reclamation site had some cheatgrass⁴ and kochia. The abundance of annuals and noxious weeds in some reclaimed areas could be less numerous compared to the premine areas because of the strict revegetation criteria for bond release. SCM manages weed outbreaks per ARM 17.24.718 through disking and reseeding where applicable, and spraying various herbicides until native perennial grasses, shrubs, or woody species become established. Herbicides used include Roundup®, Plateau®, and Dicamba® + 2,4-D (CPE, 2017).

SCM provides a detailed inventory of noxious and non-noxious weed infestations for each of the reclamation areas within the Surface Mine Permit boundary.

The direct impact from the Proposed Action Alternative would be additional weed infestations that would require monitoring and treatment. Direct impacts would occur throughout mining operations until the areas are successfully reclaimed.

Table 3.10-1 provides a basis for understanding the status of reclamation.

³ Canada thistle (*Cirsium arvense*) is a Priority 2B noxious weed in Montana indicating that these weeds are abundant in Montana and widespread in many counties. Management criteria requires eradication or containment in some areas (<http://mtnhp.org/>).

⁴ Cheatgrass is a Priority 3 non-noxious but regulated plant in Montana indicating that it has the potential to cause significant negative impacts in the state. These plants may not be intentionally spread or sold other than as a contaminant in agricultural products (<http://mtnhp.org/>).

**Table 3.10-1
Reclamation Status (No Action and Proposed Action)**

Item	No Action (Acres)	Proposed Action (Acres)
Total permit boundary	9,220	9,220
Total life of mine proposed disturbance	6,134	7,111
Current disturbed	4,879	4,879
Current Phase I bond release	1,284	1,284
Current Phase II bond release	1,017	1,017
Current Phase III bond release	407	407
Total to be reclaimed between 2015 and 2019	1,124	1,124
Total acres to be reclaimed between 2020 and 2024 (estimated)	1,501	1,501
Total acres to be reclaimed between 2025 and 2029 (estimated)	1,033	1,521
Total acres to be reclaimed between 2030 and 2034 (estimated)	1,814	2,303

Acres to be reclaimed during periods 2020 to 2024 and 2025 to 2029 are approximately 400 acres more than the 1,124 acres to be reclaimed from 2015 to 2019. SCM provides updated disturbance and reclamation acreage to DEQ in their annual reports and reclamation goals are adjusted as necessary.

The SCM mine plan would continue to expand outward and away from the main mine facilities and would need roads and other disturbances through some previously mined areas. Phase IV bond release can only be achieved after all mining and reclamation operations have ceased in that area or drainage. Thus, the largest blocks of reclamation would occur after 2031 when mining has ceased.

A direct impact from the Proposed Action Alternative would be the longer time until roadway areas are moved to higher reclamation phases. A secondary impact would be the additional time some areas are left disturbed and the longer time until these areas meet their intended postmine land use to provide wildlife habitat.

Criteria and schedule for reclamation are outlined in ARM 17.24.1116, which describes what constitutes each phase of reclamation required for bond release. Requirements which constitute successful revegetation for final bond release is outlined in § 82-4-235, MCA. Currently, 4,875 acres at SCM have been disturbed. The Proposed Action would increase the mine disturbance area by 977 acres but would not increase the Surface Mining Permit area.

The Proposed Action would have no direct impacts on SCM's adherence to MSUMRA and SCM would continue to meet their reclamation schedules and time frames. The Proposed Action would result in a longer period for final establishment of vegetation, even though reclamation would continue throughout the life of the mine.

The majority of the TR1 Area surface acres are privately owned (**Table 3.5-3**). Coal and other resources (oil and gas) are owned by the State and Federal governments and coal is leased by

SCM. For the privately-owned property, land use agreements have been executed between the private land owners and SCM for all land in the Permit Boundary. There would be no change in the land use agreements.

There would be no direct or secondary impacts from the Proposed Action on land ownership.

The existing reclamation issues, including weed management, expanded reclamation requirements, and delays in final reclamation and schedules, were discussed above. SCM has received four violations since 2006 but only one violation in 2008 was relevant to reclamation. On March 3, 2008, the mine seeded two areas totaling 8.7 acres with seed mixes not approved for those areas. The seed mixes used in those areas were in compliance with the not-yet approved application.

SCM's violations are on DEQ's ePermitting Public Portal (<http://svc.mt.gov/deq/myCOALPublic/home/index>).

Based on the analysis above, impacts on vegetation and reclamation from the Proposed Action are expected to be both direct (on the SCM at time of disturbance) and secondary (off the SCM and at a later time), long-term, and moderate.

3.10.5 Unavoidable, Irreversible, and Irretrievable Impacts

There would be unavoidable and adverse impacts to vegetation resources for the Proposed Action Alternative from the physical removal of the vegetation and disturbance of the 977 acres. Impacts to vegetation would remain through mining, but reclamation plans and past vegetation reclamation success at SCM demonstrated the vegetation communities would be reestablished. Sagebrush and other shrub components of designated wildlife postmining land use plantings typically would take longer to grow and fully reestablish compared to the grass and forb species used for the grazing or pasture lands revegetation mixtures.

3.11 WATER

3.11.1 Analysis Area

The analysis area for surface water and surface water rights includes the drainage basins of Spring Creek, South Fork of Spring Creek, Pearson Creek and the South Fork of Pearson Creek from just upstream of the proposed SCM permit boundary to and including the Tongue River Reservoir. The analysis area for ground water and ground water rights includes a 3-mile buffer around the proposed SCM permit boundary and includes the West Decker Mine and the intervening area between SCM and West Decker and intervening area between West Decker and the Tongue River Reservoir. These analysis areas were selected so as to be consistent with analysis areas being used to evaluate cumulative hydrologic impacts.

3.11.1.1 Issues and Analysis Methods

The primary surface and ground water issues were summarized into the following issues:

- What would be the impacts on ground water and surface water quantity and availability to Pearson Creek, Spring Creek, the Tongue River Reservoir, and other receiving and downstream waterways? The impacts to surface water and ground water quantity were estimated using either published ground water modeling information or published records of surface water flow.
- What would be the impacts to ground and surface water quality, including salinity, EC, and TDS? Impacts to ground and surface water quality were estimated using published records of water quality and published water quality prediction calculations.
- What are impacts to surface and ground water from previous coal mining and coal-bed methane development? Impacts from coal mining and coal bed methane development are analyzed in Section 4 under Cumulative Impact Analysis.

3.11.2 Affected Environment

3.11.2.1 Regulatory Environment

Federal Requirements

Federal surface water quantity and quality regulations applicable to the TR1 Project Area include the Clean Water Act of 1972 and National Pollutant Discharge Elimination System (NPDES) program for point sources. The Clean Water Act requires federal agencies to “restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.” (33 U.S.C. §§ 1251-101[a]). EPA has delegated authority to the DEQ to administer the Clean Water Act and NPDES program within the State of Montana.

State Requirements

State surface water quantity and quality regulations applicable to the TR1 Project Area include:

- Montana Clean Water Act (§§ 75-5-101, MCA, *et seq.*)
- MSUMRA (§§ 82-4-201, MCA, *et seq.*)
- MPDES (ARM 17.30.1201 *et seq.*)

State surface water quantity and quality regulations applicable to the analysis area include MSUMRA, which contains reclamation requirements to protect the hydrologic balance and achieve postmine land use performance standards. Hydrologic balance is defined as the relationship between the quality and quantity of water inflow to, water outflow from, and water storage in a hydrologic unit such as a drainage basin, aquifer, soil zone, lake, or reservoir, and encompasses the dynamic relationships among precipitation, runoff, evaporation, and changes in ground water and surface water storage per § 82-4-203(24), MCA. The Montana Water Quality Act, which prevents degradation of surface and ground waters due to discharges of mine wastewater and storm water, is also applicable. Both MSUMRA and the Montana Water Quality Act are discussed in more detail below.

MSUMRA conditions approval of an application for a coal mine operating permit on demonstration by the applicant that “the assessment of the probable cumulative impact of all

anticipated mining in the area on the hydrologic balance has been made by the department [DEQ] and the proposed mining operation has been designed to prevent material damage to the hydrologic balance outside the permit area” under § 82-4-227(3)(a), MCA, and ARM 17.24.405(6)(c). MSUMRA defines “material damage” as follows: “with respect to protection of the hydrologic balance, degradation or reduction by coal mining and reclamation operations of the quality or quantity of water outside of the permit area in a manner or to an extent that land uses or beneficial uses of water are adversely affected, water quality standards are violated, or water rights are impacted. Violation of a water quality standard, whether or not an existing water use is affected, is material damage.”

The permit application must contain a detailed description of the “measures to be taken during and after mining activities to minimize disturbance to the hydrologic balance on and off the mine permit area and prevent material damage to the hydrologic balance outside the permit area” under ARM 17.24.314(1). Material damage criteria are established for the evaluation of both surface and ground water quality and quantity, and are used to determine whether water quality or quantity outside the permit area will be impacted to the extent that land uses or beneficial uses of water are adversely affected, water quality standards outside the permit area will be violated, or water rights outside the permit area will be impacted by the proposed mine operations.

An approved application for a coal mine operating permit allows adverse effects on water quality and quantity within the permit boundary as long as the proposed mining includes measures to minimize disturbance on and off the mine plan area and to prevent material damage to the hydrologic balance outside the permit area (ARM 17.24.314(1)). If mining operations impact a water right outside the permit boundary, the implementing rules of MSUMRA (ARM 17.24.648) unconditionally require an operator to provide replacement water. MSUMRA requires that an operator replace the water supply of any owner of interest in real property who obtains all or part of his water supply for domestic, agricultural, or other uses from surface or ground water if such supply has been affected by contamination, diminution, or interruption proximately resulting from mine operations.

Surface Water

The rules implementing MSUMRA (ARM 17.24.301 through 1309) provide requirements to protect water quality and quantity, including water quality performance standards and the use of best technology currently available (BTCA) to protect water resources. The regulations also require surface water monitoring and reporting.

DEQ administers several sections of the Clean Water Act pursuant to an agreement between the state and EPA. DEQ developed water quality classifications and standards, as well as a permit system to control discharges into state waters. Mining operations must comply with Montana’s regulations and standards for surface water and ground water. Montana Pollutant Discharge Elimination System (MPDES) permits are required for point source discharges of

wastewater to state surface water and regulate discharged pollutants of concern. The limits and requirements in the MPDES permit help ensure compliance with Montana's Water Quality Standards and other state and federal regulations to protect public health and the aquatic environment.

Section 303(d) of the Clean Water Act requires states to assess the condition of state waters to determine where water quality is impaired (does not fully support uses identified in the stream classification or does not meet all water quality standards) or threatened (is likely to become impaired in the near future). The result of this review is the compilation of a 303(d) list, which states must submit to EPA biannually. Section 303(d) also requires states to prioritize and target water bodies on their list for development of water quality improvement strategies, and to develop such strategies for impaired and threatened waters such as Total Maximum Daily Loads (TMDLs). A TMDL (40 CFR 130.7) is a pollution budget that includes a calculation of the maximum amount of a pollutant that can occur in a waterbody, and allocates the necessary reductions to one or more pollutant sources. A TMDL serves as a planning tool and potential starting point for restoration or protection activities with the ultimate goal of attaining or maintaining water quality standards).

In Montana, non-point source pollution is addressed through voluntary management practices and through Stormwater Permits issued by DEQ. DEQ regulates discharges of stormwater from industrial activity through Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity under the MPDES permit system.

Ground Water

DEQ regulates permitting and operation of surface coal mines on federal lands within Montana under the authority of MSUMRA (§§ 82-4-221, MCA, *et seq.*) and its implementing rules (ARM 17.24.301- 1309). Subchapter 6, ARM 17.24.605, 631, 632, 635, 641, 643, 644, and 645 provide specific requirements to protect the quantity and quality of ground water. These requirements cover ground water levels, ground water recharge, protection of ground water rights, and ground water quality. The regulations require control of mine drainages to protect ground water and placement of backfill materials to minimize adverse effects on ground water flow and quantity. The regulations state that disturbed areas must be reclaimed to restore the approximate pre-mine recharge capacity to support the approved postmining land use (ARM 17.24.644), and disturbances to the prevailing hydrologic balance in the mine area and adjacent areas must be minimized (ARM 17.24.605, 631, and 645). ARM 17.24.314 requires submittal of a plan for protection of the hydrologic balance, including water quantity and quality, and water rights. In addition, the regulations describe required ground water monitoring (ARM 17.24.645).

MSUMRA conditions approval of an application for a coal mine operating permit on demonstration by the applicant that "the assessment of the probable cumulative impact of all anticipated mining in the area on the hydrologic balance has been made by the department [DEQ] and the proposed operation of the mining operation has been designed to prevent

material damage to the hydrologic balance outside the permit area” under § 82-4-227(3)(a), MCA, and ARM 17.24.405(6)(c). MSUMRA defines “material damage” as follows: “with respect to protection of the hydrologic balance, degradation or reduction by coal mining and reclamation operations of the quality or quantity of water outside of the permit area in a manner or to an extent that land uses or beneficial uses of water are adversely affected, water quality standards are violated, or water rights are impacted. Violation of a water quality standard, whether or not an existing water use is affected, is material damage.” The permit application must contain a detailed description of the “measures to be taken during and after mining activities to minimize disturbance to the hydrologic balance on and off the mine permit area and prevent material damage to the hydrologic balance outside the permit area” under ARM 17.24.314(1). Material damage criteria are established for the evaluation of both surface and ground water quality and quantity, and are used to determine whether water quality or quantity outside the permit area will be impacted to the extent that land uses or beneficial uses of water are adversely affected, water quality standards outside the permit area will be violated, or water rights outside the permit area will be impacted by the proposed mine operations.

Water Rights

The Montana Water Use Act requires that any person, agency, or government entity intending to acquire new or additional water rights or to change an existing water right in the state obtain a beneficial water use permit or change authorization before commencing to construct a new or additional diversion, withdrawal, impoundment, or water distribution works for appropriations of ground water or surface water. The Montana Water Use Act gives authority to administer water rights in the state of Montana to the Montana Department of Natural Resources and Conservation, Water Resources Division, Montana Water Rights Bureau (Water Rights Bureau). The Water Rights Bureau assures the orderly appropriation and beneficial use of Montana’s waters. The Water Rights Bureau administers the Montana Water Use Act and assists the Water Court with the adjudication of water rights.

DEQ regulates permitting and operation of surface coal mines on federal lands within Montana under the authority of MSUMRA (Section 82-4-221 et seq., MCA) and its implementing rules (ARM 17.24.301- 1309). ARM 17.24.648 requires that SCM replace the water supply of any owner of interest in real property who obtains all or part of his water supply for domestic, agricultural, or other uses from surface or ground water if such supply has been affected by contamination, diminution, or interruption proximately resulting from mine operations.

Local Requirements

There are no applicable local regulations for surface or ground water resources within or near the analysis area. There are no local water rights requirements because water rights are regulated and protected at the state and federal level.

3.11.2.2 Existing Conditions

Ground Water

Ground water occurs in various aquifers throughout the area of analysis including in the overburden, A-D coal and underlying Canyon Coal, interburden, and alluvium. The coal and alluvial aquifers are generally the most important sources of water in the area.

Ground water recharge occurs typically to the west of the SCM in outcrops in the Wolf Mountains. Ground water typically flows to the east and discharges to the Tongue River Reservoir east of SCM.

The primary shallow aquifer within the SCM permit area is the Anderson-Dietz coal seam (SCC and WWC Engineering, 2017). Ground water in the A-D coal is typically a sodium sulfate-bicarbonate type with high sodium absorption ratios.

Measured TDS in coal aquifers varies, with a median of about 1,840 milligrams per liter (mg/l) in the A-D coal and a maximum of 13,100 mg/l. The Canyon Coal aquifer contains slightly less dissolved solids with a median of 1,050 mg/l and a maximum of 5,000 mg/l (SCC and WWC 2017, **Table 4.2.3-3**). Spoils, which have replaced the mined A-D coal and have become resaturated, have variable TDS concentrations with a median of 4,540 mg/l and a maximum of 7,440 mg/l. Until flushing, adsorption/desorption, precipitation/dissolution and other complex geochemical processes reduce TDS in the spoils ground water reconnected through the spoils will deliver higher TDS loads to downstream receiving waterways (namely Tongue River Reservoir).

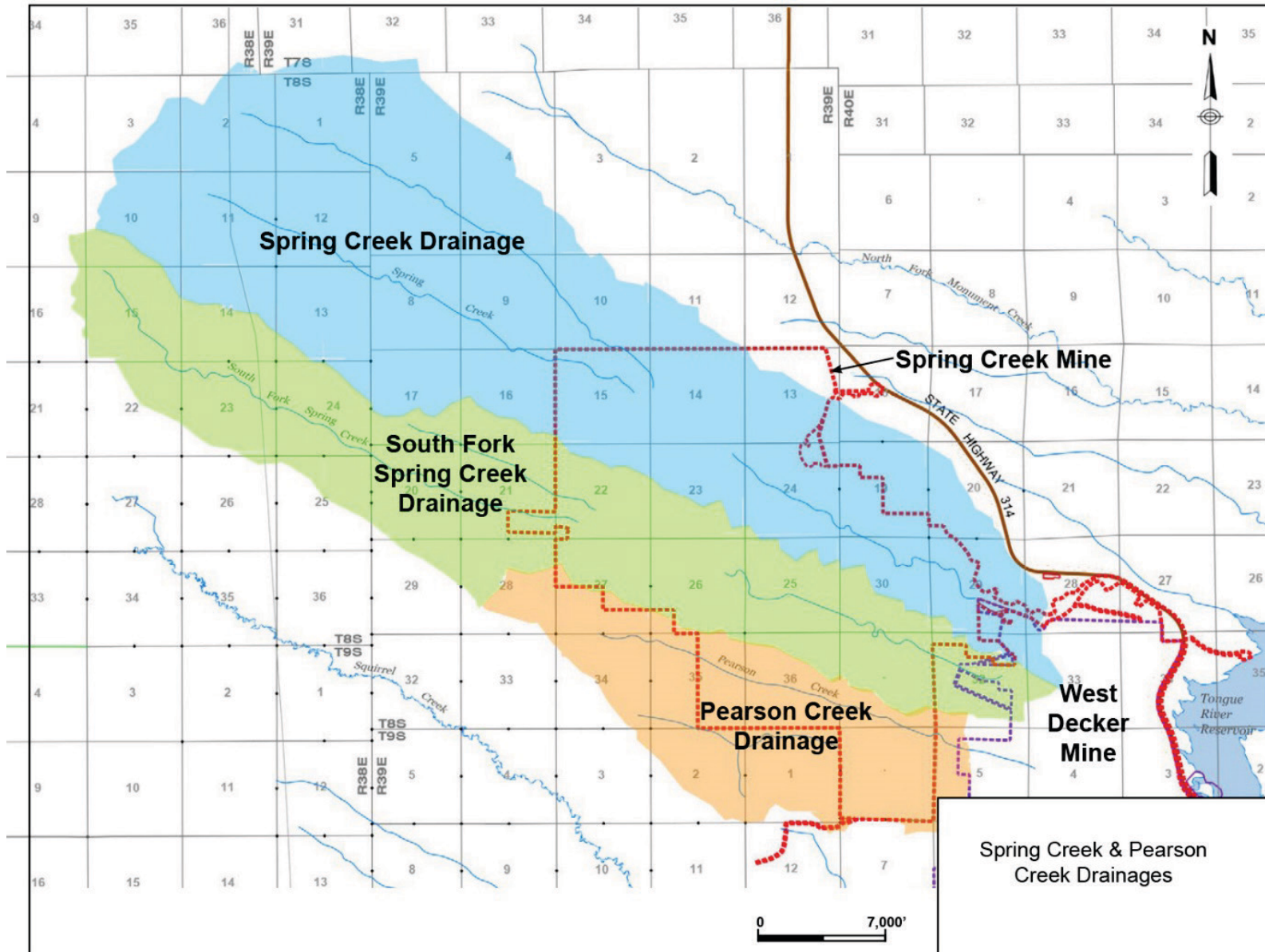
Historic mining at SCM has interrupted the flow of ground water in the A-D coal by excavating the coal. In some portions of the SCM, spoils have already been used to backfill the excavation and a new spoils aquifer is beginning to form where the mined A-D coal aquifer was previously. Similarly, the West Decker Mine has disturbed the underlying A-D coal aquifers. The A-D coal aquifer (which occurs as separate Anderson and Dietz (1 & 2) coal beds in the vicinity of West Decker Mine) have been removed by mining and replaced with spoil in the West Decker permit areas.

Ground water that appears in the mined A-D coal is typically collected and used for dust control or other process water. The existing West Decker Mine, located southeast of the SCM between Tongue River Reservoir and SCM, has also mined the A-D coal and interrupted the flow of the ground water in that vicinity.

Surface Water

The ephemeral streams within the SCM permit area are Spring Creek, South Fork of Spring Creek, and Pearson Creek (**Figure 3.11-1**). Of these, mining under the existing permit occurs in the Spring Creek, South Fork of Spring Creek, and Pearson Creek drainages. The TR1 Project would allow SCM to mine additional coal in the Pearson Creek drainage and to expand coal

Figure 3.11-1. Spring Creek and Pearson Creek Drainages



mining into the South Fork of Pearson Creek drainage. Downstream of SCM, existing West Decker Mine has mined across all these streams and currently capture any runoff in their MPDES ponds.

Spring Creek, South Fork of Spring Creek, and Pearson Creek, and South Fork of Pearson Creek meet the hydrological definition for ephemeral streams (ARM 17.30.602[10]) with flow only as a result of rainfall and snowmelt runoff (SCC and WWC 2017, Pg. L-14). Surface water quality is variable within the SCM permit area but is typically characterized as a calcium/magnesium/sodium sulfate type. Surface water has been sampled and tested for various analytes. TDS ranges from lows of about 60 mg/l to a high of 2,120 mg/l upgradient of mining. Mined out and reconstructed drainages exhibit higher TDS (median of approximately 1,560 mg/l; maximum of approximately 3,350 mg/l). Surface water samples frequently had trace metal concentrations (particularly iron and aluminum) higher than applicable water quality criteria (ibid, **Table 4.1.3-1**).

The West Decker Coal Mine has disturbed lower Pearson Creek as it approaches Tongue River Reservoir and currently captures surface water from Pearson Creek in the Pearson Creek Flood Control Reservoir. At times, the West Decker Coal Mine discharges water from its storm water ponds to the Tongue River Reservoir under the terms of their MPDES permit.

Both Pearson Creek and the A-D aquifer historically delivered water to the Tongue River Reservoir, an important recreational water body and water supply reservoir for irrigation, along the Tongue River in Montana. **Figure 3.11-1** shows the location of these drainages and their relationship to SCM, West Decker Mine and Tongue River Reservoir.

Surface water and ground water monitoring networks have been established at the SCM and Decker mines to observe the effects of mining, mitigation measures, and restoration of the hydrologic system (SCC and WWC Engineering, 2017). The results of this monitoring program are submitted semi-annually to DEQ.

3.11.3 Direct and Secondary Impacts

3.11.3.1 No Action Alternative

Under the No Action Alternative, SCM would continue to mine and process coal within the current permit area. Existing ground water monitoring consists of regular periodic monitoring and maintenance of water wells within SCM's currently-active ground water monitoring network. Surface water monitoring involves regular periodic monitoring and maintenance of SCM's surface water monitoring and sampling sites. With No Action, these would continue to be monitored until the final bond release.

Surface Water Quantity

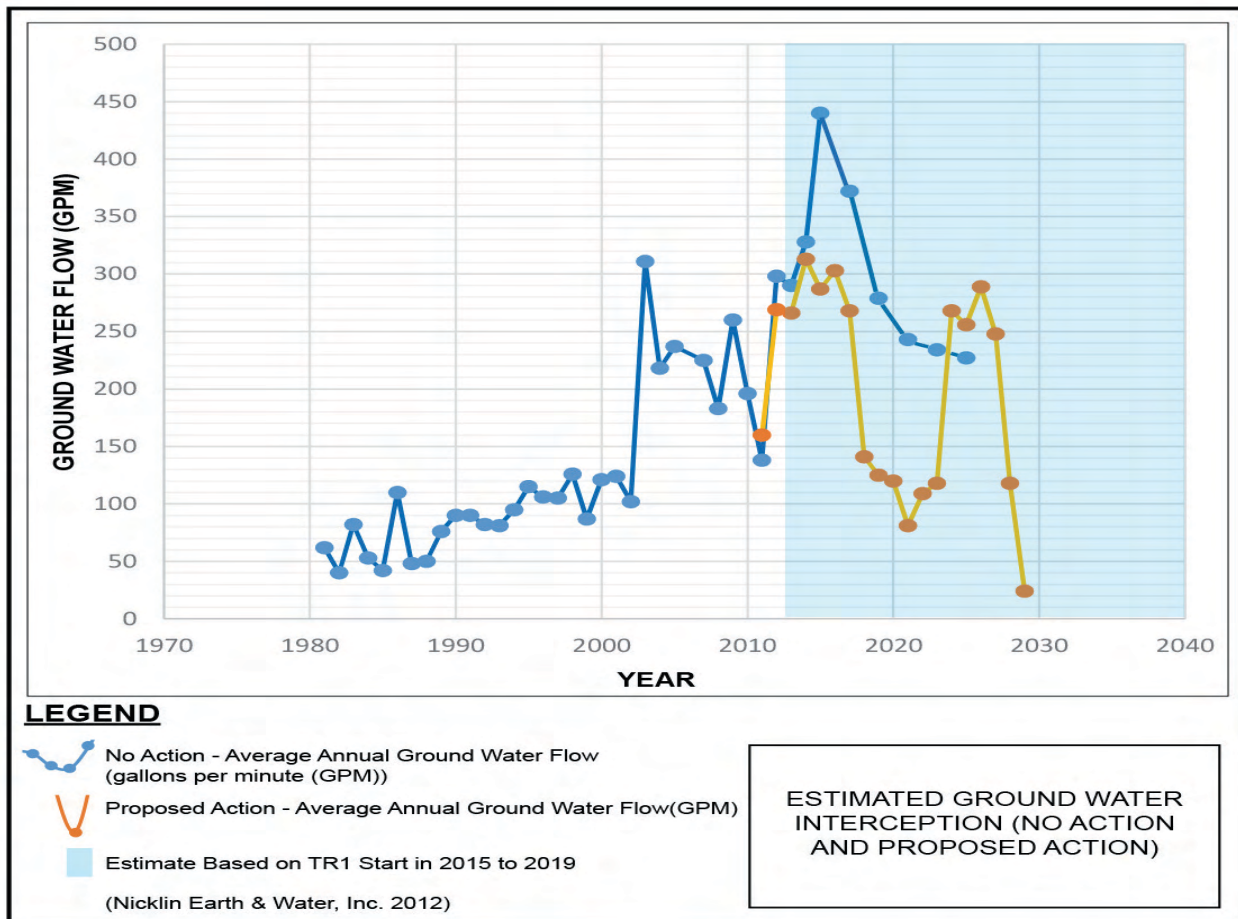
During mining surface water runoff patterns are altered significantly. Runoff from upgradient areas in Spring Creek and Pearson Creek, for example, no longer flows through and across the

mining area but is captured internally within the mining area in pits and stormwater ponds. Runoff that occurs internally from within the mining area is similarly captured. When runoff from larger rainfall or snowmelt events exceeds the holding capacity of internal pits and stormwater ponds, it potentially could flow downgradient toward the West Decker Mine where it is intercepted and captured in pits and ponds there. Stormwater captured in pits or ponds is used by mines for dust control. Natural processes such as evaporation and infiltration into groundwater also result in the elimination of collected stormwater from pits and ponds. This interruption of surface water runoff patterns during mining produces direct impacts on the Tongue River Reservoir and other receiving waterways from the No Action Alternative. These impacts include the reductions in the surface flow from the Spring Creek and South Fork Spring Creek and from Pearson Creek as shown in **Figure 3.11-1**. It is estimated that Spring Creek and South Fork of Spring Creek would have contributed a total of 402 acre-feet per year on average to the Tongue River Reservoir while Pearson Creek would have contributed an estimated 2.2 acre-feet per year (SCC and WWC, 2017, pg. L-73). These direct impacts would continue until mining and reclamation at both SCM and the West Decker Mine is complete and Spring Creek and South Fork Spring Creek and Pearson Creek are reconnected to flow downstream towards the Tongue River Reservoir. Following this reconnection, surface water contribution to the Tongue River Reservoir should return to the premining rates and volumes noted above.

Ground Water Quantity

Water bearing strata are dewatered during mining by excavation and removal of overburden and coal seams. Ground water issuing from the removed strata is collected and intermixed with surface water in pits and ponds within the permit area. As with collected surface water, ground water in pits and ponds is used for dust control, evaporates from the ponds or infiltrates into the underlying groundwater. In extreme cases, intermixed surface and groundwater may be discharged toward the downgradient West Decker Mine where it is similarly captured in pits and ponds. Ground water modeling of the existing permit mining (No Action) indicates the amount of groundwater captured varies considerably over the life of the mine from under 100 gallons per minute (gpm) in the early life of the mine rising to a maximum of approximately 440 gpm during 2015 (Nicklin, 2005) and then tapering off to approximately 227 gpm by 2025 (see **Figure 3.11-2**).

Following backfill of mine pits with spoils, groundwater from upgradient recharge areas is expected to flow into the former mine pits and resaturate spoils and create a new aquifer across the mined area. Recovery of the groundwater levels in the newly created aquifer is expected to take place slowly so that within about 50 years, levels mostly meet or exceed premining levels. However, groundwater underlying the Pearson Creek area could still be up to 6 feet lower than premining levels 50 years after mining (Nicklin, 2012).

Figure 3.11-2. Estimated Ground Water Interception (No Action and Proposed Action)

Following resaturation of the spoil aquifers (both at SCM and at the downgradient West Decker Mine) groundwater flow rates toward discharge areas along the Tongue River Reservoir should return to pre-mining rates.

Some existing wells could be impacted by drawdowns in groundwater produced by the No Action Alternative.

Based on the analysis above, impacts on surface water from the No Action Alternative are expected to be short-term and minor. Impacts on ground water would be long-term and moderate.

3.11.3.2 *Proposed Action Alternative*

Surface Water Quantity

The Proposed Action affects surface water flow in the Pearson Creek drainage area which ultimately would flow to the Tongue River Reservoir. Currently, Pearson Creek surface water flows do not directly reach the Tongue River Reservoir because they are intercepted both upgradient of the currently-permitted mining in Pearson Creek and downgradient at the West

Decker Mine. Surface water would continue to be captured in Pearson Creek at the current locations under the Proposed Action Alternative, but would be captured for approximately four additional years compared to the No Action Alternative. As mining for the TR1 Project expands into the South Fork of Pearson Creek, it too would be captured within the TR1 disturbance and presumably used for dust control and other uses on the SCM. Consequently, less surface flow from the South Fork of Pearson Creek would arrive at the West Decker Mine and less may be discharged to the Tongue River Reservoir.

Direct impacts from the Proposed Action would occur in the TR1 area. These impacts could result in less surface water reaching the West Decker Mine and possibly less water being discharged from the West Decker sediment control ponds to the Tongue River Reservoir. The Proposed Action would result in the South Fork of Pearson Creek being mined through and no longer flowing to the Pearson Creek Flood Control Pond at the West Decker Mine. The Proposed Action also captures Pearson Creek flows and prevents them from flowing downstream for a longer period than would occur under the No Action Alternative. Pearson Creek is estimated to contribute 2.2 acre/feet per year on average to the Tongue River Reservoir since monitoring began on this tributary in 2006 (SCC and WWC Engineering, 2008; SCC and WWC Engineering, 2017). These direct impacts would continue until a future date when the Pearson Creek and South Fork Pearson Creek channels are reconnected through the disturbed area.

Ground Water Quantity

The Proposed Action affects ground water contributions to the Tongue River Reservoir by cutting off ground water flow in the A-D coal seam through the mined area. Other aquifers would also be cut off by the Proposed Action but the ground water flow in the other aquifers would be minimal. With the TR1 mining, direct impacts include the interception of ground water as the A-D coal seam is excavated. Secondary impacts would continue to occur after mining and reclamation as the spoils aquifer is resaturated. These secondary impacts would slowly taper off following reclamation. As shown in **Figure 3.11-2**, the peak predicted ground water interception in the remaining life of the SCM with the TR1 Proposed Action is approximately 314 gpm (Nicklin, 2012).

The Proposed Action would also affect ground water levels in underlying aquifers. It is predicted (Nicklin 2012, Figure 21) that ground water levels in the TR1 Project Area would decrease over those predicted for the existing permit by as much as 20 feet at the conclusion of mining in 2025 in the spoils that replace the A-D Coal. The change in ground water levels over the existing permit area caused by the TR1 Project would be relatively small. These changes would persist into the future. Within the TR1 Project Area 50 years after mining ceases, there would still be higher drawdowns by a little less than 7 feet more than drawdowns created by the existing permit. Similarly, drawdowns in the underlying Canyon Coal aquifer would increase by up to 2 feet more than those created by the existing permit in the TR1 Project Area at the conclusion of

mining and these increased drawdowns would persist into the future at least 50 years after mining ceases.

Wells may also be impacted by the proposed action. An inventory of private wells and springs (SCC and WWC, 2017) identified about 36 wells and springs within a zone in which drawdowns from the proposed action are greater than those from the no action alternative. Of those, approximately 13 could be impacted by drawdown from the proposed TR1 Project while the remainder would likely not be impacted. **Table 3.11-1** lists the potentially affected wells.

Table 3.11-1
Wells Potentially Impacted by Increased Drawdown from the Proposed Action

DNRC Water Right No.	GWIC Designation	Owner	Location		
			Township	Range	Section
	198207	SCHOOL HOUSE WELL	T 8 S	R 38 E	12
	266391	JOHN YOUNG* TRAILER	T 8 S	R 39 E	1
	8064	YOUNG, JOHN	T 8 S	R 39 E	2
42B 30003468		HAMILTON TRUST	T 8 S	R 39 E	5
	8069	ROBKE, FRANK	T 8 S	R 39 E	12
42B 46699 00		MONTAYLOR CORPORATION	T 8 S	R 40 E	7
42B 46697 00		MONTAYLOR CORPORATION	T 8 S	R 40 E	9
42B 46383 00		MONTAYLOR CORPORATION	T 8 S	R 40 E	20
42B 79364 00		USA (BLM)	T 8 S	R 40 E	28
42B 79365 00		USA (BLM)	T 8 S	R 40 E	28
	8080	KUKUCHKA WM * 6.5 M NE DECKER MT	T 8 S	R 40 E	33
	8457	MINER JIM * 4.2 M SE DECKER MT	T 9 S	R 40 E	4
	8458	HERRINGTON D * 13 MI SE BIG BEND SCHOOL	T 9 S	R 40 E	9

Water Rights

By cutting off both surface water from Pearson Creek and ground water in the A-D coal aquifer, both the No Action and Proposed Action Alternatives potentially impact downstream water rights by reducing the available flow in the Tongue River. Cutting off surface water flow in Pearson Creek reduces the surface flow from Pearson Creek by an average of 2.2 acre-feet per year in both the No Action and Proposed Action Alternatives. Cutting off the flow of the A-D aquifer reduces the flow a variable amount (See Figure 3.11-2). The proposed action reduces the flow from the A-D aquifer by a maximum of 313 gpm or the annual equivalent of approximately 500 acre-feet. Although under the No Action Alternative, Pearson Creek and the A-D aquifer are also cut off from the Tongue River, the Proposed Action extends the potential impacts further into the future more years than the No Action Alternative.

Surface Water Quality

The proposed expansion would impact surface water quality by increasing TDS and TSS concentrations. Storm events (short-duration, heavy rainfall) can increase dissolved metals and suspended solids concentrations when rainfall runoff reaches surface water after passing through upgradient mined areas and spoils. Spoils contain broken rock that has been removed from the surface to reach the underlying coal seam. This newly broken rock contains fine sediment that can be carried downstream during runoff. Surface runoff and ground water removed from active mining pits is typically commingled in inactive pits, which can increase TDS concentrations (SCC and WWC Engineering, 2017). Discharges of surface water or commingled surface and ground water are subject to the terms of MPDES discharge permits and are prevented from carrying excessive sediment loads to the Tongue River Reservoir. On completion of backfill and reclamation, surface water runoff would no longer be intercepted by impoundments and mining excavation and would return to premining rates.

Ground Water Quality

As mining progresses through the coal seam, inactive pits are backfilled with unconsolidated overburden, known as spoil, pursuant to ARM 17.24.501 and the approved permit (SCM, 2011a). As mining and reclamation progresses, ground water levels begin to rise, eventually contacting the spoil where soluble salts leach from the spoil to the ground water as a result of geochemical equilibrium processes (SCC and WWC Engineering, 2017). Dissolution of minerals on the newly exposed and broken surfaces of spoils rock causes an increase in concentrations of major analytes, including calcium, sodium, and sulfate ions. This results in increased TDS concentration in spoil water. The average TDS concentration in the A-D coal aquifer (from 18 wells monitored in 2016) was recorded at approximately 1,913 mg/L. At SCM, the TDS of spoil water ranges from 3,000 to 6,000 mg/L (DEQ, 2015). Although no acid-forming or toxic-forming materials have been identified in overburden material at SCM, backfilling mined pits with spoils is the primary cause for changes in ground water quality (SCC and WWC Engineering, 2017). The TDS concentrations in spoils are 2.2 and 1.8 times higher than in the undisturbed overburden and A-D coals, respectively. As ground water flows through backfill spoils, TDS concentrations peak during initial saturation and then equilibrate over time. The spoils ground water being monitored at SCM shows TDS concentrations consistent with predicted changes. Elevated TDS concentrations may be attenuated through natural geochemical processes as ground water migrates from the spoil downgradient to undisturbed coal and clinker. Based on an assessment of existing uses and current Montana ground water classification (based on EC), the premine beneficial uses of this water are expected to be feasible at the same viability (SCC and WWC Engineering, 2017).

Water bearing units (A-D coal seam, overburden) are dewatered at active mining pits. Hydraulic conductivity and the capacity to store water are changed in the process of removing overburden strata and returning it as spoil to mined-out pits. The relatively homogenous spoil

backfill has a more uniform hydraulic conductivity in contrast to undisturbed, bedded lithology where vertical conductivity is usually lower than horizontal conductivity (DEQ, 2015). Ground water modeling predicts the majority of the recovery to occur within approximately 50 years postmining, after which ground water levels are predicted to continue to increase to approximately premine conditions. Backfill spoil has been continually monitored and data confirms ground water recovery has been occurring in areas where mining has been completed.

Based on the analysis above, impacts on water from the Proposed Action are expected to be long-term and moderate.

3.11.4 Unavoidable, Irreversible, and Irretrievable Impacts

Ground water levels would be unavoidably lowered during mining due to the physical removal of the coal and from dewatering in the active pits. Ground water levels would eventually return to near premine levels after closure and reclamation, but that would take many years. Ground water and surface water impacts from the Proposed Action would primarily occur during active mining and dewatering of the pits. The water quality in the A-D aquifer would be unavoidably reduced after mining until it is reestablished many years from now. Impacts on ground water (including the interruption of the aquifer and increases in TDS) are reversible (or not irreversible) because over time an aquifer would reestablish itself in place of the removed A-D aquifer and further that TDS would decrease with time due to flushing, adsorption/desorption, precipitation/dissolution, and other complex geochemical processes that would occur as ground water travels downgradient. Further, these changes would not be permanent as they would be mitigated over time. Once the A-D aquifer is removed and replaced by a spoils aquifer, the aquifer would eventually reestablish through flushing, adsorption/desorption, precipitation/dissolution, and other complex geochemical processes, and water quality would improve. The flushing would likely reduce TDS in the spoils aquifers over time and other geochemical processes would likely reduce TDS as ground water moves downgradient through unmined coal and other materials.

3.12 WILDLIFE

This section summarizes applicable federal and state laws protecting wildlife in Montana, describes wildlife species that occur in the analysis area, and analyzes the potential direct and secondary impacts on wildlife from the No Action and Proposed Action Alternatives. Mitigation measures that would reduce impacts to sage grouse are also provided in this section.

3.12.1 Analysis Area

The analysis area for impacts on wildlife is the annual wildlife monitoring area, which is the SCM permit area plus a surrounding area of up to two miles and encompasses approximately 31,496 acres (**Figure 3.3-2**). The analysis area is larger than the Proposed Action disturbance footprint to ensure impacts that extend outside this boundary (such as noise) are adequately

analyzed, and to capture potential impacts to wide-ranging species (e.g., raptors that nest outside the permit area but forage in and near SCM).

3.12.2 Issues and Analysis Methods

The wildlife analysis looked at the following issues:

- What would be the impacts on species of concern and special, exceptional, critical, or unique areas for wildlife (ARM 17.24.304(1)(d)) (core and general sage grouse habitat and leks, sharp-tailed grouse leks, raptor nests, migratory birds, and wintering areas for mule deer and pronghorn)?
- How would threatened and endangered species be affected?
- How would species of concern be affected?

Analysis methods first identified the wildlife species and their habitats in the TR1 Project Area based on the 2018 annual wildlife monitoring report for SCM (Great Plains Wildlife Consulting, 2019) and the SCM Species of Special Interest Monitoring and Management Plan. Impacts from the No Action and Proposed Action were then evaluated based on species occurrences and habitat locations relative to the proposed activity.

For evaluating potential impacts specifically to sage grouse, DEQ selected a habitat functional acreage approach based on the HQT developed by MSGHCP to quantify gains and/or losses of sage grouse habitat caused by anthropogenic activities (Montana Mitigation Stakeholder Team, 2018a; Montana Mitigation Stakeholder Team, 2018b). This habitat functional acreage approach incorporates species population and habitat variables that are descriptive of seasonal sage grouse habitats. It also incorporates direct and secondary impacts of anthropogenic features. Collectively, these landscape characteristics were used to evaluate changes in sage grouse habitat functions for the SCM. A detailed description of the TR1 Sage Grouse Habitat Assessment approach is provided in Appendix A.

DEQ consulted with the MSGHCP on October 2, 2018, even though the TR1 application was outside the requirements of EOs 12-2015 and 21-2015. DEQ decided to use the habitat functional acreage approach because it would accurately reflect current habitat conditions (Baseline; No Action) as well as potential changes and impacts associated with the Proposed Action Alternative. The sage grouse habitat functional score in the TR1 area (977 acres) and in the surrounding area within two miles of TR1 (28,220 acres) was quantified. The functional acreage assessment used the average habitat function scores for the different SCM alternatives to estimate the direct and secondary impacts associated with TR1. This approach was deemed to produce an accurate estimate because it also incorporated existing SCM mitigation and conservation activities associated with the HRRP, CCAA, and SOSI into the habitat assessment.

3.12.3 Affected Environment

3.12.3.1 Regulatory Environment

Federal Requirements

The Bald and Golden Eagle Protection Act of 1940 (16 USC §§ 668–668c) prohibits taking eagles, their eggs, eagle parts, or their nests without a permit issued by USFWS. A “take” is defined as any of the following actions: to pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb eagles. A recently clarified definition (72 FR 31132) explicitly defines disturbance and protects eagles from impacts of human-initiated activities primarily around active, alternate, and historic nest sites. The definition of “disturb” includes any activity that will cause, or is likely to cause, based on the best scientific information available (1) injury to an eagle; (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior; or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior. Migratory birds (including raptors) and active nests are protected under the Migratory Bird Treaty Act (MBTA) (16 USC §§ 703–712). Under the MBTA, it is illegal to take any migratory bird, its eggs, its parts, or any bird nest except as permitted (such as waterfowl hunting licenses, falconry licenses, or bird banding permits) by USFWS. The definition of take under the act includes any attempts or acts of pursuing, hunting, shooting, wounding, killing, trapping, capturing, possessing, or collecting. Removal of active nests resulting in the loss of eggs or young is also prohibited (16 USC §§ 703–712). In addition, EO 13186 directs federal agencies to develop a Memorandum of Understanding with USFWS to further implement the MBTA and promote the conservation of migratory bird populations. State Requirements

Subchapter 17 of the ARM, which implements portions of MSUMRA, includes regulations on topsoiling, revegetation, and protection of wildlife and air resources. ARM 17.24.751(1) prohibits mining operations that may jeopardize continued existence of federally listed Threatened or Endangered species, result in adverse modification of critical habitat, or result in unlawful take of bald or golden eagles including their nests or eggs. ARM 17.24.751(2)(a–g) requires avoidance and minimization measures as well as BMPs for siting and construction of electric power lines, roads, and fencing that minimize adverse impacts on wildlife habitat. MSUMRA in particular requires each application to contain a fish and wildlife plan describing how the project will minimize disturbances and adverse impacts (including habitat impacts to aspects of the landscape, such as vegetation) on fish, wildlife, and related environmental values during mining and reclamation operations (ARM 17.24.312(1)(a)). Applicants are required to explain how they will utilize impact control measures, management techniques, and annual monitoring methods to protect or enhance habitats of unusually high value for fish and wildlife (ARM 17.24.312(1)(d)(iii)). SCM must ensure that reclamation will provide for habitat needs of various wildlife species in accordance with the approved postmining land use, with plant groupings distributed to fulfill fish and wildlife requirements (ARM 17.24.312(1)(e)).

FWP manages fish and wildlife in Montana under the state FWP Commission (Section 87-1-301, MCA). FWP, in conjunction with the Montana Natural Heritage Program (MTNHP), designates Montana Species of Concern. This designation is not a statutory classification, but rather is used to prioritize management and conservation of species that are at risk in Montana due to declining populations, threats to habitat, or restricted geographic range. The Montana Species of Concern list was also adopted as the list of Species of Greatest Conservation Need in the Montana State Wildlife Action Plan.

The state of Montana has issued three EOs on sage grouse management; including EO 10-2014, EO 12-2015, and EO 21-2015. EO 12-2015 amended EO-2014 and provides for implementation of the Montana Sage Grouse Conservation Strategy, consistent with the provisions of S.B. 261, 2015 Leg., 64th Sess. (Mont. 2015), now the Montana Greater Sage-Grouse Stewardship Act, Sections 76-22-101, MCA, *et seq.* EO 21-2015 directs all Montana state agencies to comply with EO 12-2015 and apply an updated Sage Grouse Core Areas and General Habitat in Montana map.

The SCM permit currently includes the monitoring of wildlife species (ARM 17.24.723), Protection and Enhancement of Fish, Wildlife and Related Environmental Values (ARM 17.24.751) and all reclamation requirements in reference to ARM 17.24.313. These permit requirements will continue and apply to the TR1 Project Area if the TR1 application is approved. At DEQ's request, SCM also prepared a Species of Special Interest Monitoring and Management Plan (SOSI Plan) to provide broad, long-term direction for management of wildlife species of special interest that occur in the TR1 Area. All these plans ensure the Proposed Action would comply with applicable state and federal regulations protecting wildlife. The plans provide long-term direction for monitoring species of interest; requirements for avoiding, minimizing and compensating for potential impacts to these species due to mine operations; and maintaining, enhancing, and/or reclaiming species habitats. Specific measures for minimizing disturbance and adverse impacts to migratory birds, raptor nests, and threatened and endangered species are included in the Fish and Wildlife Plan (SCM, 2017b). The Fish and Wildlife Plan also outlines best management practices that are applied during mining activities to minimize wildlife impacts, including buffers on grouse leks and raptor nests; scheduling mining activity and designing powerlines, stream crossings, ponds, fences, and facilities to minimize impacts to wildlife; monitoring of wildlife and other natural resources; and employee training.

The SCM reclamation plan includes restoring wildlife habitat as the primary postmine land use. In addition, the reclamation plan includes the opportunistic construction of wildlife enhancement features, which would increase the diversity of topography and vegetation such that habitat in reclaimed areas would be more like premine conditions and conditions in adjacent undisturbed areas. These enhancements include shrub mosaics, wetlands, rock piles/ledges, cliffs, steep slopes/escarpments, moisture catchment basins, riparian areas, small depressions, and woody debris. Larger reclamation features, such as traps and sediment ponds, larger depressions, or larger upland playas, would be addressed with DEQ approval prior to final

reclamation. Reclamation is completed contemporaneously to minimize disturbance footprint at the mine.

Wildlife monitoring has been conducted annually at SCM since 1982. Annual reports are submitted to DEQ, which discuss species occurrences, potential mine-related impacts to those species, agency coordination, and specific measures taken to avoid, minimize, or compensate for mine-related impacts within that year. The data are also used to determine the success of reclamation. A complete list of wildlife species observed in the SCM monitoring areas is included in the Surface Mining Permit and the annual monitoring reports. SCM has also developed internal guidance documents, including the SOSI Plan for all wildlife, and the HRRP specifically for the sage grouse. The HRRP was required as part of the federal coal lease permitting process for the Proposed Action. The HRRP requires that sage grouse habitat impacts be mitigated.

SCM is a member of the Thunder Basin Grassland Prairie Ecosystem Association (Association), a local organization representing ranchers and energy producers in northeast Wyoming and southeastern Montana. In cooperation with the USFWS, the Association developed a Conservation Strategy covering eight vertebrate species in sagebrush steppe and short grass prairie ecosystems, including sage grouse, sage sparrow, Brewer's sparrow, sage thrasher, black-tailed prairie dogs, mountain plover, burrowing owl, and ferruginous hawk. The USFWS finalized the Conservation Strategy in 2017 under the authority of Section 10 of the ESA (USFWS and Cooperating Agencies, 2017). SCM would voluntarily engage in conservation efforts under the framework of the approved Conservation Strategy. SCM would receive regulatory assurances or a high degree of certainty that if a species covered in the Conservation Strategy is listed under the ESA in the future, the member's activities could continue under a specific take permit that would be issued by USFWS. The Conservation Strategy is being implemented through a conservation agreement. The Conservation Strategy includes a variety of conservation measures both on and off the SCM property. SCM's Certification of Inclusion and Certificate of Participation detail the specific conservation measures selected for SCM to eliminate or minimize threats to sage grouse and other covered species, or to enhance, restore, or maintain habitat to provide a net conservation benefit for one of more of the covered species.

3.12.3.2 Existing Conditions

The majority of the wildlife habitat in the direct/secondary impacts analysis area consists of sagebrush-steppe, upland grassland, bottomland, reclaimed grasslands, and agriculture (pastures, hay fields, and tilled fields). Grasslands are present in playas, prairie dog colonies, agricultural areas, reseeded disturbed sites, and where a small (less than 20 acres) historical sagebrush area burned decades ago (exact date unknown but prior to at least 1994). The burned area is west of the SCM permit area but within the analysis area. Agricultural fields are present in the north-central portion of the direct/secondary impacts analysis area. Ponderosa

pine forests are present on rough breaks and north-facing slopes. Rocky Mountain juniper has colonized drainages and are also encroaching on sagebrush flats. Mining activities have disturbed much of the permit area though portions are under reclamation. Three major named drainages and several smaller drainages flow through the analysis area, all of which have ephemeral flow and drain into the Tongue River Reservoir. Vegetation in these drainages is dominated by juniper trees, but mesic shrubs are also present in drainages that hold more moisture. Water sources, including stock tanks, guzzlers, stock reservoirs, and mine reservoirs are present. Fourteen impoundments within 1 mile of the SCM permit area are monitored annually for aquatic wildlife, though six were dry in 2018 (Great Plains Wildlife Consulting, 2019). Sandstone outcrops and clay cliff faces are scattered throughout the analysis area.

The majority of the surface disturbance from the TR1 expansion would occur in the Pearson Creek drainage, which is characterized by sagebrush, grassland (including cheatgrass), greasewood, and limited stands of juniper in the draws and steeper slopes. There are no jurisdictional wetlands in the TR1 expansion area. Limited surface water is present and there is little subsurface water in the drainages to support mesic vegetation. Vegetation types within the TR1 expansion area are described in detail under Section 3.10 of this EIS.

Wildlife habitat would experience direct impacts (on the SCM and at the time of mining) and secondary impacts (off the SCM and at a later time) from both the No Action and Proposed Action Alternatives.

Land ownership in the direct/secondary impacts analysis area and cumulative impacts analysis areas is a mix of private, state, and federal surface ownership. Current disturbances in the analysis areas include the SCM and West Decker Mine (cumulative area only), an extensive network of roads and fences, powerlines, pipeline corridors, and old disturbance and infrastructure from coal bed natural gas development.

Species of Concern

Table 3.12-1 lists the Montana Species of Concern in Big Horn County, Montana, for which there is suitable habitat in the analysis areas. **Table 3.12-1** also lists each species' habitat associations based on the Montana Field Guide (MTNHP/FWP, 2018) and occurrence history in the analysis areas based on baseline and annual wildlife surveys at SCM. Due to the lack of perennial streams, no fish Montana Species of Concern are present. The sage grouse is discussed in greater detail in the text below because it has specific regulatory requirements and its habitat and space use requirements change seasonally, which is important for understanding potential impacts to the species. All wildlife baseline information provided below is derived from the 2018 annual wildlife report (Great Plains Wildlife Consulting, 2019) unless otherwise cited.

**Table 3.12-1
Wildlife Species of Concern at SCM**

Species	Habitat	Historic Occurrence in Analysis Area (1984-2013)	Recent Occurrence and Year Observed (2014-2018)	
			Direct/Secondary Analysis Area	Cumulative Impacts Analysis Area
Amphibians & Reptiles				
Great Plains toad <i>Anaxyrus cognatus</i>	Wetlands, floodplain pools	Infrequently	Never	Never
Greater short-horned lizard <i>Phrynosoma hernandesi</i>	Rocky outcrops, sparsely vegetated flats with sandy/gravelly soils	Rarely	2016	Never
Plains spadefoot <i>Spea bombifrons</i>	Wetlands, floodplain pools	Infrequently	Never	Never
Snapping turtle <i>Chelydra serpentina</i>	Prairie rivers and streams	Rarely	Never	2014/2015, 2017
Spiny softshell <i>Apalone spinifera</i>	Prairie rivers and larger streams	Never	Never	Never
Birds				
Black-billed cuckoo <i>Coccyzus erythrophthalmus</i>	Wooded draws (cottonwood, ash, and elm), thickets and deciduous woodlands	Never	Never	Never
Bobolink <i>Dolichonyx oryzivorus</i>	Tall grass and mixed grass prairie	Never	Never	Never
Brewer's sparrow <i>Spizella breweri</i>	Sagebrush and shrub-steppe	Regularly	Every year from 2014 to 2018	Every year from 2014 to 2018
Burrowing owl <i>Athene cunicularia</i>	Open grasslands where abandoned mammal burrows are available	Regularly	2014/2015 and 2016	Never
Cassin's finch <i>Haemorhous cassinii</i>	Forests, especially ponderosa pine	Never	Never	Never
Chestnut-collared longspur <i>Calcarius ornatus</i>	Short to medium grasslands	Never	Never	Never
Clark's nutcracker <i>Nucifraga columbiana</i>	Conifer forests, including ponderosa pine	Rarely	Never	Never
Golden eagle <i>Aquila chrysaetos</i>	Hunt over grasslands, shrublands, and open woodlands; nest on cliffs and large trees	Regularly	Every year from 2014 to 2018	Every year from 2014 to 2018
Great blue heron <i>Ardea herodias</i>	Wetlands, and edges of rivers and lakes	Regularly	Every year from 2014 to 2018	2018
Greater sage grouse <i>Centrocercus urophasianus</i>	Sagebrush, riparian meadows	Occasionally	2014/2015 and 2016	2018
Green-tailed towhee <i>Pipilo chlorurus</i>	Diverse shrub communities, especially on ecotone of	Once	Never	Never

**Table 3.12-1
Wildlife Species of Concern at SCM**

Species	Habitat	Historic Occurrence in Analysis Area (1984-2013)	Recent Occurrence and Year Observed (2014-2018)	
			Direct/Secondary Analysis Area	Cumulative Impacts Analysis Area
	sagebrush and mixed montane shrub			
Lewis's woodpecker <i>Melanerpes lewis</i>	Open forest and woodland, especially ponderosa pine and riparian	Infrequently	Never	Never
Loggerhead shrike <i>Lanius ludovicianus</i>	Grasslands, shrublands, pastures/fields, and other open habitats with short vegetation	Regularly	Every year from 2014/2015 to 2018	2016 and 2017
Long-billed curlew <i>Numenius americanus</i>	Mixed grass prairie and moist meadows	Rarely	2016 2017 2018	Never
Peregrine falcon <i>Falco peregrinus</i>	Nests on tall cliffs in open areas near water and abundant prey	Rarely	2017 (flyover)	2018
Pinyon jay <i>Gymnorhinus cyanocephalus</i>	Ponderosa pine and limber pine-juniper woodlands	Occasionally	2014/2015	2014/2015 and 2017
Sage thrasher <i>Oreoscoptes montanus</i>	Sagebrush shrublands	Rarely	Never	Never
Veery <i>Catharus fuscescens</i>	Deciduous riparian, especially where willow is present	Never	Never	Never
Yellow-billed cuckoo <i>Coccyzus americanus</i>	Deciduous riparian woodland (not known to breed in Montana)	Never	Never	Never
Mammals				
Black-tailed prairie dog <i>Cynomys ludovicianus</i>	Flat, open grasslands and shrub-steppe with low, sparse vegetation.	Regularly	Every year from 2014 to 2018	Every year from 2014 to 2018
Fringed myotis <i>Myotis thysanodes</i>	Ponderosa pine and cottonwood riparian; caves, mines, buildings (roosting)	Occasionally	2014/2015 and 2016	Never (not specifically monitored)
Hoary bat <i>Lasiurus cinereus</i>	Forested areas, riparian corridors	Regularly	2014/2015 and 2016	Never (not specifically monitored)
Little brown myotis <i>Myotis lucifugus</i>	Generalist, found in a variety of habitats and elevations; buildings, cave/mines (roosting)	Regularly	2014/2015 and 2016	Never (not specifically monitored)
Merriam's shrew <i>Sorex merriami</i>	Sagebrush-steppe	Never	Never	Never

**Table 3.12-1
Wildlife Species of Concern at SCM**

Species	Habitat	Historic Occurrence in Analysis Area (1984-2013)	Recent Occurrence and Year Observed (2014-2018)	
			Direct/ Secondary Analysis Area	Cumulative Impacts Analysis Area
Spotted bat <i>Euderma maculatum</i>	Open juniper, sagebrush, ponderosa pine savannah; cliffs/canyons near water (roosting)	Occasionally	2014/2015 and 2016	Never (not specifically monitored)
Townsend's big-eared bat <i>Corynorhinus townsendii</i>	Caves/mines (roosting); forest, woodlands, and cottonwood bottomland	Unknown	Never	Never (not specifically monitored)

3.12.3.3 Sage Grouse

Sage grouse have been experiencing long-term range-wide population declines (Connelly, et al., 2004). Trends in males attending leks across the range have decreased 0.83% per year between 1965 and 2015 (WAFWA, 2015). Trends in males attending sage grouse leks in Montana experienced a negative trend of 2.75% per year between 1965 and 2015 (WAFWA, 2015). The decline in sage grouse populations range-wide and in Montana has been largely attributed to degradation and loss of sagebrush habitats (Swenson, et al., 1987; Knick, et al., 2003; Connelly, et al., 2004). Sage grouse are a sagebrush obligate species (Braun, et al., 1977), entirely dependent on healthy continuous sagebrush habitats for successful reproduction and survival (Schoeder, et al., 1999; Connelly, et al., 2004). Fragmentation and degradation of these sagebrush habitats inhibit sage grouse productivity and survival, which have long-term impacts on affected sage grouse populations.

FWP worked with conservation and science partners to develop the Management Plan and Conservation Strategy for Sage Grouse in Montana – Final (Plan) (FWP, 2005). The goal of this Plan is to “provide for the long-term conservation and enhancement of sagebrush steppe/mixed grass prairie complex within Montana in a manner that supports sage grouse and a healthy diversity and abundance of wildlife species and human resources.” The Plan describes the desired conditions for sage grouse habitat, and identifies risks confronting habitat and sage grouse populations. The MSGHCP was developed to sustain viable sage grouse populations and conserve habitat while utilizing the plan and implementing EO 12-2015.

The MSGHCP manages sage grouse populations within three different habitat types throughout Montana, Core Areas, General Habitats, and Connectivity Areas. Connectivity Areas provide important linkages among populations between Core Areas or priority populations in adjacent states and across international borders; however, there is currently only one such area. Core

Areas were delineated by FWP in cooperation with federal and non-governmental partners to encompass the areas with the greatest number of displaying males and associated habitat and are considered areas of highest conservation priority (DNRC 2014; EO 12-2015). Occupied habitat outside of Core Areas or Connectivity Areas is considered General Habitat.

The EO 12-2015 outlines stipulations for development within each habitat type. Stipulations within Core Areas are more conservative than stipulations within General Habitats but are designed to maintain existing levels of suitable sage grouse habitat by regulating uses and activities to ensure sage grouse abundance and distribution in Montana. The TR1 Project is exempt from these conditions because it was received and deemed complete in 2013 before the EO effective date.

Sage grouse populations require large tracts of intact habitat necessary for seasonal requirements. The habitat characteristics used during these seasonal periods vary and can be dependent on what habitats are available to the population (see Connelly et al. 2011). Sage grouse in eastern Montana are nonmigratory as adequate breeding, nesting, brood-rearing, and wintering habitats overlap reducing the need for large seasonal movements (FWP, 2005). FWP identifies four seasonal habitats that are important to population viability: breeding, nesting, brood-rearing, and winter habitats. Breeding habitats include the lek locations where breeding occurs. The majority of nest locations across the species range occur proximate to lek locations (Connelly et al. 2011) and in Montana the majority of nests occurred within 3.2 kilometers (km) of a lek (Wallestad & Pyrah, 1974; Foster, et al., 2014). While brood-rearing and winter habitats likely occur within 3.2 km of a lek, there have been instances where broods have traveled 5 km to brood rearing habitats (Wallestad, 1971) and varying distances during the winter based on sagebrush cover needs (Connelly, et al., 2011). Regardless of season, maintaining large tracts of intact habitat that provides functional value during the annual cycle of sage grouse is critical to maintaining sage grouse population viability.

Sage grouse generally select nest sites that have higher percent sagebrush cover and higher shrub height than random locations (Connelly, et al., 2011). Selection patterns during the brood-rearing and late summer period shift as sage grouse seek out wetter areas where succulent forbs and insects are abundant (Wallestad, 1975). Habitat selection during the winter is dependent on topography and levels of snowfall but is usually concentrated in areas with greater amount of sagebrush percent canopy cover (e.g., >20%) (Eng & Schladweiler, 1972). During all seasonal periods, sage grouse avoid using habitats close to anthropogenic features on the landscape (Naugle, et al., 2011)(see Naugle et al. 2011), habitats with high density of conifers (Doherty, et al., 2009), habitats that have <5% sagebrush cover, and habitats such as badlands or canyons (EO 12-2015).

Historically, there have been nine sage grouse leks in the direct/secondary impacts analysis area (Great Plains Wildlife Consulting, 2019). No sage grouse or their sign were recorded at

these leks in 2018, and none have been recorded in 4 of the past 11 years (2008 to 2018). As of 2018, the status of the leks are:

- 3 confirmed active leks (Pasture, Alternate Pasture, Playa);
- 5 confirmed inactive leks (Windmill, Corral, Fenceline Playa, Fenceline Playa II, West Bench); The Fenceline Playa lek was impacted by flooding from water discharged from CBNG well sites; the operator is currently reclaiming the area.
- 1 confirmed extirpated lek (Upper Divide, which was mined through in the 1980s); and
- 1 unconfirmed lek (Alternate Fenceline Playa), where birds have occasionally been observed but there is not enough information confirm the lek.

There are two leks (Ankney North and Ankney South) in the cumulative impacts analysis area, both of which have a confirmed active status as of 2018 (Great Plains Wildlife Consulting, 2019). No birds were observed at the leks in 2018. Birds have been recorded at Ankney North in 12 of the 20 total survey years but have been absent the past seven years. No more than five males have been observed at Ankney North after 2007. Birds have been present at Ankney South in 5 of the 11 monitoring years (maximum of 6 males counted).

Sage grouse numbers in the direct/secondary impacts analysis area were highest in the late 1970s and 1980s, with the highest average peak male counts being 27 males per lek in 1978, and began declining in the mid-1990s (Great Plains Wildlife Consulting, 2019). Lek counts have been low in most years from 2009 through 2018. Peak counts have been below the current long-term average of 3.7 males/year (using counts of males at leks) in 30 of the past 39 years, and average peak male counts exceeded 5 birds per lek in only 8 of 39 years. The decrease in lek attendance at SCM in the mid-1990s was consistent with a larger region-wide decrease in sage grouse numbers during that same time (Connelly & Braun, 1997). The declines may be related to a persistent drought in the region, which reduces the number of succulent forbs and insects needed by young sage grouse for forage. Numbers of sage grouse at SCM tend to increase when winters are mild and precipitation conditions improve (Great Plains Wildlife Consulting, 2019).

Historical monitoring (1994-2013) at SCM has recorded sage grouse occasionally in other portions of the direct/secondary impacts analysis area (i.e., non-lek sites) (Great Plains Wildlife Consulting, 2019). In the past 4 years, sage grouse have been observed in the analysis area in 2014/2015 and 2016 but not in 2017 or 2018. However, they have been repeatedly confirmed in adjacent lands, particularly at one of the recently installed guzzlers. No grouse broods have ever been observed during annual targeted surveys along drainage routes and no broods have been observed from 2000 to 2017. In 2017 a brood was observed nearby but outside the analysis area. Sage grouse have never been encountered during winter surveys over the past 21 years (1995-2018).

Two sage grouse Core Areas intersect the monitoring area (direct/secondary plus cumulative impacts analysis area): PRB-1 (south) and PRB-2 (north). The remaining portion of the

monitoring area is General Habitat. There are no Connectivity Areas in the monitoring area. The five confirmed, active leks in the combined direct/secondary impacts analysis area and cumulative analysis area are located in Core Areas.

3.12.3.4 Big Game

In accordance with the SCM Monitoring Plan, big game species are monitored through annual winter surveys. Mule deer (*Odocoileus hemionus*) general and winter range is present in the analysis areas. Annual winter big game surveys have documented mule deer throughout the analysis areas, but they are most common in ponderosa pine, rough breaks, and sagebrush-steppe habitat. They have also been observed in reclaimed grasslands and bottomlands. No areas of concentrated winter use have been identified. In the 2018 winter survey in the direct/secondary impacts analysis area, 101 mule deer were observed in 24 herds. From 2012 through 2018, the minimum population density estimate was 1.5 mule deer/square mile. Historically (from 1995 to 2011), winter mule deer densities have varied each year, ranging from 0.8 to 9.6 mule deer/square mile. Densities have been lower in the past 5 years compared to the historic average of 5.2 deer/square mile. In the cumulative impacts analysis area, an additional 102 mule deer were observed in 22 herds (average of 2.0 mule deer/square mile) in 2018. Increases and declines in the mule deer population at SCM mirror regional trends in FWP Region 7 (FWP, 2018), which indicate population declines in harsh winters followed by a rebound within a few years.

Pronghorn (*Antilocapra americana*) general and winter range is present in the analysis areas. Pronghorn are most common in upland grasslands, sagebrush-steppe, and reclaimed grasslands. Most have been observed in the northeast portion of the direct/secondary impacts analysis area, where terrain is less steep. In the 2018 winter survey, 127 pronghorns were observed in five herds (average of 2.6 pronghorn/square mile). In the past 7 years, average annual densities ranged from 0.2 to 9.9 pronghorn/square mile. Historically (from 1995 to 2011) pronghorn densities have ranged from 0.6 to 6.5 pronghorn/square mile (average of 2.9 pronghorn/square mile). In the cumulative impacts analysis area, an additional 159 pronghorn were observed in 4 herds in 2018. Pronghorn in southeastern Montana have been affected by harsh winters but have been on an increasing trend since 2012 (FWP, 2016).

Elk (*Cervus canadensis*) and white-tailed deer (*Odocoileus virginianus*) occur rarely in the analysis areas. Elk have been recorded only once in the last 23 years of winter big game surveys. White-tailed deer have been observed in 4 survey years. Most recently 3 deer were observed near the Tongue River Reservoir in 2018, but they are uncommon in the immediate vicinity of the SCM.

There are 22,618 acres of big game high value winter range and 39,765 acres of moderate value winter range in the cumulative impacts analysis area. No big game migration corridors are present in the analysis areas.

3.12.3.5 Raptors

Raptors are monitored through annual raptor nest surveys. Raptor species are known to nest in the direct/secondary and/or cumulative impacts analysis areas, include red-tailed hawk (*Buteo jamaicensis*), osprey (*Pandion haliaetus*), golden eagle, bald eagle, prairie falcon (*Falco mexicanus*), Cooper's hawk (*Accipiter cooperii*), burrowing owl (*Athene cunicularia*), great horned owl (*Bubo virginianus*), northern harrier (*Circus cyaneus*), and turkey vulture (*Cathartes aura*). In addition, although no specific nest sites have been identified, American kestrels (*Falco sparverius*) are regularly observed in the breeding season and they likely nest in the direct/indirect impacts analysis area; and one nest has been observed in the cumulative impacts analysis area. As of 2018, there are 32 intact raptor nests in the direct/secondary impacts analysis area. Ten of these are within the SCM permit area, and one is in the TR1 Project Area. Within the cumulative impacts analysis area, there are an additional 41 intact nests. Some raptor pairs maintain multiple nests in their territory. Some nests have been used by more than one species in different years. Raptor abundance and nest success in a given year is tied in part to local prey abundance as well as weather.

Red-tailed hawks are the most common nesting raptor in the analysis areas, with 15 territories known in the analysis area. Annual surveys have documented from one to eight successful breeding pairs each year. In 2018, six red-tailed hawk pairs nested, and 3 of the 6 successfully fledged young. Currently there are 10 intact nests in the direct/secondary impacts analysis area. In the last 5 years, eight new nests have been constructed, three of which were near active mining within the SCM permit area. There are 12 additional nests in the cumulative impacts analysis area, where 1 to 9 pairs have been active in the past 5 years (9 were active in 2018).

Ospreys have nested in the direct/secondary impacts analysis area most years since 1993. There are currently five intact osprey nests, four of which are in the SCM permit area. In 2018, all five nests were used, and three of the five successfully fledged young. All osprey nests are on artificial nesting platforms, which have been placed by SCM as mitigation for mining disturbance or loss of nest sites and to provide alternate nesting sites when pairs attempt nesting in undesirable locations. For example, ospreys have built nests on power poles and abandoned mining equipment. Five additional nests are present in the cumulative impacts analysis area, four of which have been active each of the past five years.

Golden eagles nest in the analysis areas in most years. Four golden eagle territories have been documented in the analysis area. Two of these currently have intact nests. One (GE3) has no nests remaining (all destroyed by natural causes) and one nest (GE2) has become dilapidated from years of not being used (last occupied in 1994). In 2014, one pair constructed a new nest (GE1b) in view of existing mine activities, including topsoil stripping, blasting, and overburden removal. The nest has successfully fledged young in three of the past five years. The other nest (GE4) has not been active in the past two years, but was active in the previous 8 years, with young fledging in only two of those years. No golden eagle territories were active in 2017 or

2018. One of the intact nests (GE1b) is on the edge of the SCM permit area, the others are outside the permit area. There are five additional territories in the cumulative impacts analysis area. No more than two have been active in the last five years and both have fledged young in most years.

Bald eagles (*Haliaeetus leucocephalus*) occur regularly in the direct/secondary impacts analysis area in winter. No nests, roost sites, or winter concentration areas are within the SCM permit area. In recent years, 0 to 16 wintering eagles have been observed in the cumulative impacts analysis area in annual winter surveys. Most were perched in mature cottonwood trees along the Tongue River Reservoir, Squirrel Creek, and Youngs Creek. Two bald eagle nests are present in the cumulative impacts analysis area along the western edge of the Tongue River Reservoir. At least one of the nests has been active each of the last 5 years, and known to fledge young in each of the past 3 years (2016-2018). All bald eagle nests are at least 1.5 mile from the SCM permit area.

There are two prairie falcon territories in the direct/secondary impacts analysis area one of which was active and fledged young in 2018. The other territory was active 11 of 24 years (from 1995 to 2018), and was last active in 2017. This territory has two alternate nest sites (eyries), one of which is in the northern portion of the permit area, which will likely be mined in the future under the currently-approved SCM permit. This alternate nest site has been inactive since 2007. Other potential nest sites are limited in the analysis area because there are few other rock features of sufficient size, height, or slope to be suitable for prairie falcons. Four artificial nest cavities are present in the analysis area, which were previously created as mitigation for the SCM and by other landowners. None of these have ever been used by prairie falcons or any other raptor. Within the cumulative impacts analysis area, there are an additional eight eyries across five different territories. Two territories have been active in the past five years, but neither fledged young.

Cooper's hawk nested for the first time in the direct/secondary impacts analysis area in 2017. The nest is near the mine access road but is not within the SCM permit area. The pair fledged at least one young in both 2017 and 2018.

Burrowing owl nests have been documented in the analysis area sporadically since 1996. Currently there are four intact burrowing owls nest sites in prairie dog colonies in the direct/secondary impacts analysis area. The last year any of these nests were active was in 2011. None of the nest sites are in the SCM permit area. Two additional nest sites have been observed in the cumulative impacts analysis area, neither of which has been active in the past five years.

Great horned owls do not construct their own nest. They use nests constructed by other raptors; natural cavities in cliffs, large trees, mine highwalls; or manmade structures, such as mine facilities and inactive equipment. There is one intact great horned owl nest, and six other nests that have been used by both great horned owl and other species (red-tailed hawk and

prairie falcon). Two of these nests are within the SCM permit area. Four great horned owl pairs have nested in at least one of the past 5 years; fledged young have been confirmed in only one recent year. One pair nested in 2018 but failed to fledge young, possibly due to severe spring snow storms. There are 12 additional territories in the cumulative impacts analysis area, with two or three being active in most recent years.

There is one turkey vulture nest site in the direct/secondary impacts analysis area (in the TR1 Project Area), but the nest site has not been active since 1994. No other turkey vultures nest sites are known in the analysis areas though the species is commonly observed flying through.

Other species have been observed rarely in the analysis areas in the breeding season but not associated with a specific nest, including ferruginous hawk (*Buteo regalis*), short-eared owl (*Asio flammeus*), and peregrine falcon (*Falco peregrinus*). Peregrine falcons have been observed flying over the analysis areas in 2005, 2017 and 2018. Rough-legged hawks (*Buteo lagopus*) are often present in winter (including in 2018) but do not breed in the analysis areas.

3.12.3.6 Other Migratory Birds and Game Birds

From 1984 to 2017, general wildlife baseline and annual monitoring surveys, and annual avian point count surveys have documented 141 species of birds in the direct/secondary and cumulative impacts analysis areas. These are mostly passerine species and other small birds, but also include raptors, upland game, shorebirds and waterfowl. In 2017, the greatest species diversity was in cottonwood-riparian (26 species) and ponderosa pine (24 species) followed by bottomland (11 species). Six to eight species were documented in sagebrush-steppe, reclaimed grassland, and reclaimed sagebrush. The most abundant birds are primarily common species associated with sagebrush, such as the western meadowlark (*Sturnella neglecta*), Brewer's sparrow, and lark bunting (*Calamospiza melanocorys*). Common species in cottonwood-riparian habitat include yellow warbler (*Setophaga petechia*), American goldfinch (*Spinus tristis*), and yellow-breasted chat (*Icteria virens*). Diversity and abundance of waterfowl and shorebirds is low in all seasons because aquatic habitat is limited to man-made reservoirs and widely scattered ephemeral/intermittent streams. The most common aquatic birds have been mallard (*Anas platyrhynchos*), Canada goose (*Branta canadensis*), and killdeer (*Charadrius vociferus*). Overall species diversity and abundance of birds has been similar across monitoring years.

Sharp-tailed grouse are monitored through annual lek counts and brood surveys. Historically there were 15 sharp-tailed grouse (*Tympanuchus phasianellus*) leks in the direct/secondary impacts analysis area. Two have been lost to mining and one has been inactive the past 10 years. Six leks were active in 2017 when a total of 47 male grouse were observed. One new lek was also documented but the lek is considered potential/unconfirmed at this time. Three leks (ST-3b, ST-3a, and Pearson Ck S) are within the proposed disturbance area for the TR1 Project, of which two were active in 2017. Three additional leks are present in the cumulative impacts analysis area. Sharp-tailed grouse populations have fluctuated over the monitoring period, with

highest numbers observed in the 1980s. The current population count is about half that observed in the 1980s.

The USFWS Birds of Conservation Concern (BCC) (USFWS, 2008) identifies nongame migratory birds that without additional conservation actions are likely to become candidates for listing under the ESA. Impacts analysis focuses on these species because they are considered most vulnerable. Many are also Montana Species of Concern, addressed in the previous section of this EIS. Species on the BCC list for the region (Bird Conservation Region 17 - Badlands and Prairies) have been documented in the analysis areas, including:

- Species that occur regularly: golden eagle, prairie falcon, upland sandpiper (*Bartramia longicauda*), burrowing owl, loggerhead shrike, and Brewer's sparrow;
- Species that occur occasionally: bald eagle, pinyon jay, and grasshopper sparrow (*Ammodramus savannarum*); and
- Species that occur infrequently, rarely, or have a single occurrence record: ferruginous hawk (*Buteo regalis*) (flyovers, no nest), peregrine falcon (flyovers, no nest), short-eared owl (*Asio flammeus*) (flyovers, no nest), long-billed curlew, marbled godwit (*Limosa fedoa*), Lewis's woodpecker, red-headed woodpecker (*Melanerpes erythrocephalus*), and sage thrasher.

3.12.3.7 Other Species

Baseline and annual wildlife monitoring surveys have documented 40 species of mammals in the direct/secondary and cumulative impacts analysis areas. Based on baseline trapping data, small mammal populations in the analysis areas are dominated by common species, such as the deer mouse (*Peromyscus maniculatus*). Chipmunks, ground squirrels, pocket gophers, black-tailed prairie dogs, and porcupines are also common. Lagomorphs are primarily cottontail species, which are monitored annually at SCM to track population trends relative to raptor species that prey on them. The lagomorph population at SCM is cyclic, and experiences periodic highs and lows that match trends elsewhere in this region of Montana. Currently, lagomorph abundance is at a low, with abundance in 2018 at less than half what counts were at the last high in 2010. Coyotes (*Canis latrans*) are the most common carnivore. Badger (*Taxidea taxus*), black bear (*Ursus americanus*), bobcat (*Lynx rufus*), and mountain lion (*Puma concolor*) occur rarely. In 2018, fresh black bear scat was documented along South Fork Spring Creek and a bear was confirmed using a guzzler in the cumulative impacts analysis area.

Eight species of bats have been documented in the direct/secondary impacts analysis area based on baseline surveys, annual monitoring (up to 2012), and automated/electronic monitoring (2012 to 2016). No information is available on bats in the cumulative impacts analysis area, but species diversity and abundance are likely similar. No specific bat roosts are known to occur in the TR1 Project Area or either of the larger analysis areas, though potential roosting habitat is present in woodlands, cliff faces, and rock outcrops. Bats likely forage throughout all habitat types in the analysis areas, and most frequently at ponds/reservoirs and riparian areas.

Baseline and annual wildlife monitoring surveys have documented 15 species of amphibians and reptiles in the direct/secondary and cumulative impacts analysis areas. Amphibian habitat is limited to ponds/reservoirs and larger streams that hold pooled water in the spring. The boreal chorus frog (*Pseudacris maculata*) is often the only amphibian recorded during annual monitoring. Several species of snakes and lizards have been observed but in general are relatively rare.

3.12.4 Direct and Secondary Impacts

3.12.4.1 No Action Alternative

Under the No Action Alternative, SCM would not expand mining into the TR1 Project Area. Impacts to wildlife resources in the analysis area would continue to occur from ongoing mining activities that are approved under the existing SCM permit. These impacts would continue through the life of the mine as currently permitted. Impacts to wildlife would be minimized through reclamation and by continued adherence to the monitoring requirements in ARM 17.24.723 and protections under ARM 17.24.751. An additional voluntary conservation measure implemented by SCM to help minimize impacts to wildlife, including sage grouse, is with the Thunder Basin Grasslands Prairie Ecosystem Association CCAA. Also, at the request of DEQ, SCM submitted a SOSI Plan to provide broad, long-term direction for management of wildlife species of special interest that occur within the SCM wildlife monitoring area.

Direct impacts general to all wildlife species under the No Action Alternative include mortality, disturbance, and habitat loss. Wildlife mortality could occur from road kill, collisions with powerlines and fences, and trapping in pits. Disturbance from noise, light, and human presence during drilling, blasting, coal extraction, hauling, and other operational activities would occur up to 24 hours per day. These disturbances would continue to displace wildlife from the area, though the degree of the effect would vary by species because some species are more mobile or are more tolerant of disturbance. Noise effects would vary spatially depending on surrounding topography and other factors (see noise analysis in Section 3.5 of this EIS for more detail). In accordance with the wildlife plans in the permit, regular monitoring would continue and would ensure that wildlife issues are identified as they occur, and specific mitigation measures would be designed as needed in consultation with state and federal agencies.

Temporary loss of up to 6,022 acres of habitat would occur from ongoing approved surface disturbing activities in the permit area, including vegetation clearing, topsoil stripping and storage, overburden stripping and stockpiling, coal recovery, roads, powerlines, pipelines, fencing, parking areas and other facilities. Removal of habitat temporarily reduces the number of wildlife that the analysis area can support, displaces wildlife to other areas, and increases competition in the remaining habitat. Continuation of contemporaneous reclamation would reduce the impacts of habitat loss in the short term by minimizing the disturbance footprint of the mine. Final reclamation would reduce the impact in the long term by restoring habitat similar to or enhanced from premine conditions. Over 3,570 acres have been or will be

reclaimed to wildlife habitat; only 267 acres have been reclaimed to grazing land as of December 2017. Voluntary conservation measures implemented under the regional Conservation Strategy would also offset habitat loss.

Impacts to wildlife are expected to be mostly direct impacts. Secondary impacts could occur from changes to vegetation communities that adversely affect wildlife habitat quality (forage and cover) later in time, such as habitat fragmentation, introduction or spread of weeds, and dust causing reductions in plant productivity. These could occur in the TR1 Project Area and spread into adjacent intact habitat. In addition, the mining activities could change wildlife species diversity by promoting wildlife species that are tolerant of disturbance.

Overall, the No Action Alternative would result in localized, short-term, and moderate adverse impacts to wildlife individuals and habitats in the analysis area. Long-term adverse impacts to wildlife are not expected because SCM would adhere to required and voluntary wildlife conservation measures (described above) and reclamation would occur as described in **Section 2.2.9**.

Threatened and Endangered Species

The No Action Alternative would have no effect on black-footed ferret or other threatened or endangered species or their critical habitats because none occur in the SCM permit area. No disturbance would occur in potential black-footed ferret habitat (i.e., prairie dog colonies that are 80 acres or larger). The current Fish and Wildlife Plan would continue to apply, which requires that SCM contact USFWS at least 1 year prior to disturbing any prairie dog colonies within the permit area to determine whether black-footed ferret surveys would be required. The Fish and Wildlife Plan also provides direction on actions to be taken in the unlikely event a threatened or endangered species is encountered, including contacting USFWS and DEQ.

Species of Concern

Under the No Action Alternative, species of concern would continue to be affected by noise and mining disturbance and by the temporary disturbance of 6,022 acres of habitat over the life of the mine. Contemporaneous reclamation would reduce the impact of habitat loss in the short term. Voluntary measures in the Conservation Strategy and final mine reclamation would reduce the impact in the long term.

Removal of sagebrush and grasslands would result in loss of foraging and security habitat for Brewer's sparrow, burrowing owl, and loggerhead shrike, and removal of woodlands would result in habitat loss for pinyon jay. The longest-term impact would be to species dependent on sagebrush and ponderosa pine, because trees and sagebrush shrubs take longer to establish in reclamation compared to grasslands. Great blue herons use water sources near mine activities and do not appear to be affected by disturbance. Temporary ponds have been constructed that provide a resource for wildlife. Maintenance of sediment ponds during mining would be addressed under ARM 17.24.639. Approximately 3 acres of ponds existed premining (see **Table**

3.5-2) and would be restored during reclamation phases once mining is complete; these would be incorporated into the reclamation plan as Wildlife Habitat Enhancement Features per 17.24.301(143). Other large reclamation features, such as traps and sediment ponds converted to permanent ponds, larger depressions or larger upland playa will be addressed under ARM 17.24.504, 642, and 751(2)(f) and (g), as required, with DEQ approval prior to final reclamation. Location of postmining man-made stock ponds (considered non-jurisdictional waters of the U.S.) would be designated and permitted with the DEQ. For these reasons, no measurable impacts to great blue heron are expected because there would be no permanent change to the amount of aquatic habitat.

Bat species of concern (including hoary bat, little brown myotis, fringed myotis, and spotted bat) would continue to be affected by noise and light disturbance from ongoing operations at SCM. This could alter their nocturnal foraging behavior and displace them from the mine area. Given that the mine has been operating for more than three decades, it is likely these bat populations have adjusted to the adverse effects from the disturbance. Surface disturbance of 6,022 acres would result in the temporary loss of bat foraging habitat and trees and cliffs that could be used by individual bats for roosting. No known hibernation, maternal, or other large roost sites would be affected. Reclamation would restore foraging habitat, and installation of bat houses (part of the voluntary Conservation Strategy) in the region would help offset the loss of trees and cliffs.

No black-tailed prairie dog colonies would be directly disturbed by continued mining operations, but surface disturbance would result in the temporary loss of potential habitat for new colonies. Noise and human presence are not likely to have a measurable impact on prairie dogs because they tend to habituate to disturbance.

Sage grouse

Under the No Action Alternative, SCM would not expand into the TR1 Area but existing mining in Pits 1 and 2 and other related mining activities (roads, transportation, and reclamation) would result in noise and disturbance impacts at the four nearby active sage grouse leks. SCM has entered into the voluntary 30-year CCAA to implement landscape-scale conservation measures to benefit the sage grouse population affected by the SCM, Decker Mines, and other anthropogenic-related activities (USFWS 2017). The conservation measures are currently being implemented by SCM in the CCAA area and include SCM's commitment to conifer removal to enhance sagebrush-steppe habitats; cheatgrass treatment; additional sagebrush and forb reclamation efforts; road closures and reclamation; protection of sagebrush habitats known to support targeted species; use of conservation easements to protect certain habitats of special value; and protection of green areas that could serve as important foraging habitat for sage grouse broods and other species (USFWS 2017).

Noise and other disturbance would occur from the No Action Alternative and direct impacts to sage grouse at nearby leks would be expected. Conservation measures voluntarily implemented

by SCM and other wildlife plans would continue to apply and would help avoid and minimize other direct impacts.

The average sage grouse habitat function score for the current (baseline; No Action) conditions for the sage grouse assessment area (28,220 acres) was 0.1733 resulting in a total functional score of 4,891 acres in the 28,220-acre area included in this evaluation. The sage grouse habitat score of 4,891 was used to compare to sage grouse habitat scores for the Proposed Action Alternative. The difference between the No Action and Proposed Action sage grouse habitat scores was used to calculate a compensatory mitigation obligation.

Big Game

Currently-approved activities at SCM would result in total disturbance of 4,071 acres of high value big game winter range and 2,013 acres of moderate value big game winter range over the life of the mine, which together would impact 19 percent of the analysis area. No areas of concentrated big game use or migration corridors would be affected because none are present in the analysis area. Required and voluntary reclamation measures both on and off the permit area, would reduce the impact from temporary loss of big game winter habitat. In addition, contemporaneous reclamation has and would continue to minimize the impact, as is evident in the use of reclaimed areas at SCM by both pronghorn and mule deer. Final reclamation would further reduce long-term impacts of habitat loss and would include wildlife enhancement features that are beneficial to big game, including those that target shrub communities for browse and create topography or breaks for cover.

In terms of disturbance from noise and human activity, mule deer and pronghorn continue to occupy areas adjacent to the mine and are likely habituated to the mining activity that has occurred here for over three decades. Based on past annual wildlife monitoring, one to two mortalities from vehicle collisions per year would continue to occur. Measures outlined in the Fish and Wildlife Plan (SCM, 2017b) would ensure fences, above-ground conveyors, roads, and other facilities would not impede movement of big game or result in entanglement.

Raptors

Under the No Action Alternative, raptor collisions and electrocutions from existing powerlines would be a continued risk through the life of mine. Powerlines at SCM have been constructed according to Avian Powerline Interaction Committee (APLIC guidelines), which reduces the risk but does not eliminate it completely. An electrocution of a red-tailed hawk was suspected in 2017, and the mortality was found under an APLIC-compliant pole. However, poles following APLIC-standards are considered safer for raptors than non-compliant poles and electrocutions have not been a common occurrence in the past. Therefore, electrocutions are expected to be a minor impact through the life of mine.

The No Action Alternative would result in temporary impacts to a total of 6,022 acres of raptor habitat, which includes foraging habitat, winter habitat for some species such as rough-legged

hawks, and nesting habitat in the form of cliffs and trees. The removal of trees would have an adverse impact because raptors in the analysis area nest most frequently in trees (ponderosa pine and juniper) and snags. Riparian trees used as bald eagle winter roost sites would not be affected. Habitat loss may induce a secondary impact by altering the abundance and diversity of prey populations. The impact in a given year would be smaller than the overall total because SCM generally disturbs only up to about 300 acres each year. Contemporaneous and final reclamation would reduce these impacts in the short term and long term. When possible, final reclamation would include enhanced features for raptors, such as construction of scarps and steep slopes to replace lost cliff habitat. Trees would be seeded and transplanted in reclamation areas, but the removal of trees would be a long-term impact since they take time to establish.

Surface disturbance that would occur under the current SCM permit would result in the direct loss of four intact raptor nests, including one prairie falcon eyrie (PF1b), two red-tailed hawk nests (RTH2b, RTH15a), and one golden eagle nest (GE2). Impacts to nesting pairs would be avoided by removing or relocating inactive non-eagle nests prior to surface disturbance activities, which would be done in coordination with USFWS, FWP, and DEQ. This would also apply to any new nests built in proposed disturbance areas in the future. Mitigation would reduce impacts to the breeding population and would be designed in coordination with USFWS and DEQ, including maintenance and installation of nest platforms as needed. Impacts to breeding pairs would also be minimized by using barricade measures prior to the breeding season to prevent nesting in areas to be disturbed. Many of the raptor pairs have multiple nests present in their territory that could be used as alternative nests in the event a nest is lost to mining. This is particularly true for the red-tailed hawks, which are the most common raptor in the analysis area. The loss of a prairie falcon eyrie is less likely to be successfully mitigated, given they have not used any of the artificial rock cavities that were constructed in the analysis area. However, the PF1b eyrie has not been active in since 2007, although in 2017 a pair used an alternative eyrie in this territory that was outside the permit area. The golden eagle nest has also not been active in over 20 years, and only remnant sticks remain. Therefore, loss of the nest site would have minimal impact on golden eagles breeding in the analysis area. Ospreys occasionally nest on power poles and mining equipment and need to be relocated, but they have responded favorably to nest platform mitigation (all existing osprey nests are currently on artificial platforms). Nest relocation or loss would have minimal impacts to osprey.

Under the No Action Alternative, noise and other mining disturbance would continue at their current levels, potentially affecting 33 raptor nests. Nest protection measures included in the SCM permit's wildlife plans, would reduce nest disturbance impacts. Agency coordination would occur annually for active nests that would not be directly impacted but are proximal to mining activity, and mitigation at these nests would be considered as needed on a case-by-case basis. In general, raptors breeding at SCM appear to be tolerant of mining activity, having constructed new nests adjacent to existing disturbance or on mining equipment and power

poles, and successfully fledged young there. Given raptor tolerance of existing disturbance and the use of mitigation measures, continued noise and mining disturbance would have a minor impact on nesting raptors.

Other Migratory Birds and Game Birds

Under the No Action Alternative, mining activities would continue to impact passerines, waterfowl and shorebirds, and game birds through noise and other disturbance, direct mortality, and habitat loss. Impacts are most likely to occur in the breeding season when the greatest number of birds are present in the analysis area. Noise and mining activities would continue and would disturb and displace birds from the affected area. Noise interferes with breeding behavior if it masks the ability of birds to hear each other and find mates and can also affect bird survival by decreasing their ability to detect predators.

Vehicle collisions may occur but are expected to be infrequent and therefore not a major impact. Avian protection measures outlined in the SCM permit's wildlife plans would reduce other direct impacts. For example, impacts to nests would be avoided by conducting preconstruction surveys prior to ground clearing activity and implementing nest buffers as needed. No sharp-tailed grouse leks would be lost to surface disturbance approved under the current SCM permit.

Migratory birds and game birds would be impacted by the temporary impact of 6,022 acres of habitat, which would decrease the overall abundance and diversity of birds in the analysis area. Shrubland and grassland species would incur the least impact because these habitat types occur commonly in the area surrounding the proposed disturbance. In addition, 267 acres of the mine disturbance have been reclaimed to grazing land and provides some value to birds. Reductions in sagebrush shrub density are expected to be long term and would result in decreased abundance of birds that require sagebrush habitat. The greatest impact would result from removing less common habitats that have high species diversity, particularly ponderosa pine. Removal of mature trees would also be a long-term impact because of the time it takes to restore trees in reclaimed areas. No cottonwood-riparian habitat would be directly affected. Temporary ponds would be maintained during mining to provide a water source to game birds and other wildlife and would include escape ramps to reduce the risk of drowning. Impacts to habitat used by waterfowl and other aquatic species would not occur.

Other Species

Mining activities under the No Action Alternative would result in habitat loss and direct mortality from collisions with vehicles or mining equipment. These would continue to have short term impacts on the small mammals in the analysis area. Reclamation would include creating or restoring micro habitat features, such as wetlands and rock piles, which would attract small mammals and accelerate recolonization. The impact of habitat loss would be short term because small mammal abundance is expected to be similar in reclaimed and native habitats within several years of reclamation being completed (Clayton, et al., 2006).

There would be minimal impacts to large carnivores, which are generally rare in the analysis area. Carnivores are also highly mobile with large home ranges and can avoid and navigate around disturbed areas. In response to habitat loss, these species would likely shift their activities to adjacent areas. Contemporaneous and final reclamation would further reduce this impact by restoring habitat in the short term and long term. Species such as coyotes are tolerant of disturbance.

Amphibians and reptiles may be lost to collisions with vehicles or other mining equipment, particularly snakes when they are crossing roads or basking, or frogs when they are making overland movements during wet periods. Habitat loss would be the primary impact to reptiles. No amphibian habitat (ponds/reservoirs) would be lost to mining although mining disturbance, particularly in drainages, could impede migratory or other overland movements between breeding ponds. Impacts to streams would be minimized through BMPs as outlined in the SCM permit (see also Section 3.10 of this EIS). Temporary ponds would be maintained during mining and stock ponds would remain following mine closure and continue to provide habitat.

3.12.4.2 Proposed Action Alternative

The Proposed Action Alternative would expand the SCM surface disturbance in the southern and northwestern portion of the permit area and extend the life of the mine. The general duration and intensity of direct and secondary impacts to wildlife from the Proposed Action are similar to those from the No Action Alternative, including direct mortality, disturbance, and habitat loss, except the impacts would be extended for approximately four more years. The Proposed Action would not increase or decrease annual wildlife mortality rates to a measurable degree compared to the No Action Alternative because the risk of road kill, collisions with powerlines and fences, and trapping in pits would not change. Levels and timing of noise, light, and human presence would also be similar to the No Action Alternative but would continue to disturb and displace wildlife for an additional four years. Noise effects would vary spatially depending on surrounding topography and other factors (see noise analysis in Section 3.5 of this EIS for more detail) and would occur at levels comparable to the No Action Alternative.

A specific habitat functional acreage approach was used to assess impacts to sage grouse from the Proposed Action (**Appendix A**). Mining activity in the TR1 Project Area (as described in the Proposed Action) would result in reduced sage grouse habitat functions in the 28,220-acre wildlife analysis area (TR1 Project Area plus a 2-mile buffer).

The primary difference for other wildlife species impacts relative to the No Action Alternative would be the increased surface disturbance under the Proposed Action and that the surface disturbances would continue for an additional four years beyond the currently end of mine life. The Proposed Action would result in an additional 977 acres of disturbance and a total life of mine disturbance of 7,111 acres. Habitat types impacted by the Proposed Action would be similar to those impacted under the No Action Alternative (see Section 3.9 of this EIS for more detail on vegetation impacts).

Impacts to wildlife would be reduced in duration and intensity by adherence to the monitoring of wildlife species (ARM 17.24.723), Protection and Enhancement of Fish, Wildlife and Related Environmental Values (ARM 17.24.751) and all reclamation requirements in reference to ARM 17.24.313. Additional required and voluntary impact avoidance, minimization, and compensation measures are detailed in the SOSI Plan for TR1. Per these plans, regular monitoring would continue to ensure site-specific impacts would be identified and addressed in coordination with USFWS, FWP, and DEQ. Overall impacts would be similar to the No Action Alternative in that temporary and localized adverse impacts to individuals would occur but adverse impacts to population viability in the wildlife analysis area would not.

Species of Concern

Compared to the No Action Alternative, similar habitat types would be affected by the Proposed Action, therefore the same Montana Species of Concern would be affected. Noise and other disturbance levels would be similar to the No Action Alternative but would last an additional four years. The Proposed Action would result in an additional 977 acres of habitat loss for Brewer's sparrow, burrowing owl, loggerhead shrike, pinyon jay, hoary bat, little brown myotis, fringed myotis, and spotted bat. This would further reduce the numbers of these species the analysis area could support. Contemporaneous and final reclamation would reduce the impact of this habitat loss. Required and voluntary conservation measures that are focused on sage grouse, including the HRRP and regional Conservation Strategy, would benefit other Montana Species of Concern that inhabit sagebrush. The beneficial impact would last 10 to 30 years, depending on the project, and would help offset the mining-related impacts at SCM.

In contrast with the No Action Alternative, the Proposed Action would remove two small black-tailed prairie dog colonies located in proposed mining disturbance areas. The colonies are near each other and together encompass 19 noncontiguous acres. Black-tailed prairie dogs are common in the analysis area, particularly to the south where some of the larger colonies have been mapped. Given that the impacted colonies are small, and there are numerous black-tailed prairie dog colonies in the surrounding area that could recolonize the area postmining, loss of the two colonies in the TR1 area is unlikely to cause population declines in the analysis area. Loss of prairie dog colonies could also affect other species, such as burrowing owl, that depend on the burrows, and other raptors that consume prairie dogs as prey. Although up to five pairs of burrowing owls have been known to breed in the analysis area in the larger prairie dog colonies, they have never been observed at the two colonies that would be lost. In addition, only one of these burrowing owl nests has been active in the past five years. Therefore, minimal impacts to burrowing owls would occur from removal of the two black-tailed prairie dog colonies.

Sage Grouse

As described above, a sage grouse habitat functional acreage approach was used to calculate average habitat function scores and estimate the direct and secondary impacts associated with

the Proposed Action (**Appendix A**). The addition of TR1 mining to the landscape reduced sage grouse habitat functions within the 28,220-acre wildlife analysis area (TR1 plus a 2-mile buffer) to an average score of 0.1515 with a resulting total score of 4,275 functional acres. The reduction in habitat function from the Proposed Action would result in an estimated loss of 615 functional acres.

Applying a 10-percent multiplier to ensure “no net loss”, a 20-percent multiplier for “credits lost due to unforeseen events”, and a 10-percent multiplier for the Steward Fund, the 615 functional acres of habitat loss would equal a total loss of 861 functional acres of sage grouse habitat for a compensatory obligation. Implementing the Proposed Action would occur over several years and concurrent reclamation would also factor in. Table 5 in Appendix A shows the annual debits from disturbance and the credits from reclamation over the life of TR1 project. The total compensatory amount for loss of sage grouse habitat was \$107,727. The cost of \$13.00 per debit would decrease over time based on the MSGOT policy guidance which recommends applying a Present-Value discount of 3 percent to the \$13.00 price if SCM pays the compensatory obligation at the beginning of the project.

Big Game

The Proposed Action would disturb an additional 9 acres of high value big game winter range and an additional 968 acres of moderate value big game winter range, which would impact an additional three percent of the analysis area. No migration routes would be affected. Over the life of the mine, the Proposed Action would disturb a total of 4,080 acres of high value habitat and 2,982 acres of moderate value big game habitat. As would be the case under the No Action Alternative, contemporaneous and final reclamation, as well as sagebrush enhancement and offsite mitigation required under the HRRP, would reduce the impact of the additional habitat loss on big game species.

Noise and other disturbance would occur over an additional four years, though big game are likely habituated to the disturbance. No increase in vehicle collisions with big game or other mortality is expected. Conservation measures required in the Fish and Wildlife Plan (SCM, 2017b) and other wildlife plans would continue to apply and would avoid and minimize other direct impacts.

Raptors

Raptor mortality from collisions or electrocutions is unlikely to increase as a result of the Proposed Action because there would be no additional powerlines or increased traffic. Noise and mining disturbance effects would shift spatially as mining progresses but would not increase above the levels that would occur under the No Action Alternative. In addition, there are few intact raptor nests in proximity to the areas that would be disturbed under the Proposed Action. Therefore, noise and disturbance resulting from the Proposed Action would have minimal impacts on raptors.

The same raptor nests that would be lost under the No Action Alternative would also be lost under the Proposed Action, with the addition of one nest site. A turkey vulture nest site that is on a cliff within the proposed TR1 disturbance area would be removed during mining activity. However, this nest site has not been active since 1994. Although turkey vultures have been observed flying through the analysis area every year, there are no other intact turkey vulture nest sites in the analysis area.

The Proposed Action would result in loss of an additional 977 acres of foraging habitat as well as potential nest sites for raptors, such as cliffs and trees. Raptor conservation measures outlined in the Fish and Wildlife Plan, and contemporaneous and final reclamation, which would include raptor-specific enhancements, would reduce the impact of the additional habitat loss on raptors. Contemporaneous reclamation would be beneficial to raptors because prey populations are likely to return to reclaimed areas within a few years (Clayton, et al., 2006), which would offset the reductions in prey that would occur in the 977 acres. Two osprey pairs, and one red-tailed hawk pair have nested and fledged young in a reclaimed area at SCM, demonstrating that reclaimed areas can be used by raptors.

Other Migratory Birds and Game Birds

Noise, mining disturbance, and direct mortality impacts on other migratory birds and game birds would be comparable to impacts expected under the No Action Alternative. Avian protection measures required in the SCM permit's wildlife plans would continue to be implemented under the TR1 Project to reduce these impacts.

The temporary impact of an additional 977 acres of habitat would reduce the abundance and diversity of birds that the analysis area can support. The Proposed Action would impact similar habitat types and avian species as the No Action Alternative. Mesic areas along the ephemeral Pearson Creek would be lost but no cottonwood-riparian habitat or water bodies would be affected. There is no shorebird or waterfowl habitat (open water, shorelines and adjacent uplands) in the TR1 Project Area, therefore no shorebirds or waterfowl would be impacted.

Two active sharp-tailed grouse leks (ST3-b and Pearson Creek S) in the TR1 Project Area would be lost as a result of the Proposed Action. Sharp-tailed grouse do not show the same fidelity to a specific lek site as compared to sage grouse, and grouse using these leks could shift spring displays to another location in the analysis area. Reclamation efforts are likely to mitigate impacts to this species since the grassland habitat favored by the sharp-tailed grouse are the quickest to establish in postmining reclamation. However, the species also requires brushy areas for cover, and the loss of shrubland, trees, and mesic areas along Pearson Creek would reduce the value of the analysis area until these habitat features are restored.

Other Species

Impacts to other species, such as small mammals, carnivores, and reptiles, would be similar to impacts incurred under the No Action Alternative. No ponds or reservoirs would be affected by

the Proposed Action; therefore, there would be no loss in amphibian breeding habitat. Stock ponds would remain in place following mine closure and continue to provide habitat. The loss of mesic areas in the Pearson Creek drainage may impede the ability of amphibians to disperse and move through portions of the analysis area.

Based on the analysis above, impacts to wildlife (including species of concern, big game, and migratory birds) from the Proposed Action would be both direct (on the SCM at the time of mining) and secondary (at a later date and away from the SCM). The impacts to wildlife are expected to be primarily short-term and minor.

3.12.4.3 Sage Grouse Mitigations

Mitigations for sage grouse were derived using a sage grouse habitat functional approach to calculate the average habitat function score for the baseline (No Action Alternative) and compare it to the average habitat function score for the TR1 Project (Proposed Action). Implementing the Proposed Action would result in a reduction in sage grouse habitat function score which was used to estimate the compensatory mitigation obligation associated with the Proposed Action. The complete description of the sage grouse habitat functional approach used for the TR1 EIS is in Appendix A.

The addition of TR1 mining to the landscape reduced sage grouse habitat functions within the 28,220-acre wildlife analysis area (TR1 Project Area plus a 2-mile buffer) to an average score of 0.1515 with a resulting total score of 4,275 functional acres. The reduction in habitat function from the Proposed Action would result in an estimated loss of 615 functional acres. Applying a 10-percent multiplier to ensure “no net loss”, a 20-percent multiplier for “credits lost due to unforeseen events”, and a 10-percent multiplier for the Steward Fund, the 615 functional acres of habitat loss would equal a total loss of 861 functional acres of sage grouse habitat for a compensatory obligation. Implementing the Proposed Action would occur over several years and concurrent reclamation would also factor in. Table 5 in Appendix A shows the annual debits from disturbance and the credits from reclamation over the life of TR1 project. The total compensatory amount for loss of sage grouse habitat from the Proposed Action was \$107,727. The cost of \$13.00 per debit would decrease over time based on the MSGOT policy guidance which recommends applying a Present-Value discount of 3 percent to the \$13.00 price if SCM pays the compensatory obligation at the beginning of the project.

Best Practices

To reduce noise impacts to sage grouse and other wildlife, SCM has already committed to follow the best practices listed in the approved SCM Fish and Wildlife Plan, pursuant to ARM 17.24.312, in the TR1 Project Application (SCM, 2017b) including:

- Minimize surface disturbance activities to the extent practicable (e.g., soil salvage, road construction, grubbing, logging, exploratory drilling, etc.) during the primary breeding season for most species in the region (i.e., April 1 through July 31);

- Honor sage grouse lek buffers to the extent practicable and schedule disturbance activities near active leks to occur outside the breeding season (March 1 through July 15; and
- Monitor all environmental variables, including vegetation, soils, wildlife (terrestrial and aquatic, as warranted), water, and air quality/meteorology to proactively mitigate mine-related impacts.

3.12.5 Unavoidable, Irreversible, and Irretrievable Impacts

Topsoil salvage during the sage grouse breeding season would be an unavoidable noise impact to sage grouse while occupying the Pasture lek. SCM could minimize potential impacts to sage grouse by following the best practices listed above to reduce some noise, but would not completely eliminate the noise during mining activity in the TR1 Project Area. Unavoidable impacts to sage grouse would be habitat loss and habitat fragmentation during the life of the TR1 Project. Impacts to sage grouse habitat and possibly to individuals would continue until the landscape and habitat is reclaimed. The sage grouse population may experience accelerated long-term declines or be eliminated from within the local area. When the TR1 Project Area has been fully reclaimed to be suitable sage grouse habitat, it may be possible for sage grouse to recolonize the habitat; however, is unlikely due to the strong site fidelity that sage grouse exhibit.

The TR1 Project has the potential to cause irretrievable impacts to sage grouse that occupy Core Area habitats within four miles of the TR1 Project Area. The addition of TR1 to the affected Core Area would increase habitat fragmentation which would exceed the 5 percent disturbance threshold reducing the effectiveness of the Core Area strategy outlined in EO 12-2015 at protecting sage grouse populations in Montana. As a result of the Proposed Action, sage grouse declines within the affected Core Areas may be exacerbated due to the increased level of disturbances that exceed the threshold.

3.13 CULTURAL RESOURCES

According to MSUMRA, “cultural resources” are any historic, archaeologic, or other cultural site. Significant sites, at a minimum, include all sites eligible for or listed on the NRHP. Cultural resources are a wide range of prehistoric and historic Native American campsites, properties of religious and cultural significance, and historic buildings, structures, and objects. Generally, any site of human activity older than 50 years is considered a potential cultural resource.

3.13.1 Analysis Area

The analysis area includes the SCM permitted mine area and some additional buffer areas included in the multiple cultural resource inventories completed since 1992.

3.13.2 Issues and Analysis Methods

- Would the project fulfill the requirements of MEPA and MSUMRA and associated federal requirements? A qualitative assessment comparing the project to the state and federal requirements was conducted.

3.13.3 Affected Environment

3.13.3.1 *Regulatory Environment*

Federal Requirements

Section 106 of the NHPA of 1966 as amended and its implementing regulations under 36 CFR 800 require all federal agencies to consider effects of federal actions on cultural resources eligible for or listed in the NRHP. Both listed and potentially-eligible properties (collectively referred to as cultural resources) are considered during Section 106 review, as are cultural resources that have not yet been evaluated for the NRHP. Section 106 mandates that consultation occur among the State Historic Preservation Officer, the Advisory Council on Historic Preservation (ACHP), Native American tribes traditionally associated with the affected land, and other “interested parties” to consider effects on cultural resources from the project.

Section 106 Consultation

The TR1 Project Area includes a federal coal lease which requires compliance with Section 106 of the NHPA and its implementing regulations under 36 CFR 800. The OSMRE is the lead federal agency responsible for compliance and consultation under the NHPA which requires consulting with ACHP and interested parties including Native American tribes who claim cultural affiliation with the SCM area (Blackfeet Nation Tribe, Chippewa Cree Tribe, the Crow Nation, Fort Peck Assiniboine & Sioux Tribes, Little Shell Chippewa Tribe, the Nakoda and Aaniiih Nations, and Confederated Salish & Kootenai Tribes of the Flathead Reservation). As part of Section 106 consultation, OSMRE would disclose potential effects on historic properties on lands with federal minerals.

Federal agencies determine whether cultural resources found to be eligible for listing in the NRHP (i.e., a historic property) would be adversely affected by mining and associated operations.

State Requirements

DEQ is the state permitting and regulating agency for the proposed project, which includes both private and federal coal leases. MSUMRA and its implementing rules require compliance with Section 106 of the National Historic Preservation Act.

Additionally, under MSUMRA, DEQ may not approve an application for strip mining when the area of land described in the application includes land which has special, exceptional, critical or unique characteristics (including archaeological or cultural significance) or where mining on such land would adversely affect the use, enjoyment or fundamental character of neighboring land

with special, exceptional, critical or unique archaeological or cultural significance, with particular attention being paid to the preservation of Plains Indian history and culture (§ 82-4-227(2), MCA). An application for a strip mine permit must include a listing, location, and description of the archaeological, historical, ethnological, and cultural values of the area of land to be affected by the proposed mining operation (ARM 17.24.1807(8)).

Montana State Antiquities Act, MCA 22-3-421 to MCA 22-3-442

The Montana State Antiquities Act and its implementing rules (ARM 10.121.901 *et seq.*) require avoiding or mitigating impacts on historic and prehistoric sites (i.e. buildings, structures, paleontological sites, and archaeological sites) on State-owned lands. The state rules consider compliance with the federal historic preservation review to be sufficient for meeting the state requirements.

Local Requirements

There are no local requirements related to cultural and historic resources that would apply to the analysis area.

3.13.3.2 Existing Conditions

A Class III cultural resource inventory for 843 acres in the southern part of the TR1 Project Area was completed as part of the Pearson Creek Amendment in 2006 (GCM Services, Inc, 2007). A portion of the northern 134-acre overburden stockpile area near Pit 4 was examined in 1998 as part of the Carbone Mine Expansion study (GCM Services, Inc, 1998). The remaining part of the 134-acre overburden stockpile area was inventoried in 2012 (GCM Services, Inc, 2013).

Numerous other cultural resource inventories have been completed for the SCM (Loendorf, et al., 1972), (Haberman, 1973), (Fox, 1977), (Carmichael, et al., 1979), and (GCM Services, Inc, 1990; GCM Services, Inc, 1998; GCM Services, Inc, 2005; GCM Services, Inc, 2006; GCM Services, Inc, 2012). An inventory associated with coal bed methane development was also completed in 2005 (Strait, et al., 2005) and recorded some of the same sites as the SCM cultural resource inventories.

The SCM area is a dissected upland area on the west side of the Tongue River Valley, known as the Tongue River Breaks. The general terrain in the Pearson Creek area is characterized by narrow, steep-sided ravines separated by high, flat topped ridges with exposed outcrops, which contains pockets of a siliceous rock called porcellanite, a primary source of prehistoric stone tool material and was integral to the cultural history of the region (GCM Services, Inc, 2007). Steep, flat-topped ridges separate Pearson Creek from other ephemeral tributaries to the north and south.

Porcellanite was used extensively by the prehistoric inhabitants because it is hard and resists weathering. Water and gravitational erosion moved the materials from the ridge tops and outcrops to the areas below. The material is more concentrated along the faces of the ridges near their crests. Some eroded benches at lower elevations also have a fair amount of

porcellanite. The lowest occurrence of porcellanite is along drainage channels (GCM Services, Inc. 2007).

The TR1 Project Area contains 27 cultural sites (24 prehistoric and 3 historic). Site 24BH2003 is a historic homestead dated to circa 1920s – 1930s, which is located mostly outside of proposed disturbance area. There are no standing structures associated with 24BH2003. There are also two historic dumps (24BH3080 and 24BH3390). The historic sites do not have potential to yield additional important information, nor were they associated with significant historical persons or events. Consequently, these sites are not recommended eligible for listing in the NRHP.

The prehistoric sites included a quarry and lithic scatter, rock shelter, stone ring, campsites, cairn, and numerous lithic scatters. Some diagnostic prehistoric artifacts were observed and collected including two Late Prehistoric Period projectile points. The prehistoric sites in the TR1 Project Area are primarily located on highly eroded settings with little or no soil. The cultural components are shallow or on the surface and these sites have little potential to yield additional information important to understanding prehistory.

Site 24BH3392 was recommended to be NRHP eligible under Criterion D because of its archaeological content and unique shelter remains, consisting of structures made of stacked juniper logs surrounding central hearth features (GCM Services, Inc. 2007).

Table 3.13-1 lists 27 identified cultural resource sites within the TR1 Project Area. Other information in the table includes the Smithsonian number, site type, land owner, legal description (to the section level), and the NRHP recommendation.

Table 3.13-1
Cultural Resource Sites in TR1 Project Area

No.	Smithsonian Site No.	Site Type	Landowner	Legal Description	NRHP Recommend
1	24BH1059	Quarry & lithic scatter	Private	Sec. 14, T8S, R39E	Not eligible
2	24BH1068	Lithic scatter	Private	Sec. 26, T8S, R39E	Yes, avoidance
3	24BH1583	Lithic scatter	State	Sec. 36, T8S, R39E	Not eligible
4	24BH1584	Rock shelter	State	Sec. 36, T8S, R39E	Not eligible
5	24BH2003	Homestead	Private	Sec. 6, T9S, R40E	Not eligible
6	24BH2318	Stone ring	Private	Sec. 15, T8S, R39E	Not eligible
7	24BH2319	Lithic scatter	Private	Sec. 15, T8S, R39E	Not eligible
8	24BH2530	Lithic scatter	Private & BLM	Sec. 35, T8S, R39E	Not eligible
9	24BH2531	Lithic scatter	Private & BLM	Sec. 35, T8S, R39E	Not eligible
10	24BH3079	Lithic scatter	Private	Sec. 6, T9S, R40E	Not eligible
11	24BH3080	Historic dump	Private	Sec. 6, T9S, R40E	Not eligible
12	24BH3081	Lithic scatter	Private	Sec. 6, T9S, R40E	Not eligible
13	24BH3210	Lithic scatter	BLM	Sec. 6, T9S, R40E	Not eligible

**Table 3.13-1
Cultural Resource Sites in TR1 Project Area**

No.	Smithsonian Site No.	Site Type	Landowner	Legal Description	NRHP Recommend
14	24BH3211	Lithic scatter	BLM	Sec. 6, T9S, R40E	Not eligible
15	24BH3212	Lithic scatter	BLM	Sec. 6, T9S, R40E	Not eligible
16	24BH3213	Lithic scatter	BLM	Sec. 6, T9S, R40E	Not eligible
17	24BH3384	Lithic scatter	State	Sec. 36, T8S, R39E	Not eligible
18	24BH3390	Historic dump	Private	Sec. 6, T9S, R40E	Not eligible
19	24BH3391	Lithic scatter	Private	Sec. 31, T8S, R40E	Not eligible
20	24BH3392	Lithic scatter & campsite	Private	Sec. 31, T8S, R40E	Eligible, D
21	24BH3396	Lithic scatter	BLM	Sec. 35, T8S, R39E	Not eligible
22	24BH3399	Lithic scatter & campsite	Private	Sec. 6, T9S, R40E	Not eligible
23	24BH3401	Stone ring & lithics	BLM	Sec. 35, T8S, R39E	Not eligible
24	24BH3404	Lithic scatter	Private	Sec. 31, T8S, R40E	Not eligible
25	24BH3410	Cairn & lithic scatter	Private	Sec. 31, T8S, R40E	Not eligible
26	24BH3411	Lithic scatter	Private	Sec. 31, T8S, R40E	Not eligible
27	24BH3699	Rock cairn	Private	Sec. 15, T8S, R39E	Not eligible

3.13.4 Direct and Secondary Impacts

Potential direct impacts to cultural resources could result from disturbance of physical elements, such as lithic scatters and rock art sites. Secondary impacts typically result from changes to the appearance of an area that has cultural significance. Literature searches and surveys have shown there are 27 cultural resource sites within the TR1 Project Area. GCM Services, Inc. (2007) recommended one site, 24BH3392, for inclusion in the NRHP. The other 26 sites have no significant resources that warrant eligibility (GCM Services, Inc. 2007).

Site 24BH3392 has significant archaeological content and unique feature types including dateable organic materials (charcoal, bone and juniper) and a variety of tools indicating prolonged occupation and various activities (not just lithic reduction). Thermal features are present in defined activity areas (e.g., the structures). Lithic materials are present, not just porcellanite. This site has potentially significant archaeological research potential (GCM Services, Inc. 2007).

3.13.4.1 No Action Alternative

Under the No Action Alternative, there would be no additional ground disturbance. The No Action Alternative would result in no additional direct or secondary impacts to the NRHP eligible site 24BH3392.

3.13.4.2 Proposed Action Alternative

Site 24BH3392 has clear archaeological research value under Criterion D (GCM Services, Inc. 2007). The site should be avoided by all mining-related activity until additional investigations are completed to determine and document the site's potential to yield further information to the understanding of local prehistory. A mitigation plan was approved in 2012. The mitigation work would be completed prior to disturbance.

3.13.5 Unavoidable, Irreversible, and Irretrievable Impacts

Site 24BH3392 would have unavoidable impacts from the Proposed Action because avoidance and minimization of impacts is not feasible. Excavation as prescribed under the approved mitigation plan would be an accepted method to resolve the adverse impacts by recovering information important to the interpretation of history and prehistory.

CHAPTER 4

CUMULATIVE, UNAVOIDABLE, IRREVERSIBLE AND IRRETRIEVABLE IMPACTS

4.1 RELATED FUTURE ACTIONS

At the time of this EIS publication, the following projects and actions would be considered related future actions to collectively include for impacts assessment. The assessment areas for cumulative impacts are shown on **Figure 4.1-1**.

4.1.1 SCM AM5 New Haul Road

SCM submitted an amendment application (referred to as AM5) to construct a haul road and associated high voltage distribution line within a transportation corridor from the SCM permit boundary south to the Montana–Wyoming border. This project is currently in the final EIS completion stage. AM5 would require approximately 4,334 acres, but construction of the haul road would only disturb approximately 970 acres. The AM5 haul road would connect SCM with the Youngs Creek Mine in Wyoming and allow SCM to extend the life of the mine to 2030 with reclamation completed by 2034. The AM5 haul road would primarily be used to transport coal from the currently-permitted Youngs Creek Mine in Wyoming to the processing facility at SCM where the coal would be processed and then transported off-site under the existing SCM permit. The AM5 area is not an expansion of the area to be mined.

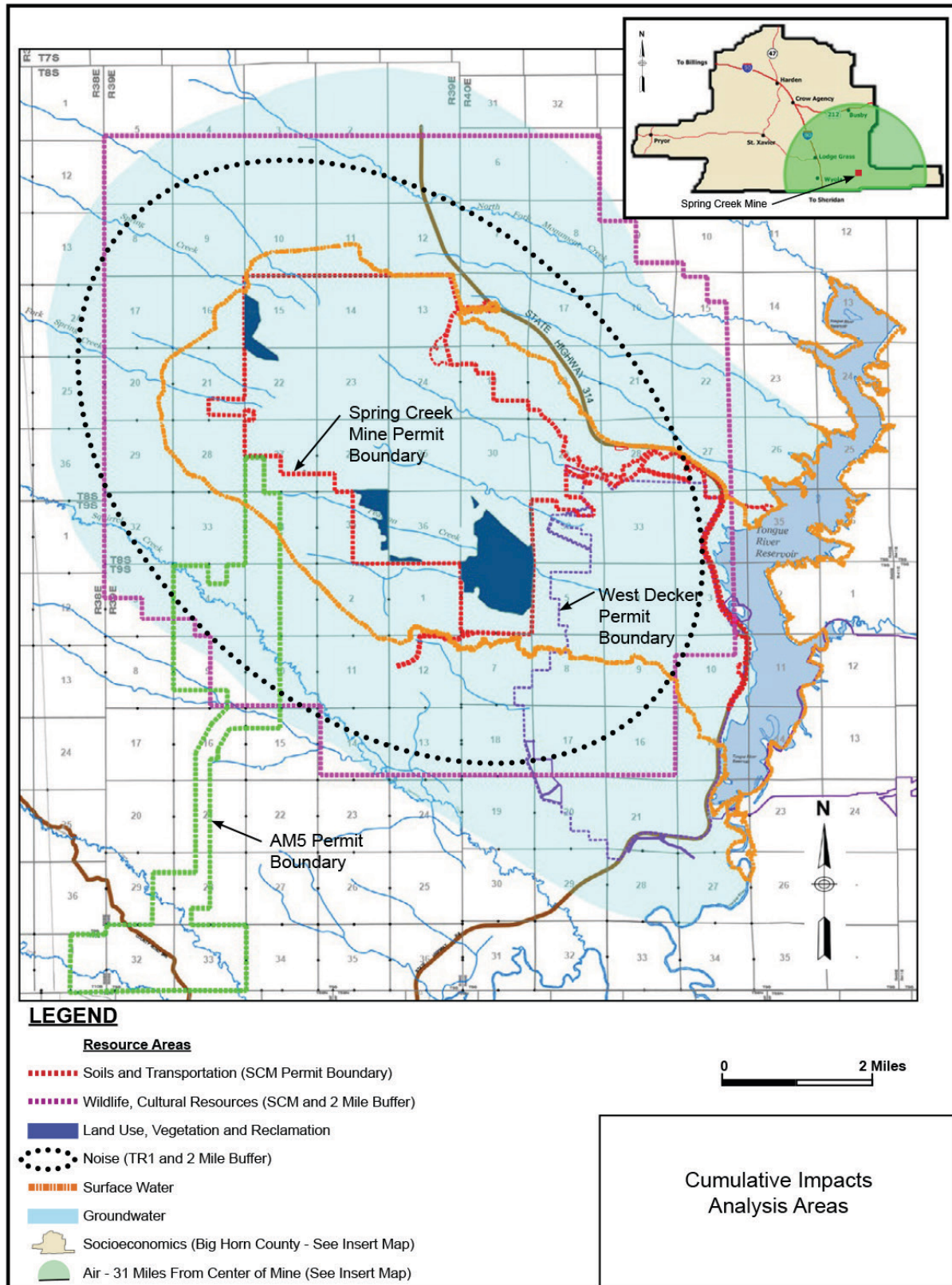
The AM5 project includes the following components: the road alignment, a high voltage distribution line, soil stockpiles, sediment and settling ponds, other sediment control features, culverts, fences, and appropriate safety features.

4.1.2 Decker Coal Mines

The East Decker and West Decker coal mines are surface coal mines owned by Lighthouse Resources Inc. and operated by the Decker Coal Company, LLC. The boundary of the West Decker Mine is approximately 1.5 miles southeast of the TR1 Project Area. The Decker Coal Mines began operating in the 1970s and have a current permitted area of approximately 11,718 acres. Since inception, the Decker mines have produced approximately 300 million metric tons of coal and have 868 million metric tons of mineable coal remaining plus additional reserves of 138 million metric tons (Decker Coal Company, 2019). The annual coal production rate is approximately 3.0 million tons.

The Decker mines currently have two coal lease applications in process: NDM 101099 to mine 17.7 million tons of coal under 310.47 acres; and NDM 108494 to mine 203.4 million tons of coal under 2,375.32 acres.

Figure 4.1-1. Cumulative Impact Analysis Areas



4.1.3 Additional Coal Leases

SCM has submitted applications for four actions with the BLM; two for coal leases and two for land lease revisions. The two coal lease applications included (1) a new application for a coal lease to mine 170.2 million tons of coal under approximately 1,262.57 acres (MTM-105485), and (2) a lease modification (MTM-110693) for 150 acres that contains approximately 7.9 million tons of mineable coal. The two land use applications included (1) an amendment to land use permit MTM-96659 that adds 175 acres but removes 320 acres, and (2) a lease modification application MTM-74913 that would add 255 acres to the existing 222.12 acres (total 477.12 acres) for areas for coal mine layback, highwall crest establishment, topsoil and overburden stockpiles, and transportation and utility corridors. SCM is currently providing data to BLM for LBA 105485.

Big Metal Coal Co. LLC and the Crow Tribe of Indians signed an exploration agreement and option to lease up to 1.4 billion tons of coal from three project areas in the southeast corner of the Crow Indian Reservation west of SCM. On June 7, 2018, Big Metal Coal provided the Crow Tribe notice it was exercising its lease option on the Upper Youngs Creek project area and extending its coal lease options for the Squirrel Creek and Tanner Creek project areas. After Big Metal Coal and the Crow Tribe sign the Upper Youngs Creek coal lease, the coal lease will require approval from the DOI and will require related regulatory actions before the lease is effective. The Big Metal Project is not under concurrent consideration by any state agency through preimpact statement studies, separate impact statement evaluation, or permit processing procedures, and as such, does not constitute a related future action for which cumulative impacts must be addressed in connection with the TR1 Project (ARM 17.4.603(7)).

4.1.4 Rail Spur

A request for a railroad spur for direct market shipping of coal reserves was mentioned as part of a Section 404 wetland permit application (USACE, 2017). Although the rail spur would originate in Wyoming, it extends into Montana where it would tie into the main railroad line just south of Tongue River Reservoir before heading south back into Wyoming.

4.1.5 Oil and Gas Activities

There are no conventional oil and gas facilities associated with the TR1 Project Area. According to Montana Board of Oil & Gas (MBOG) online records, there are five coal-bed natural gas (CBNG) wells in the TR1 Project Area (MBOG 2018). One well is in Section 6, T9S, R40E and four wells are in Section 31, T8S, R40E. Total depths from the surface of the CBNG wells range from 1,810 to 1,133 feet.

According to SCM, all five CBNG wells were closed in 2011 with the wells plugged and the areas around the wells cleaned up (SCM verbal communication with Tetra Tech and DEQ, October 18, 2018).

4.1.6 Summary

The Decker Coal mines and SCM have a combined 3,947 acres of coal leases in process to mine an additional 391 million tons of coal. This does not include the Big Metal Coal project. The AM5 haul road project would disturb approximately 970 acres within the 4,334 acres permitted boundary. Approximately 2,600 acres, or 75 percent of the total acres under consideration, are located within two sage grouse Core Areas and approximately 550 acres fall within sage grouse General Habitat. When the related future actions are added to the proposed 977 acres of disturbance for the TR1 Project, the total acreage of disturbance is approximately 4,917 acres.

4.2 AIR QUALITY IMPACTS

4.2.1 Cumulative Impacts

The area around the SCM has ongoing air quality impacts from the mining and reclamation activities at the Decker Mines, coal trucking operations at the Wolf Mountain Coal facility, and coal train transportation from both SCM and the Decker mines.

SCM's MAQP #1120-12 (DEQ 2014) allows for up to 30 million tons of coal production per year. Emissions to the local area are estimated in the air permit at 1,397 tons of particulate matter equal to or less than 10 micrometers in diameter (PM₁₀). The air permit does not include an emissions estimate for particulate matter equal to or less than 2.5 micrometers in diameter (PM_{2.5}). The air permit allows for emissions higher than those estimated in the analysis in Section 3.5.2. Air emissions from the TR1 Project (Proposed Action Alternative) would not be directly additive to SCM's current air emissions (No Action Alternative) because the TR1 Project extends the period of mining at SCM but the annual coal production rate would remain at or below the average annual production rate of 18 million tons.

The DEQ air permit included only the Wolf Mountain Coal facility for the assessment of cumulative impacts. The Wolf Mountain Coal facility is located immediately north of and adjacent to the SCM (DEQ 2014). The Wolf Mountain Coal facility was not constructed at the time of the air modeling for the permit but was permitted for 11.22 tons of PM₁₀ emissions and 1.27 tons of PM_{2.5} emissions.

The total cumulative impacts to air from the SCM and Wolf Mountain Coal facility would be 679.77 tons per year for PM₁₀, 56.08 tons per year for PM_{2.5}, and 0.0036 tons per year for NO_x. The cumulative impacts would be similar for all alternatives (the No Action and Proposed Action) because air quality would remain essentially unchanged and would not be indirectly affected by ore hauling or other mine-related road development, traffic, or reclamation activities.

4.2.2 Unavoidable, Irreversible and Irretrievable Impacts

Some impacts to air resources are unavoidable and would be associated with emissions and fugitive dust from operating a coal mine, traffic and transportation of coal, and other

reasonably foreseeable future actions. Irreversible and irretrievable commitment of resources is not applicable to air resources.

4.3 LAND USE AND RECREATION IMPACTS

4.3.1 Cumulative Impacts

The existing coal mine leases and associated land use leases for the SCM, the Decker mines, and for the additional coal leases listed in Section 4.1.3 would limit public access to federal and state lands included in the mine permit areas. Coal mine operations can disrupt other mineral development and reduce the quantity and quality of wildlife habitat, livestock grazing land, and pastureland.

4.3.2 Unavoidable, Irreversible and Irretrievable Impacts

Following final reclamation, some areas of the TR1 Project would be available to mineral development, livestock grazing, and for wildlife and recreation. The impacts on future land use of the coal mined lands would be long term.

4.4 NOISE IMPACTS

4.4.1 Cumulative Impacts

The analysis area for cumulative impacts on noise-sensitive receptors includes the SCM permitted area, the TR1 Project, and other planned or Proposed Actions within two miles that would influence the acoustical environment. Potential cumulative impacts on noise include conflicts with noise-sensitive receptors, such as sage grouse and other noise-sensitive wildlife. These impacts would be intensified where other existing sources have already affected noise levels, such as SCM operations and traffic on local roads and grazing activities

Ambient noise levels are expected to increase if proposed future actions are approved, including Decker Coal Lease Modification (NDM 101099) and the AM5 9-mile haul road that extends from Pit 1 south between the Pasture and Playa sage grouse leks (**Figure 3.6-2**). DEQ is currently completing the final EIS for the AM5 project, and construction and reclamation noise impacts greater than +10 L₅₀ dBA were predicted at the same leks analyzed for this TR1 Project EIS (i.e., Alt Pasture, Pasture and Playa).

4.4.2 Unavoidable, Irreversible and Irretrievable Impacts

For the Proposed Action, topsoil salvage operations are predicted to cause short-term wildlife noise impacts. Noise levels would exceed +10 L₅₀ dBA above ambient noise at the Pasture lek (**Table 3.6-3**) located within 1.5 miles of Pits 1 and 2 (**Figure 3.6-2**). Topsoil salvage activities would be predicted to result in an unavoidable and irretrievable noise impacts to nearby sage grouse while occupying the lek. Best practices would be incorporated into the Proposed Action (Section 3.6.4.2) to reduce some of the noise of the TR1 Project pre-strip operations.

4.5 SOCIAL AND ECONOMIC IMPACTS

4.5.1 Cumulative Impacts

The TR1 Project would extend the mine life by at least 4 years to 2031, which would extend the employment of approximately 340 people (assuming a production rate of 18 million tons per year) by 4 years. The money paid by SCM for federal, state, and local taxes and royalties on the coal mined would continue for at least 4 more years over the No Action Alternative. Cumulative impacts from the TR1 Project and other reasonably foreseeable future projects for Big Horn County would have social and economic benefits.

4.5.2 Unavoidable, Irreversible and Irretrievable Impacts

The TR1 Project would have an unavoidable, irreversible, and irretrievable commitment of 72 million tons of mineable coal resources in Big Horn County, Montana.

4.6 SOIL IMPACTS

4.6.1 Cumulative Impacts

Cumulative impacts to soil resources would include impacts from the TR1 Project together with impacts to soils from coal mining and reclamation activities at the Decker mines, planned coal mining and reclamation activities for the SCM and Decker mines (associated with existing coal leases), and construction and operation of the proposed AM5 haul road. Primary soil impacts from these past, present, and reasonably foreseeable future actions would be increased soil erosion and reduced soil productivity compared to undisturbed sites. Soil erosion has a short-term minor adverse impact on this resource and would begin to return to natural conditions in a few years after vegetation is reestablished. SCM has been successful in reclaiming mined areas with vegetation. Reduction of soil productivity is a minor but long-term adverse impact that typically takes much longer to return to natural conditions.

Soil salvage, topsoil stockpiling, and soil distribution activities would continue at the SCM and the Decker mines. Construction of the AM5 haul road and its use would also result in impacts to soils. There would be increased cumulative impacts to soils with continued and potentially higher rates of coal mining and coal transportation in the southern Big Horn County area. Soil impacts should remain local with few offsite impacts from increased sedimentation because soils are handled using best management practices and in compliance with MSUMRA rules and regulations.

4.6.2 Unavoidable, Irreversible and Irretrievable Impacts

Soils would have unavoidable impacts during the life of the TR1 Project through final reclamation. Most impacts to soils are not irreversible, but the soil properties and processes would take prolonged periods (decades) to reestablish to pre-disturbance conditions once the soil has been redistributed, seeded, and reclaimed. Soil chemical, physical, and nutrient properties (soil productivity) would be adversely impacted from soil salvage operations and

from stockpiling. Soil stockpiles would be graded and seeded with temporary vegetation to stabilize the soil and reduce erosion from the piles.

4.7 TRANSPORTATION IMPACTS

4.7.1 Cumulative Impacts

Decker Mine and SCM both ship coal via a dead-end BNSF spur (**Figure 3.9-1**). The Decker Mines produced approximately 4.2 million tons of coal in 2017 and 3.2 million tons in 2016. The SCM produced 12.7 million tons of coal in 2017 and 10.2 million tons in 2016 (BNSF 2018).

The analysis area for cumulative impacts for transportation would be the same as described in Section 3.9.1. Cumulative impacts to transportation would be related to coal shipped from the SCM, the Decker Mines, and the coal hauled to the SCM from the Youngs Creek Mine via the AM5 haul road. If the AM5 haul road from Youngs Creek Mine to SCM is approved and used, cumulative impacts to transportation would be increased for the extended life of the mine. The additional 4 years of shipping coal off-site from the SCM for the TR1 Project would have a minor adverse impact.

4.7.2 Unavoidable, Irreversible and Irretrievable Impacts

No unavoidable, irreversible, or irretrievable adverse impacts related to transportation are anticipated for any of the alternatives.

4.8 VEGETATION AND RECLAMATION IMPACTS

4.8.1 Cumulative Impacts

The cumulative impacts of the TR1 Project and the other reasonably foreseeable future actions would be additional weed infestations from additional areas to reclaim, a greater area where native plants would be removed, and an extending time until final reclamation would occur. Additional labor and materials (herbicides, fuel, native seed, erosion control products) would be required for the SCM, Decker mines, the AM5 haul road, and any future coal mining to maintain compliance with reclamation of the disturbed areas. Essentially, greater areas disturbed for coal mining and related transportation would require longer periods of impacts to vegetation. The cumulative impacts to vegetation and reclamation would be expected to continue through final reclamation.

4.8.2 Unavoidable, Irreversible and Irretrievable Impacts

There would be unavoidable adverse impacts to vegetation resources for the Proposed Action from the physical removal of the vegetation and disturbance of the 977 acres. Impacts to vegetation would remain through mining, but reclamation plans and past vegetation reclamation success at SCM suggest the vegetation communities would reestablished. The designated wildlife postmining land use with the sagebrush and other shrub components would take several years longer to regenerate compared to grazing or pasture lands because of the additional time required for reestablishing shrub species.

4.9 WATER IMPACTS

4.9.1 Cumulative Impacts

The primary cumulative impacts for ground water from the Proposed Action and other coal mining at the Decker mines would be from the removal of the coal and overburden aquifers and replacing them with backfilled spoil materials. Continued coal mining in the SCM and Decker mine areas, together with future coal mining, would result in an increased cumulative amount of backfilled coal seams in the area draining to the Tongue River Reservoir. The extent of water level drawdown in the coal and shallow aquifers in the SCM and Decker mines area would be expected to increase (greater depth to ground water) because of the mining and dewatering in the active mine pits. Where concurrent ground water drawdown from the SCM and Decker mines overlap, additional water level declines would be expected.

Another cumulative impact to ground water quality and quantity has been from CBNG development and ongoing mining operations at the Spring Creek and Decker mines. Because CBNG production requires substantial pumping to reduce pressure head and release the natural gas, widespread water level decline has occurred in coal aquifers in the Decker area (DEQ, 2015). The premine potentiometric surface had up to 150 feet of hydrostatic head above the top of the A-D coal seam (SCC and WWC Engineering, 2017).

Potential cumulative impacts for surface water would occur for the TR1 Project disturbance area and the Decker mines within the local drainage basins adjacent to the Tongue River Reservoir. Mining related surface water impacts would continue through the life of mine operations in these drainages below the mines but would reduce with successful reclamation. Cumulative mining impacts to surface water resources would not be expected to be measurable in the Tongue River Reservoir because of the incorporation of sedimentation basins and stormwater best management practices by the SCM and Decker mines.

4.9.2 Unavoidable, Irreversible and Irretrievable Impacts

Ground water levels would eventually return to near premine levels after closure and reclamation, which would take many years. Ground water and surface water impacts from the TR1 Project would primarily occur during active mining and dewatering of the pits; impacts would diminish with reclamation. Similarly impacts to water quality would occur during mining and for some years thereafter but eventually water quality would improve through flushing, adsorption/desorption, precipitation/dissolution and other complex geochemical processes. During the period when ground water levels and quality are reduced, the resource is unavoidably diminished.

4.10 WILDLIFE IMPACTS

4.10.1 Cumulative Impacts

The analysis area for cumulative impacts on wildlife is the expanded area surveyed from 2014 through 2017 during annual wildlife monitoring for SCM, which encompasses 63,458 acres (Great Plains Wildlife Consulting, 2019).

The primary cumulative impacts to wildlife would be temporary habitat loss and habitat fragmentation from the SCM, Decker mines, the proposed AM5 haul road (if a permit is granted), and potential future coal mining in the area. Cumulative impacts would also result from mining and other land use changes and development in Squirrel Creek, Youngs Creek, and Little Youngs Creek, which support cottonwood gallery forests. The 977 acres of habitat temporarily lost under the Proposed Action would be additive to the habitat impacted by current and future coal mining and the other surface disturbing activities like construction of the AM5 haul road. Impacts to wildlife would be reduced after mining has finished and reclamation completed at the mines. Contemporaneous reclamation and specific wildlife conservation measures at SCM would further reduce the impacts from the TR1 Project.

There would be no cumulative impact to threatened and endangered species because none would be impacted by the Proposed Action.

Species of concern, migratory birds, and game birds associated with grasslands, sagebrush, and areas with trees would be impacted. The cumulative impacts to the landscape would reduce sage grouse habitat functions within the 28,220-acre wildlife analysis area (TR1 plus a 2-mile buffer). The proposed AM5 haul road, Decker mines, and oil and gas development would also adversely impact sage grouse habitat. SCM agreed to a total compensatory mitigation obligation for the unavoidable adverse impacts to sage grouse habitat associated with their Proposed Action. The compensatory obligation was based on an estimated loss of 615 functional acres and a total compensatory amount of \$107,727 which would be paid to the MSGHCP Stewardship Fund.

The SCM and Decker mines area contains high and moderate value big game winter range. The TR1 Project Area (977 acres) has 9 acres of high value and 968 acres of moderate value habitat. Contemporaneous reclamation at SCM would reduce the impact of temporary habitat loss. Habitat conservation measures implemented under the HRRP and the regional Conservation Strategy would also help offset impacts to wildlife. The Proposed Action would not result in an increase in road killed big game. Big game in the SCM and Decker mines area have likely habituated to the long term, ongoing mine disturbance throughout the area.

Mining activity in the analysis area could result in adverse impacts to raptor populations because of the cumulative number of nests lost. The TR1 Project Area contains one historic turkey vulture nest but this would not be a major loss in the analysis area. All mines in the cumulative impacts analysis area have raptor conservation measures required under their

permit, including monitoring, habitat reclamation, APLIC-compliant power lines, and nest mitigation to help minimize long term adverse impacts to raptor populations.

4.10.2 Unavoidable, Irreversible and Irretrievable Impacts

Unavoidable impacts to wildlife and greater sage grouse would be temporary habitat loss and habitat fragmentation during the life of the TR1 Project and other surface disturbance projects in the cumulative impacts analysis area. Impacts to wildlife would continue until the topography and habitat are reclaimed. When the TR1 Project Area has been fully reclaimed, it would be possible for wildlife, including sage grouse, to recolonize the habitat. Successful recolonization would depend upon the populations within close proximity of the TR1 Project.

CHAPTER 5

REGULATORY RESTRICTIONS

MEPA, as amended, requires state agencies to evaluate any regulatory restrictions they propose on the use of an applicant's private property (75-1-201 (1)(b)(iv)(D), MCA). Alternatives and mitigation measures are designed to further protect environmental, cultural, visual, and social resources, but they add to the cost of the project. MEPA requires state agencies to evaluate any regulatory restrictions proposed to be imposed on the proponent's use of private property (75-1-201(1)(b)(iv)(D), MCA). Alternatives and mitigation measures required by Federal or State laws and regulations to meet minimum environmental standards do not need to be evaluated for extra costs to the proponent.

The TR1 Project Area includes lands within sage grouse core, general, or connectivity habitat. The TR1 Project is exempt from EO-10-2014 because it was received and deemed complete in 2013 before the EO effective date. However, under MEPA and MSUMRA, DEQ evaluated potential impacts to sage grouse and related resources to consider alternatives and mitigations to the Proposed Action. The TR1 Project was determined to result in a reduction of sage grouse habitat functions estimated at a loss of 615 functional acres. The total compensatory amount was determined based on MSGOT policy and was estimated at \$107,727 for the loss of the 615 functional acres, plus the policy multipliers, for a total of 861 functional acres.

SCM's requirement to mitigate for sage grouse impacts originates in MSUMRA (Section 82-4-227(2)(a) and 82-4-231(10)(j), MCA). DEQ has identified the Proposed Action with sage grouse mitigation measures as the preferred alternative, these measures would be a condition of the permit approval. Additionally, SCM has agreed to fulfill the requirements of the mitigation measures. The sage grouse mitigation measures are required by State law to meet minimum environmental standards; thus, the conditions should not constitute a compensable taking of private property.

The analysis for compliance with the Private Property Assessment Act (PPAA) is a two-step process. An initial analysis must be performed to determine whether the Proposed Action is covered under the PPAA. If the TR1 Project is covered, an analysis must then be performed to determine whether the Proposed Action has takings implications. DEQ completed a Private Property Assessment Checklist on March 4, 2020. The review indicated that the conditions and requirements of the permit do not constitute "action with taking or damaging implications" under the PPAA.

CHAPTER 6 LIST OF PREPARERS

6.1 PREPARERS AND REVIEWERS

Table 6.1-1 lists the professionals, their roles, and qualifications of those who assisted in preparing the EIS.

**Table 6.1-1
List of Preparers**

Name	EIS Responsibility	Education, Highest Degree; Years of experience
DEQ Specialists		
Jennifer Lane	MEPA Project Coordinator	B.A., Environmental and Social Justice; 5 years
Jeff Blend, Ph.D.	Socioeconomics	Ph.D., Agricultural Economics, Resource Economics, 20 years
Julian Calabrese	Soils and Reclamation	B.S., Land Resource Environmental Science Minor, Soils; 18 years
Ric Casteel	Mine Plan and Engineering	MLA., Landscape Architecture B.S. Engineering; 30 years
Sarah Christopherson	Staff Attorney	J.D. Law Master's Environmental Law and Policy; 3 years
Ed Coleman	Approving Official	B.S., Forestry; 20 years
Emily Hinz	Surface Water	Ph.D., Geophysics; 8 years
Kevin Krogstad	Geology and Ground Water	B.S., Earth Sciences; 25 years
Mark Lucas	Staff Attorney	J.D. Law M.S., Environmental Law; 19 years
Alex Mackey	Land Use, Vegetation, Reclamation	B.S., Forestry; 11 years
Ben Schmitt	Wildlife, Sage Grouse	M.S., Fisheries and Wildlife; 8 years
Bob Smith	Permit Coordinator	B.S., Occupational Safety & Environmental Health; 16 years
Jon Staldine	MPDES	M.S., Natural Resources; 7 years
James Strait	Cultural Resources	M.A., Archaeology; 24 years
Chris Yde	Wildlife	M.S., Fish and Wildlife Management; 39 years, Retired
Tetra Tech Team Specialists (includes Big Sky Acoustics and WEST)		
J. Edward Surbrugg, Ph.D.	Project Manager, Soils	Ph.D., Soil Science; 35 years
Larry Cawfield	Water Resources	M.S., Civil Engineering; 34 years
Ruthanne Coffey	Water Resources	M.S., Hydrogeology; 5 years

**Table 6.1-1
List of Preparers**

Name	EIS Responsibility	Education, Highest Degree; Years of experience
Mike Egan, PG	Geology	B.S., Geology; 30 years
Cameo Flood	Land Use and Socioeconomics	B.S., Forestry; 25 years
Lynn Peterson	Cultural Resources	M.S., Anthropology; 30 years
Wendy Rieth	Wildlife Resources (other than greater sage grouse)	M.S., Wildlife Biology; 13 years
Kathie Roos, P.E.	Transportation and Safety Resource Specialist	B.S., Chemical Engineering; 23 years
Nicholas S. Sovner	Vegetation, Reclamation	B.S., Rangeland Resources & Wildland Soils; 14 years
Rob Tisdale, Ph.D.	Air Quality	Ph.D., Chemistry; 22 years
Sean Connolly, Big Sky Acoustics	Noise	M.S., Mechanical Engineering; 24 years
Kristin Connolly, Big Sky Acoustics	Noise	B.A., Molecular, Cellular, and Developmental Biology; 27 years
Chad LeBeau, WEST	Wildlife Resources, greater sage grouse	M.S., Ecosystem Science & Management; 10 years

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APPENDIX A
TR1 GREATER SAGE GROUSE HABITAT ASSESSMENT



TECHNICAL MEMORANDUM

Date: March 26, 2019

To: Edward Surbrugg, Tetra Tech

From: Chad LeBeau; WEST, Inc.

Subject: TR1 Greater Sage-Grouse Habitat Assessment

introduction

In 2010, the greater sage-grouse (*Centrocercus urophasianus*); hereafter sage-grouse) were identified as a candidate for listing under the federal Endangered Species Act (ESA). As a result, the State of Montana established Executive Orders 12-2015 and 21-2015 to implement the Montana Sage-Grouse Conservation Strategy. The Executive Orders recognize existing land uses and activities established prior to the Executive Orders (e.g., January 1, 2016). The Spring Creek Mine (SCM) applied for the proposed Major Revision TR1 project (TR1) on March 2, 2012, exempting it from stipulations identified within the Executive Orders and consultation through the regulatory framework. However, Montana Department of Environmental Quality (DEQ) identified potential significant impacts to sage-grouse as defined in the Montana Environmental Policy Act (MEPA) as a result of the proposed development of TR1.

This technical memo quantifies the amount of sage-grouse habitat likely to be affected by direct and secondary impacts associated with SCM's proposed TR1 and identifies mitigation approaches to offset those potential impacts. This habitat evaluation includes and integrates the implemented recovery and replacement measures of the Habitat Recovery and Replacement Plan (HRRP) stipulated by the Bureau of Land Management (BLM) for the development of the TR1 as described below. In addition, this evaluation considers the conservation measures implemented through the Thunder Basin Grasslands Prairie Ecosystem Association Candidate Conservation Agreement with Assurances (CCAA) as the measures related to the TR1 development. A functional acre approach was used to quantify the potential impacts associated with TR1 while integrating the HRRP stipulations and conservation measures employed through the CCAA.

Background

The SCM is in Big Horn County, Montana and has been in operation since 1979. Currently, the approved permit boundary of the mine encompasses 9,220 acres. In 2012, SCM submitted the TR1 Major Revision application to DEQ to add 977 acres of additional disturbance within the

existing permit boundary. TR1 would extend the life of the mine from 2022 to 2027 and increase the disturbance area from 6,085 to 7,062 acres.

TR1 occurs within the range of sage-grouse and the proposed TR1 mining activities are expected to impact sage-grouse habitat. There are three separate mitigation or conservation plans associated with development of the TR1 lease. The HRRP stipulations are directly tied to the coal lease and development of the TR1. The CCAA is part of a larger conservation strategy associated with impacts to sage-grouse from SCM and other anthropogenic activities in the area. At the request of DEQ, SCM also submitted a Species of Special Interest Monitoring and Management Plan (SOSI Plan) to provide broad, long-term direction for management of wildlife species of special interest that occur within the SCM wildlife monitoring area.

Habitat Recovery and Replacement Plan

In 2008, SCM applied to the BLM for a coal lease modification (MTM-069782) and an application to amend Land Use Lease MTM-74913. In 2010, the BLM completed an Environmental Assessment (EA) that analyzed the environmental impacts of modifying the existing leases to include a tract of Federal coal reserves within SCM's permit boundary and issued a Finding of No Significant Impact (FONSI; BLM 2010). As part of the environmental review, a HRRP was developed between SCM and the BLM, in consultation with Montana Fish, Wildlife, and Parks (FWP) and DEQ, to mitigate the loss of sage-grouse and other wildlife habitats within the disturbance areas. The HRRP stipulations for mitigation were incorporated into the coal lease and Land Use Lease amendment making the HRRP a requirement of the TR1 lease (BLM 2010).

According to SCM, the mitigation plan outlined in the HRRP has been implemented to the extent possible within the SCM permit area and surrounding lands owned by the mine (Table 1). Monetary compensation into the Landowner Incentive Program (LIP) is one mitigation measure that has not been fulfilled.

Table 1. Spring Creek Mine Habitat Recovery and Replacement Plan (HRRP) commitment list for amending land use lease MTM-74913 & LBM MTM-0698782 from EA# MT-DOI-BLMMT-020-2010-29.

Project	Implementation Date	Status
Continue to investigate several methods of sagebrush establishment	2009 to 2013	Completed
Enhance existing reclamation with sagebrush interseeding	2009 to 2016	Completed
Removing Pastureland Seeding from Reclamation Plan	August 2008	Completed
Revise Reclamation Plan to balance land use types such as Pastureland	June 2011	Completed
Get MDEQ approval to use sagebrush grassland or other new seed mixes	August 2008	Completed
Fund \$12/acre for LIP program for land to be disturbed by mining in LBM area.	At the time funds are needed	LIP program status unknown
Provide FWP with a list of landowners who have expressed an interest in participating in conservation programs	SCM provided list to BLM	LIP program no longer exists

Table 1. Spring Creek Mine Habitat Recovery and Replacement Plan (HRRP) commitment list for amending land use lease MTM-74913 & LBM MTM-0698782 from EA# MT-DOI-BLMMT-020-2010-29.

Project	Implementation Date	Status
Provide Mechanical Manipulation Study Plan to FWP, & BLM areas inside and possibly outside the LBM area.	Spring 2013	Ongoing and will be completed 2019
SCM will consult with agencies to see if there is any benefit to removing existing fencing in Sections 6 & 31	Spring 2013	Completed
Any new fencing will be constructed with a wildlife friendly design	Summer 2012	Completed
Evaluate during next grazing agreement renewal (annually) in Sections 6 & 31 to ensure sage-grouse habitat is protected.	Spring 2009 to 2012	Completed
Final habitat recovery will be achieved during Phase IV bond release of current mining and the LBM area	Reclamation Commitments in TR1 Major Permit Revision	Completed
Continue to treat water in ponds and stored tires with mosquito larvicide	Annually	Ongoing
Additional winter/spring wildlife monitoring plan for 2008	Spring 2008	Completed

Candidate Conservation Agreement with Assurances

In addition to the HRRP, SCM and its parent company, Navajo Transitional Energy Company (NTEC), entered into a voluntary 30-year conservation plan called the Thunder Basin National Grassland CCAA in 2017 to implement a landscape-scale conservation strategy intended to achieve durable conservation benefit for the sage-grouse population affected by the SCM, Decker Mines, and other anthropogenic-related activities (U.S. Fish and Wildlife Service [USFWS] 2017). The conservation strategy was developed as a collaborative effort among the USFWS, BLM, and U.S. Forest Service, along with multiple other state, federal, and non-governmental partners in the region to provide regulatory relief from potential take violations under the ESA in exchange for implementing the voluntary actions (Montana Sage Grouse Oversight Team [MSGOT] 2018). These conservation measures are being implemented by SCM in the CCAA area and are outlined in the Final EA (USFWS 2017) and the Certificate of Inclusion and Certificate of Participation (CI/CP 2016).

Examples of voluntary conservation measures to which SCM is currently committed include focused conifer removal to enhance sagebrush-steppe habitats; cheatgrass treatment; additional sagebrush and forb reclamation efforts; road closures and reclamation; protection of sagebrush habitats known to support targeted species; use of conservation easements to protect certain habitats of special value; and protection of green areas that could serve as important foraging habitat for sage-grouse broods and other species (CI/CP 2016).

Species of Special Interest Monitoring and Management Plan

In addition to the HRRP and CCAA, DEQ requested that SCM develop a general management plan as part of the MSUMRA permitting process. SCM developed the SOSI Plan with feedback from DEQ and the USFWS. The SOSI Plan ensures all entities involved in the leasing, permitting,

and mining of coal comply with applicable federal and state statutes, regulations, and other directives regarding species of interest. The SOSI Plan reiterates and expands upon information found in the TR1 application. The intent of the SOSI Plan is to provide broad, long-term direction for:

1. Monitoring populations of species of special interest within the SCM wildlife monitoring area;
2. Avoiding, minimizing, or compensating for potential impacts to these species due to mine operations; and
3. Maintaining, enhancing, and/or reclaiming habitats upon which such species depend (SOSI 2017).

Methods

There are different methods used for quantifying the extent of direct and secondary impacts to sage-grouse habitat from anthropogenic activities. For example, a physical acre approach was used for the SCM AM5 EIS to quantify impacts to sage-grouse habitat (DEQ 2018). However, the physical acre approach does not incorporate secondary impacts associated with a proposed development, nor does it place the proposed development in context with the surrounding landscape.

Following the issuance of Executive Orders 12-2015 and 21-2015, the Montana Sage Grouse Habitat Conservation Program (MSGHCP) developed a Habitat Quantification Tool (HQT) to quantify the gains and/or losses of sage-grouse habitat caused by anthropogenic activities (MMP 2018). This method incorporates species population and habitat variables that are descriptive of seasonal sage-grouse habitats. It also incorporates direct and secondary impacts of anthropogenic features. Collectively, these landscape characteristics can be used to evaluate changes in habitat function.

Pursuant to MEPA, DEQ consulted with the MSGHCP on October 2, 2018. The MSGHCP recognized that TR1 was outside the requirements of Executive Orders 12-2015 and 21-2015 and that applicant consultation was not required (personal communication J. Lane 2018). However, DEQ determined using a functional habitat quantification methodology similar to the HQT for the TR1 EIS impacts analysis would more accurately reflect changes in habitat function within TR1 and surrounding landscape where the various conservation plans have been implemented than the physical acre approach. Therefore, a functional acre assessment was used to estimate the direct and secondary impacts associated with TR1 and to evaluate the impacts relative to the surrounding landscape, which incorporated the mitigation and conservation activities associated with the HRRP, CCAA, and SOSI.

Baseline habitat conditions were first evaluated for the TR1 area using a two-mile buffer to include both direct and secondary impacts associated with mine activity; the extent of secondary impacts associated with mining activities is assumed to be two miles (HQT 2018). Changes in habitat function were evaluated for the area that included areas with implemented HRRP stipulations and areas in the CCAA.

Habitat function was assessed within 7.5 m x 7.5 m grid cells. Numerous variables were calculated at each grid cell to evaluate habitat function and categorized into population and habitat variables and anthropogenic variables (Table 2). These variables were selected based on best available science and followed Montana's HQT definitions (see HQT 2018). The distance to lek variable was calculated to confirmed active leks identified during SCM wildlife monitoring (GPWC 2018). In addition, juniper percent cover was calculated as the density within a 1.0 km radius because sage-grouse likely avoid areas with higher densities of junipers (Wyoming HQT 2015). All other variables were calculated in the same manner as presented in Montana's HQT (HQT 2018).

Population and habitat variables at each grid cell were given functional scores (ranging from 0–1) based on their perceived habitat function (Table 2). The functional scores for each population and habitat variable were averaged to give each cell a total habitat functional score (ranging 0–1, with higher scores indicating higher-quality habitat). Similarly, anthropogenic variables were given functional scores (ranging from 0–1) and combined using multiplication to give each cell a total anthropogenic score (ranging 0–1, with higher scores indicating higher-quality habitat). The total habitat score and total anthropogenic score at each cell were multiplied to quantify the baseline functional habitat prior to the addition of the TR1 disturbance to the landscape (Table 2, HQT 2018). This procedure produced a score of 0 to 1 for each grid cell. These scores were then averaged to produce the baseline functional habitat score. The baseline functional habitat score was then multiplied by the number of acres within TR1 and the two-mile buffer to produce a quantifiable functional acre score.

The habitat function associated with the development of TR1 was evaluated after the baseline habitat functional score calculation. The modification of habitat associated with TR1 adjusts the baseline functional habitat score to represent habitat conditions post development of TR1. Post-development assumes mining activity would occur in TR1 and habitat directly associated with TR1 would be removed as mining progresses. According to the TR1 application, reclamation of TR1 is expected to begin between 2020 and 2024 and continue through the end of Phase IV (i.e., Final Reclamation) bond release. Final bond release (Phase IV bond release) occurs when conditions specified in MSUMRA and its implementing rules have been met, as specified by ARM 17.24.1116(d). However, the habitat disturbed by TR1 is expected to be restored to the extent that it would support sage-grouse when Phase III bond release is achieved (see ARM 17.24.1116(c)). The scoring calculation also assumes reclamation activities will not support sage-grouse until the reclaimed areas have matured and are eligible for Phase III bond release. The conditions required for Phase III bond release are listed in ARM 17.24.1116(c) and include a minimum responsibility period of 10 growing seasons after seeding, as specified by ARM 17.24.725(2). The difference between the baseline functional habitat score and the post-development functional habitat score provides an estimate of the functional acres lost due to the proposed TR1 mining and reclamation activities.

One functional acre lost is equivalent to one mitigation debit. Montana Mitigation System Policy Document for Greater Sage-Grouse (MMP 2018) applies different multipliers to the mitigation debits to calculate total compensatory mitigation obligation. Compensatory mitigation is defined as actions that provide compensation for unavoidable adverse impacts to species or their habitats

and when taken in advance of the impact through activities that preserve, enhance, restore, and/or establish habitat (MMP 2018). There are different options to fulfill compensatory mitigation obligations through the MMP, including permittee-responsible actions, which include conservation easements or land restoration. Another option is financial contributions to the MSGHCP Stewardship Fund (MMP 2018).

The multipliers identified in the MMP were used to calculate the compensatory mitigation obligation of the development of TR1 (MMP 2018). A 10% multiplier was used to ensure there is no net loss to habitat and a 20% multiplier was used to account for credits lost due to unforeseen events. The cumulative 30% multiplier (i.e., 1.3) was applied to the mitigation debits to calculate the total compensatory obligation. An additional 10% multiplier can be applied if compensatory mitigation is achieved through payments to Montana's Stewardship Fund (MMP 2018).

Table 2. General description of population, habitat, and anthropogenic variables used to assess changes in functional habitat associated with TR1. All variables except distance to active leks and percent juniper cover were adapted from the Montana HQT (HQT 2018).

Population and Habitat Variables	
Variable	Description
Distance to Lek	Distance to active leks (GPWC 2018)
Breeding density	Relative breeding densities, using leks as a focal point
Distance to upland	Distance from mesic habitats to suitable upland habitat
Unsuitable lands	Lands that do not provide GRSG habitat
Sagebrush abundance	Proportion of sagebrush habitat within a 1.0-km radius
Sagebrush percent cover	Percent sagebrush cover
Sagebrush height classes	Sagebrush Height (cm)
Juniper percent cover	Percent juniper cover within a 1.0-km radius, adapted from Wyoming HQT (2015).
Anthropogenic Variables	
Variable	Description
Oil and gas well density	Number of well pads within 1.0-km
Distance to tall structure	Distance to tall structures such as communication and weather towers
Distance to transmission	Distance to above-ground linear features such as transmission lines and associated structures
Wind facilities	Percent disturbance due to wind energy infrastructure
Distance to Moderate Roads and Railways	Distance to nearest moderate road or railway
Distance to Pipelines	Distance to nearest pipeline, fiber optic cable, or other buried utility
Agriculture, mine, and other large-scale land conversion activities ¹	Direct footprint and density (%) of land conversion due to agriculture, mining within a 3.2-km radius.
Distance to major roads	Distance to nearest major road
Compressor stations and other noises	Distance to nearest noise producing disturbance
All other disturbances	Disturbance not included above.

Table 2. General description of population, habitat, and anthropogenic variables used to assess changes in functional habitat associated with TR1. All variables except distance to active leks and percent juniper cover were adapted from the Montana HQT (HQT 2018).

¹The currently permitted disturbance at Spring Creek Mine was included in this category as existing disturbance because the currently permitted disturbance would occur with or without the approval of TR1. The aim of this assessment was to evaluate the effects of TR1.

Results

The total number of acres within the TR1 area and the two-mile buffer was 28,220 acres. The average baseline habitat function score for this area was 0.1733, resulting in a score of 4,891 functional acres (Table 3, Figure 1). The addition of TR1 mining to the landscape reduced habitat function within TR1 and the two-mile buffer to an average score of 0.1515, resulting in a score of 4,275 functional acres (Table 3; Figure 2). The reduction in habitat function for the TR1 evaluation area resulted in a loss of 615 functional acres (e.g., debits).

Table 3. Summary of Functional Acres

Project	Period	Acres within Two Miles of TR1	Average Habitat Function Score	Functional Acres
TR1	Pre-development (Baseline, 2019 projected)	28,220	0.1733	4,891
	Post-development (Phase IV, 2034 projected)		0.1515	4,275
Difference				615

Application of the 10% multiplier to ensure no net loss and the 20% multiplier to account for credits lost due to unforeseen events (i.e., 30% multiplier) to the 615 mitigation debits results in a total of 800 debits in compensatory obligation. If the additional 10% Steward Fund multiplier is applied, the total debits associated with TR1 would equal 861 debits (Table 4). Following the MMP, a total of 13,019 net debits (debits minus credits) would result from the TR1 development and reclamation activities (Table 5).

Table 4. Calculation of Total Compensatory Mitigation Obligation.

Project	Functional Acres	No Net Loss Multiplier	Unforeseen Events Multiplier	Contribution to the Stewardship Fund Multiplier	Total Compensatory Mitigation Obligation
TR1	615	10%	20%	-	800
	615	10%	20%	10%	861

Note: cost per debit decreases over time because the MSGOT policy guidance was followed. MSGOT applies a present value discount of 3% to the price of a credit applied to offset debits in future years when developers make a financial contribution to the Stewardship Account or purchase credits in the current year.

Table 5. Scheduled Debits, Credits, and Net Debits and Cost per Debit for TR1 Activities (assumes \$13.00 per debit following the Montana Mitigation System Policy Document for Greater Sage-Grouse)

Activity	Year	Debits from Disturbance	Credits from Reclamation	Net Debits (Debits – Credits)	Cost per Debit (\$)	Total Debit Cost (\$)
First Area Reclaimed	2020	138	0	138	13.00	11,193
	2021	208	0	208	12.61	10,857
	2022	287	0	287	12.22	10,521
	2023	342	0	342	11.83	10,186
	2024	404	0	404	11.44	9,850
Second Area Reclaimed	2025	480	0	480	11.05	9,514
	2026	554	0	554	10.66	9,178
	2027	620	0	620	10.27	8,842
	2028	690	0	690	9.88	8,507
	2029	730	0	730	9.49	8,171
Third Area Reclaimed & 100% Disturbed	2030	764	13	752	9.10	7,835
	2031	764	13	752	8.71	7,499
	2032	797	20	777	8.32	7,164
	2033	797	22	775	7.93	6,828
	2034	861	77	784	7.54	6,492
Waiting for 10-Year Maturity	2035	861	91	770	7.15	5,479
	2036	861	104	757	6.76	4,540
	2037	861	177	684	6.37	3,675
	2038	861	212	649	5.98	2,883
	2039	861	471	390	5.59	2,166
	2040	861	471	390	5.20	1,612
	2041	861	471	390	4.81	1,118
	2042	861	485	376	4.42	685
	2043	861	540	321	4.03	312
	2044	861	861	0	3.64	-
				13,019		107,727

Discussion

If approved, the development of TR1 mining is expected to reduce sage-grouse habitat function within TR1 and the two-mile buffer of TR1. A portion of the analysis area overlaps the CCAA conservation area and areas where HRRP and SOSI stipulations have been implemented. It is possible that TR1 mining would reduce the effectiveness of these conservation measures in this area.

Recommendation

Future conservation actions associated with the HRRP and CCAA should be implemented beyond the two-mile buffer area of direct and secondary impacts associated with TR1 to maximize their effectiveness at offsetting and minimizing TR1 related impacts. The HRRP, CCAA, and SOSI plans define multiple required and voluntary habitat protection, restoration, and enhancement efforts; timely postmining habitat reclamation efforts; and targeted conservation measures to implement in suitable habitats both on and off the SCM property. However, based on the functional acre approach, an estimated 861 debits are associated with the development of TR1. Protecting sage-grouse habitats equal to either 800 or 861 credits from further habitat degradation for the duration of the TR1 impacts and Phase IV reclamation would offset the impacts and be consistent with the MMP assuming the credits are calculated using the habitat functional assessment developed for TR1 (MMP 2018).

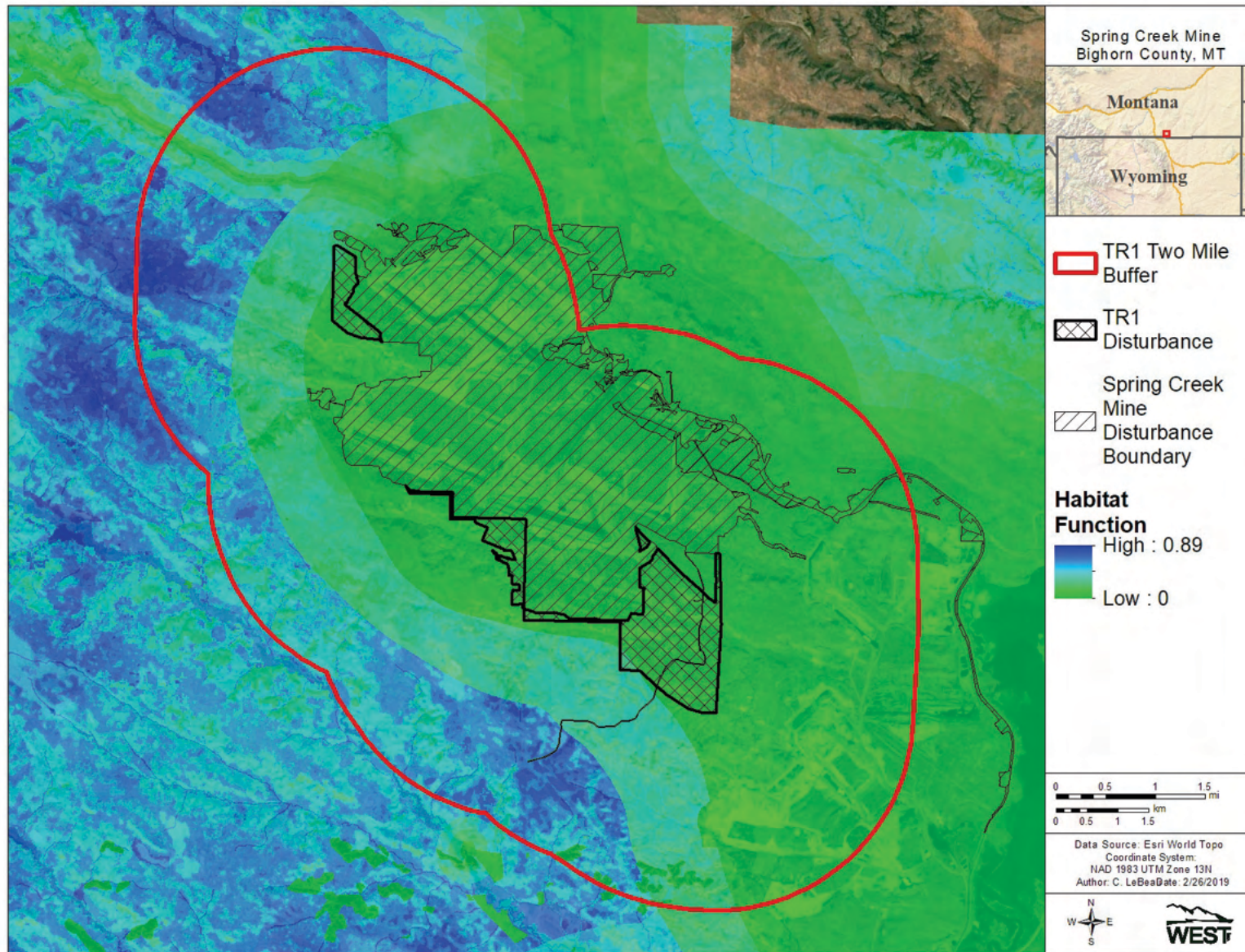


Figure 1. Baseline habitat function scores within the TR1 disturbance area and CCAA (Year 2019 projected)

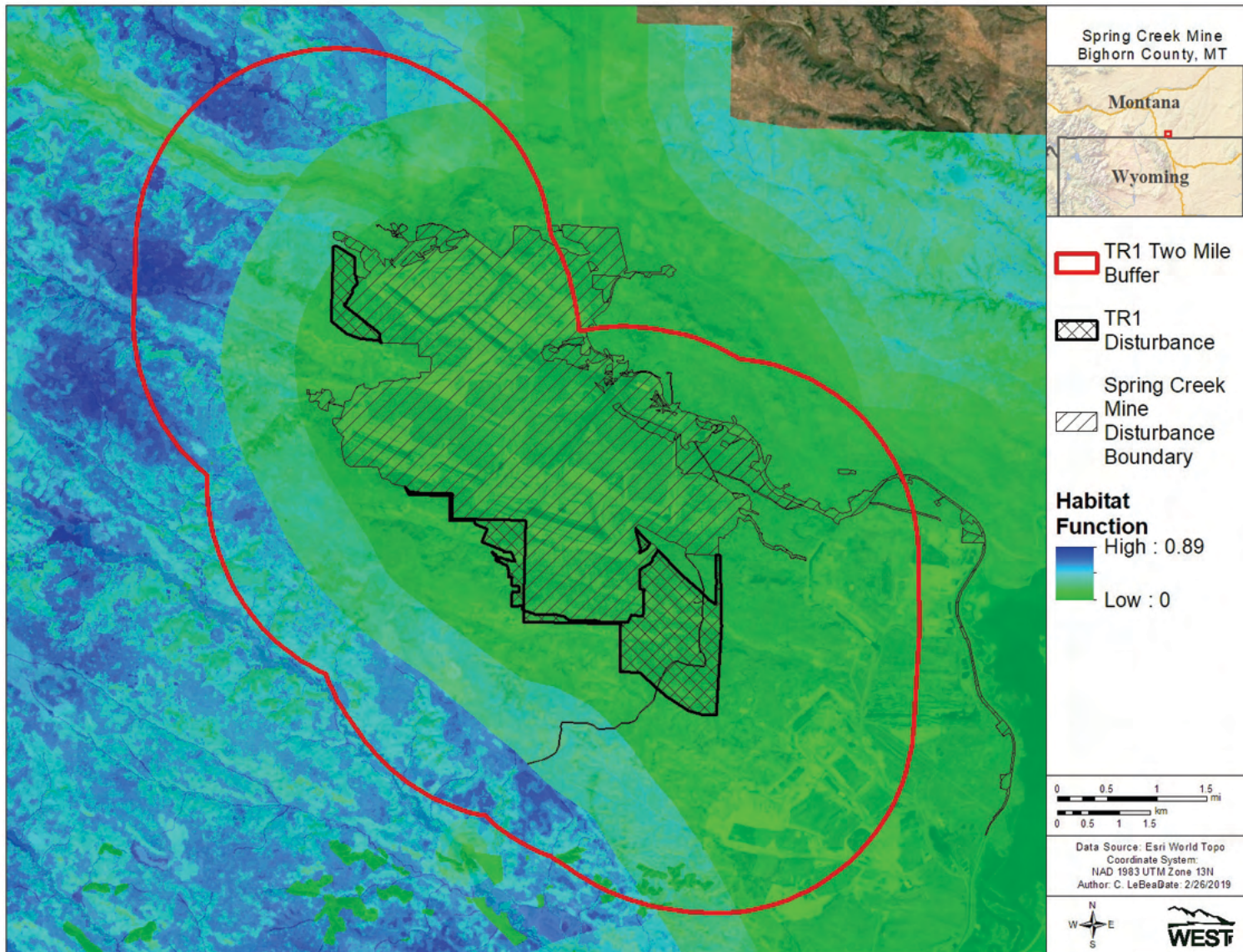


Figure 2. Post-development habitat function scores within the TR1 disturbance and the CCAA (Year 2034 projected)

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APPENDIX B RESPONSE TO COMMENTS

B.1 DEIS COMMENT PERIOD

The 30-day comment period on the draft EIS started August 27, 2019 and ended September 26, 2019. DEQ received comments at the public meeting, by regular mail, and by electronic mail. This chapter presents the 547 public comments on the draft EIS and responses.

B.2 COMMENT SUMMARY

Comments contained expressions of opposition or support for the Proposed Action and requested DEQ’s denial or quick approval of the TR1 Project. Categories and numbers of substantive comments were:

- climate and climate change (509 comments)
- reclamation and bonding (8 comments)
- general support for the project (7 comments)
- cumulative and connected actions (5 comments)
- socio-economics (5 comments)
- sage grouse and wildlife (3 comments)
- MSUMRA and MEPA (3 comments),
- bankruptcy, sovereign immunity, and water resources (each with 2 comments), and
- transportation - coal trains (1 comment).

B.3 COMMENT RESPONSES

Written responses to comments with specific questions or concerns about the draft EIS are shown below. Some comments resulted in modifications to the EIS that are reflected in the final EIS. Comment submissions and the page each begins are shown below. One comment was made at the public meeting but was also attached to mailed comment letter; the response was provided with the comment letter and referenced for the public meeting comment response.

1. Public Meeting Comments	B-2
2. Mark Fix	B-30
3. Cloud Peak Energy	B-32
4. Montana Environmental Information Center	B-34
5. Navajo Transitional Energy Company	B-40
6. Western Environmental Law Center	B-42
7. Public Comments	B-82
8. Charlene Woodcock	B-120
9. David Ashley	B-121

1. Public Meeting Comments

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MONTANA DEPARTMENT OF ENVIRONMENTAL QUALITY
COAL AND OPENCUT MINING BUREAU

Draft Environmental Impact Statement
For the Spring Creek Mine TR1 Major Revision
Big Horn County, Montana

BEFORE:

Jennifer Lane
Montana Department of Environmental
Quality
MEPA Coordinator
1520 E. 6th Avenue
Helena, Montana 59601

Bob Smith
Montana Department of Environmental
Quality
CMPC Coordinator
1520 E. 6th Avenue
Helena, Montana 59601

2

1 P R O C E E D I N G S

2

3 MS. LANE: Good evening everyone, and thank
4 you for joining us.

5 We are holding this meeting to receive
6 public comment on the Draft Environmental Impact
7 Statement for the proposed Spring Creek Mine Tier 1
8 Major Revision application at the Spring Creek Mine.

9 My name is Jen Lane, and I am with the
10 Department of Environmental Quality or DEQ.

11 I have with me Bob Smith, the Coal Mining
12 Permit Coordinator at DEQ, and in the room we have also
13 DEQ technical specialists on hand that helped answer
14 questions during the open house portion, as well as our
15 third-party contractor Tetra Tech and their
16 subcontractor West, Inc.

17 For this portion of the meeting we will
18 explain where we are in the environmental review
19 process, provide a brief description of the permitting
20 process and give an overview of the proposed action.
21 Then we will provide the format for providing oral
22 comments.

23 Public participation is an important
24 component in the EIS process. DEQ sought input from the
25 public, interested organizations, tribes and government

3

1 agencies during the formal public scoping. DEQ held
2 this public scoping period between April 6 and May 7,
3 2018, and we hosted a public meeting at the Hardin High
4 School on April 18, 2018.

5 One member of the public attended the
6 meeting and provided public testimony. In addition to
7 the comments received at the scoping meeting, DEQ
8 received 24 comments through our electronic portal.

9 On August 27, 2019, DEQ released a Draft
10 Environmental Impact Statement for public review. The
11 EIS evaluates the environmental impact resulting from
12 the project pursuant to the requirements of the Montana
13 Environmental Policy Act.

14 This meeting is to allow the public to ask
15 resource specialists questions and submit oral or
16 written questions on the draft EIS.

17 DEQ is charged with ensuring that the
18 project complies with state laws. We are neither a
19 proponent or opponent of the proposed project.

20 We have provided a handout of the EIS
21 Executive Summary that gives information contained in
22 the Draft Environmental Impact Statement. The purpose
23 of the public comment period is to receive and respond
24 to concerns that the public may have with the Draft
25 Environmental Impact Statement.

4

1 DEQ is looking for substantive comments from
2 the public. A substantive comment addresses a specific
3 issue in the analysis. DEQ will respond to public
4 comments in the Final EIS prior to the permitting
5 decision.

6 The purpose of this EIS is to help DEQ
7 managers make a more fully informed decision with
8 respect to the TR1 application. DEQ will decide whether
9 to approve the permit in accordance with the
10 requirements of the Montana Strip and Underground Mine
11 Reclamation Act and its implementing rules.

12 Under Montana statute, DEQ may not withhold,
13 deny, or impose conditions on the TR1 Revision based on
14 the information contained in the EIS.

15 The deadline for submitting public comments
16 is September 26th. All public comments will be part of
17 the administrative record and will be published and
18 responded to in the Final EIS.

19 Now I'll hand it over to Bob for a
20 description of the proposed action and an update on the
21 permitting process.

22 MR. SMITH: Hi. Again I'm Bob Smith. I'm
23 the Permit Coordinator for the Coal Program within
24 Montana DEQ.

25 I greatly appreciate Mr. Fix coming out

5

1 tonight as the public participation is extremely
2 important to us, and it doesn't feel like sometimes we
3 get that, so I really appreciate you coming.

4 Spring Creek Mine submitted an application
5 to revise the mine permit on November 6th, 2013. Since
6 then, DEQ has issued seven deficiencies to Spring
7 Creek's application, the last being on November 17th,
8 2016.

9 When DEQ receives a deficiency response, it
10 starts a 120-day review period, which requires DEQ to
11 either provide remaining deficiencies or to determine
12 the application to be acceptable.

13 When the application is determined to be
14 acceptable, DEQ has 45 days to make a permitting
15 decision. The decision will be in the form of written
16 findings released at least 15 days after the Final EIS
17 is published.

18 The proposed project, as put forward by
19 Spring Creek in its Major Revision to the TR1 Project,
20 would add approximately 977 acres of new disturbance and
21 all the extraction of approximately 72 million tons of
22 recoverable coal reserves.

23 The overall permit boundary would remain
24 unchanged at 9,220 acres. The total life-of-mine
25 disturbance within the permit boundary would increase

6

1 from the current 6,134 acres to the proposed 7,111
2 acres. The TR1 Project would extend the life of the
3 mine by approximately four years from 2027 to 2031.

4 Spring Creek Coal, LLC uses an area surface
5 mining method at the Spring Creek Mine to extract coal.
6 In advance of each mining pass, soil would be removed
7 from the area and used in future reclamation. Next, the
8 overburden would be drilled and blasted.

9 After leveling the blasted material, a
10 dragline would be used to strip the overburden from the
11 mine pass.

12 After the dragline exposes the coal seam in
13 each pass, the coal would be drilled and blasted and
14 loaded into coal haulers. The coal would then be
15 transported to the processing facilities.

16 Reclamation would begin within two years of
17 mining the initial pass and would continue as subsequent
18 mine passes are completed until Phase IV bond release.
19 Reclamation would facilitate the post-mine land use for
20 grazing land and wildlife habitat.

21 In addition to the reclamation of the
22 landscape disturbed by mining operations, other
23 disturbed areas that would require reclamation include
24 the road systems, mine plant facilities, sedimentation
25 ponds, and temporary diversion structures.

7

1 Additional resource specific mitigations
2 would include a cultural resource mitigation, to be
3 completed before the disturbance of one site that is
4 recommended as eligible for the National Register of
5 Historic Places.

6 Spring Creek would also complete the
7 wildlife mitigation required under stipulations from
8 Federal Coal Lease Modification MTM-069782 and Land Use
9 Lease MTM-74913, including the development of a Habitat
10 Recovery and Replacement Plan to mitigate for impacts in
11 safe grouse and other wildlife habitats in the
12 disturbance area.

13 Some of the Habitat Recovery Replacement
14 Plan tasks are linked with reclamation of the TR1
15 Project area and will only be completed if the TR1
16 Project is approved by the DEQ and the Federal Mine Plan
17 revision approved by the OSM.

18 If approved, Spring Creek Coal would also
19 deposit compensatory mitigation funding in the amount of
20 \$107,727 into the Montana Sage Grouse Oversight Team's
21 Stewardship Fund prior to mining activities.

22 DEQ worked with our third-party consultants,
23 the Bureau of Land Management, Montana Fish, Wildlife,
24 and Parks, and the Montana Sage Grouse Conservation
25 Program to develop this mitigation to address potential

8

1 impacts associated with the project on the Great Sage
2 Grouse.

3 MS. LANE: All right.

4 So we'll now begin the oral comment segment
5 of the public meeting. Oral comment will be recorded by
6 our court reporter verbatim and will be part of the
7 administrative record.

8 Please state your name and spell it, and let
9 us know if you're an affiliated group or organization.

10 If you have a prepared statement, please
11 give it to the court reporter when you're finished, if
12 you could. Speak clearly and direct your comments so
13 that the court reporter can hear you.

14 This is not a question and answer session.
15 This portion of the meeting is for DEQ to gather oral
16 comments on the draft EIS.

17 And there's other parts about timing that
18 I'm not going go into with one speaker.

19 You have the floor, Mr. Fix.

20 MR. MARK FIX: My name is Mark Fix, F-I-X. I
21 ranch outside of Miles City, and I am the Chair of the
22 Northern Plains Resource Council's Coal Tax Force.

23 Northern Plains is a grassroots conservation
24 and family agriculture group that organizes Montanans to
25 protect out water quality, family farms and ranches, and

Mr. Mark Fix provided the same comments with the NPRC letter.
Please see **Responses NPRC 8, 9, 10, and 11** on page 7-30.

9

Mr. Mark Fix provided the same comments with the NPRC letter. Please see **Responses NPRC 8, 9, 10, and 11** on page 7-30.

1 our unique quality of life. Northern Plains was founded
2 in 1972 over coal issues, and many of our members live
3 and work in coal country and are directly impacted by
4 what happens there. I ranch downstream of the Spring
5 Creek Mine.

6 Cumulative and Connected Impacts

7 The Spring Creek Mine cannot be considered
8 in a vacuum. The impacts of the neighboring Decker Mine
9 and its planned expansion, and their cumulative impacts
10 on land and water need to be taken into account so that
11 the agency does not miss the forest for the trees.

12 In addition, the Agency must also take into
13 account the impacts of the proposed Youngs Creek Mine,
14 particularly given the proposed haul road from Youngs
15 Creek to Spring Creek. The draft EIS is woefully
16 deficient in these regards.

17 In addition to coal mining, the Agency must
18 also take into account the past and potential future
19 impacts of oil and gas development. Coalbed methane
20 development has had a significant impact on the Tongue
21 River and other southeastern Montana waterways.

22 The cumulative impact of pollution such as
23 salt loading from development must be taken into account
24 to ensure that water quality is not degraded for
25 downstream water users like myself.

10

Mr. Mark Fix provided the same comments with the NPRC letter. Please see **Responses NPRC 8, 9, 10, and 11** on page 7-30.

1 The Tongue River Total Maximum Daily Load,
2 TMDL, is currently being worked on. The salt load at
3 the mouth of the Tongue River is being exceeded in the
4 spring. DEQ is being pressured to allow move salts in
5 the Tongue from Wyoming.

6 We cannot take any more salt load from coal
7 and coalbed methane. It will destroy our irrigated
8 lands and cannot be permitted. We cannot accept more
9 salt load from Montana mines or Wyoming mines.

10 Bankruptcy and Bond Replacement.

11 The Agency must also take into account the
12 uncertain future of the Spring Creek Mine. Cloud Peak
13 Energy is still in bankruptcy. The Navajo Transitional
14 Energy Corporation has yet to close on its purchase of
15 the mine. At the very least, DEQ should not approve a
16 permit expansion to a mine whose ownership future is
17 uncertain.

18 Additionally, DEQ should require full
19 replacement of all surety bonds at the mine prior to
20 transfer of ownership or permit expansion. DEQ must
21 also carefully scrutinize the ratings and strength of
22 those replacement bonds and have a plan in place for
23 potential bond forfeiture.

24 Tom Clark, the mine's back-up bidder,
25 recently failed partway through his attempt to acquire

11

Mr. Mark Fix provided the same comments with the NPRC letter. Please see **Responses NPRC 8, 9, 10, and 11** on page 7-30.

1 the Kemmerer Mine in Wyoming due to failure to
2 adequately acquire and ensure placement bonds. In an
3 uncertain coal mine, DEQ should be particularly careful
4 that taxpayer are not left holding the bag.

5 Reclamation and Resources.

6 As the ratio of disturbed to reclaimed acres
7 continues to grow at coal mines across the state, it
8 creates a heightened risk for taxpayers in the case of
9 default or abandonment. It also creates a higher risk
10 for water users, in addition to vegetative and wildlife
11 communities.

12 A larger mine means more dust, more noise,
13 more lights, more traffic, and more people. It is
14 difficult to reestablish persistent vegetative
15 communities in the semi-arid Powder River Basin, and
16 this becomes even truer the longer spoil piles sit and
17 sites go without being reclaimed.

18 The EIS needs to take a better, harder look
19 at reclamation. For instance, while it acknowledges
20 impacts to soil, it partially dismisses them with a note
21 that soil productivity will return a decade after
22 reclamation.

23 Montanans have been waiting decades for
24 reclamation at existing mines. Mines' failures to
25 reclaim contemporaneously must be taken into account

12

Mr. Mark Fix provided the same comments with the NPRC letter. Please see **Responses NPRC 8, 9, 10, and 11** on page 7-30.

1 when analyzing the impacts of expansion.

2 Climate Change.

3 Finally, the Agency must take a hard look at
4 the climate impacts of this mine expansion. The draft
5 Environmental Impact Statement dismissed climate change
6 as outside of its scope and summarily fails to deal with
7 it. This is unacceptable.

8 The Fourth National Climate Assessment and
9 Intergovernmental Panel on Climate Change, IPCC, 2018
10 Special Report make it abundantly clear that the dangers
11 caused by human-caused and exacerbated climate change
12 are more urgent and severe than previously thought and
13 that any pathway to limiting warming to 1.5 degrees
14 Celsius requires a rapid phase-out of CO2 emission and
15 deep emissions reductions.

16 The 2017 Montana Climate Assessment found
17 that average annual temperatures in Montana have risen
18 across the state between 2 and 3 degrees Fahrenheit
19 since the 1950s. The report found that by mid-century,
20 Montana temperatures are projected to increase by
21 approximately 4.5 to 6 degrees Fahrenheit, and by up to
22 9.8 degrees Fahrenheit by the end of the century.

23 In addition to increased temperatures, the
24 assessment finds decreases in projected precipitation
25 across the state, particularly in the central and

13

Mr. Mark Fix provided the same comments with the NPRC letter. Please see **Responses NPRC 8, 9, 10, and 11** on page 7-30.

1 southern parts of the state.

2 A report issued two years ago by Montana
3 Farmers Union found that climate change could cost
4 Montana's agricultural industry almost 25,000 jobs and
5 \$726 million over the next 50 years.

6 There must be another alternative in this
7 EIS that should be the preferred alternative and it must
8 provide options that reduce coal mining and increase
9 reclamation into the future.

10 Thank you for allowing me to comment.
11 Northern Plains will submit further comments by the
12 deadline.

13 MS. LANE: Thank you. Thank you very much.

14 I don't have anyone else on the list, but
15 would anyone like to provide a comment?

16 (No response.)

17 Okay. With that, the public hearing portion
18 of the meeting will conclude.

19 DEQ will stay here until 8 o'clock, so if
20 you have more questions, we'll gladly answer them.

21 All right. Thanks.

22 (Whereupon, the meeting was concluded at
23 8:00 o'clock, p.m.)

24

25

1 REPORTER'S CERTIFICATE

2 CASE TITLE: Spring Creek TR1 EIS
3 HEARING DATE: September 11, 2019
4 LOCATION: 317 Custer Avenue, Hardin, MT

5

6 I hereby certify that the proceedings herein
7 are contained fully and accurately on the recorded notes
8 taken by me at the public meeting in the above matter
9 before the Montana Department of Environmental Quality,
10 and that this is a true and correct transcript of the
11 same.

12

13 Dated: September 17, 2019

14

15

16 _____
17 Frances L. Mock
18 Big Sky Reporting
19 2308 Interlachen Circle
20 Billings, Montana 59105

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19

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21

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25



Jen Lane, MEPA Coordinator
 Montana Department of Environmental Quality
 P.O. Box 200901
 Helena, Montana 59620-0901

Uploaded through DEQ's online Public Comment Submittal Application

September 26, 2019

Dear Ms. Lane:

On behalf of Northern Plains Resource Council (Northern Plains), we are submitting the following comments to the Montana Department of Environmental Quality (DEQ) in response to its August 27, 2019, announcement of the opening of a public comment period under the Montana Environmental Policy Act (MEPA) on the proposed major revision to mining permit C1979012 (referred to as TR1), which would expand the Spring Creek Mine (SCM). This amendment would add approximately 977 acres to the existing 6,085 acres permitted for mining at SCM. The mine is operated by Cloud Peak Energy.

Northern Plains is a grassroots conservation and family agriculture non-profit organization based in Billings, Montana. Northern Plains organizes Montana citizens to protect our water quality, family farms and ranches, and unique quality of life. Northern Plains is dedicated to providing the information and tools necessary to give citizens an effective voice in decisions that affect their lives. Northern Plains formed in 1972 over the issue of coal strip mining and its impacts on private surface owners who own the land over federal and state mineral reserves as well as the environmental and social impacts of mining and transporting coal. Our members care deeply about Montana, its future, and the issues surrounding coal. Many of our members' livelihoods as ranchers and farmers depend entirely on clean air and water, native soils and vegetation, and lands that remain intact. The strip mining of coal affects them directly.

Our comments are submitted in an effort to aid DEQ in identifying issues, concerns, and deficiencies that we believe should be addressed in the final environmental impact statement (EIS) being prepared for this mine plan amendment. We believe that a thorough and complete analysis of these issues is required in order for the agency decision maker to have all the information necessary to make an informed decision on this proposed permit amendment. Please ensure that our comments are entered into the public record.

Water Resources

Water is a precious resource in this semi-arid region of the state. Ranchers and other residents who live in this area rely on surface waters for irrigation and agricultural production. The quality of water greatly affects the operation of a ranch. Coal seams are filled with water and

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Northern Plains Resource Council

Response NPRC-1: Section 3.11.3 of the EIS discusses the impacts to ground water from the proposed action.

NPRC-1

function as vital aquifers in this region. Coal strip mines sever and destroy these aquifers. The impacts of this severance can be seen many miles from the mine.

The proposed TR1 expansion will mine coal through Pearson Creek and South Fork Pearson Creek. Surface drainage is from ephemeral streams, which flow toward the Tongue River Reservoir and then to the Tongue River, which flows 110 miles north to Miles City where it joins the Yellowstone River.

Our members are quite concerned about the impact that the SCM now has and will continue to have on water resources of the area. Values for electrical conductivity (EC) and total dissolved solids (TDS) are high in the Tongue River watershed. Efforts to reach a Total Maximum Daily Load (TMDL) for salinity on the Tongue River have stalled as of summer 2019. Irrigators on the Tongue continue to experience water quality degraded below historic levels. The dEIS states in section 4.9 on page 149 that (emphasis added):

“Ground water levels would eventually return to near premine levels after closure and reclamation, but that would take many years. Ground water and surface water impacts from the TR1 major revision would primarily occur during active mining and dewatering of the pits; impacts would diminish with reclamation. *Impacts to ground water quality are irreversible.*”

We believe DEQ should modify the Preferred Alternative in the TR1 expansion to prevent, or minimize to the greatest extent possible, these irreversible impacts to ground water quality. For example, can the irreversible impacts to groundwater quality be avoided by limiting the expansion in size? Can DEQ withhold sections of coal within the TR1 expansion where mining impacts to groundwater quality will be disproportionately severe? Are there coal seams with a high degree of hydrologic connection to surrounding aquifers that DEQ can withhold from mining? Are there restrictions on mining methods that could limit the mine’s impact to groundwater? If there is no way to prevent impacts to groundwater quality from being irreversible, DEQ should not move forward with approving the TR1 expansion. Downstream agriculture does not just *rely* on useable water, it *exists solely because* water quality is good enough to support raising crops and livestock.

Reclamation

Under the Montana Strip and Underground Mine Reclamation Act (MSUMRA), DEQ is to “enforce a reclamation program that complies with [the federal] Surface Mining Control and Reclamation Act” (SMCRA). Under SMCRA, contemporaneous reclamation is supposed to occur at coal strip mines.¹ The purpose of SMCRA is to ensure restoration of the land and hydrology to pre-mine conditions. Under REG-8, OSMRE [Office of Surface Mining Reclamation and Enforcement] oversight guidance document, analysis of “reclamation success as measured by bond release” is required. In Montana there are four phases of bond release, with each phase building upon the preceding, successfully completed phase. Final bond release occurs when the permittee has not only successfully established plant communities suitable to the region’s climate and post-mining land use on the mine-disturbed lands (Phase III bond release requirements) but has also reclaimed the hydrologic balance within any designated drainage basin. Final bond release is the *only* lawful and objective measure to evaluate reclamation

¹ 30 U.S.C. 1202(e) (in the Statement and Purpose section of SMCRA, “assure that adequate procedures are undertaken to reclaim surface areas as contemporaneously as possible with the surface coal mining operations”)

NPRC-1
cont.

NPRC-2

The A-D coal seam is the only seam mined under the Proposed Action, so there aren’t any other coal seams with a high degree of hydrologic connectivity to be withheld from mining to limit impacts on ground water. While there are impacts to ground water from the TR1 Project, the classification of ground water according to ARM 17.30.1006 is not expected to change. Consequently, ground water which contributes to surface water in the Tongue River would not render the existing uses for water downstream to be infeasible.

Section 4.9 will be edited to read:

Ground water levels would eventually return to near pre-mine levels after closure and reclamation, but that would take many years. Ground water and surface water impacts from the TR1 Project would primarily occur during active mining and dewatering of the pits; impacts would diminish with reclamation. Similarly, impacts to water quality would occur during mining and for some years thereafter, but eventually water quality would improve through flushing, adsorption/desorption, precipitation/dissolution and other complex geochemical processes. It is only during the period of many years when ground water levels and quality are reduced that the resource is diminished.

DEQ cannot propose an alternative that has different objectives or results than the Proposed Action alternative (See § 75-1-220(1), MCA, and ARM 17.4.603(2)). Limiting the size of disturbance or withholding sections of coal from development changes the objectives and results from the proposed action.

Response NPRC-2: This comment questions the occurrence and enforcement of contemporaneous reclamation at the SCM. As identified in the comment, one of the purposes of SMCRA is to “assure that adequate procedures are undertaken to reclaim surface areas as contemporaneously as possible with the surface coal mining operations.” 30 U.S.C. § 1202(e). This language does not state that reclamation should occur contemporaneously with mining. Table 3.10-1 in Section 3.10.4.2 provides the reclamation status of the current and projected disturbed

success. Without bond release, especially final bond release, there is no public verifiable proof of successful mine reclamation.

Unfortunately, there is a woeful lack of evidence of contemporaneous reclamation and/or reclamation success as measured by bond release throughout the West, and this is a significant issue in Montana. Coal strip mines have been operating in Montana for more than 40 years. But as of July 2018, of the 42,318 acres that have been disturbed by coal strip mining operations, only 22,436 acres have achieved Phase I reclamation and bond release, which means that a permittee has completed the backfilling, re-grading, topsoil replacement, re-contouring, and drainage control required for a bonded area. Of particular concern, during this time only 2,573 acres in all of Montana have achieved Phase IV (final) bond release.²

Of the over 6,085 acres disturbed at the SCM, only 980 – or 16% - have achieved Phase II bond release, the benchmark that demonstrates the permit holder has completed soil replacement and spoil and soil tillage and that vegetation is establishing in accordance with the approved reclamation plan. Only 407 acres of disturbed land at the SCM has achieved Phase III bond release, the benchmark that demonstrates successful establishment of plant communities suitable to the region's dry climate and post-mining land use. Phase IV bond release means that the essential hydrologic functions of the disturbed and reclaimed lands have been restored or alternative water sources to replace adversely affected water supplies are provided. Despite 37 years of operation at the SCM, *there have been ZERO acres of Phase IV bond release achieved.*

Northern Plains believes that reclamation at the SCM, to date, is a connected and cumulative part of this mine expansion project proposal and must be fully considered and analyzed before any further mine expansion is approved. It is paramount that the progress of SCM's reclamation plan, including the mine's ability to cover its current and future reclamation obligations, be considered as part of the analysis of this mine expansion proposal. Specifically, and, at a minimum, the following must be fully analyzed and evaluated:

- The status of reclamation at the SCM including, but not limited to, an assessment of bond release at the mine operations (all phases), an assessment of any barriers to bond release, and identification of mine areas eligible for bond release.
- A detailed schedule and time frame for achievement of reclamation success for lands and waters at the SCM must be analyzed and evaluated.
- The direct, indirect, and cumulative impacts of authorizing more land and water (both surface and underground aquifers) for disturbance by coal mining at the SCM must be analyzed as well as other mines within the Montana portion of the Powder River Basin (PRB) as connected and cumulative actions.
- An alternative should be evaluated whereby DEQ disapproves the proposed mine expansion proposal until such time as the majority of mined lands at the SCM have achieved Phase III bond release, or requires any mining to be concurrent on a 1:1 acreage ratio with reclamation to prevent growing reclamation liabilities.
- Significant conditions and/or stipulations to the proposed mine expansion proposal that require addressing the problems identified with the lack of reclamation and final bond release success must be evaluated.

² OSMRE reclamation status tables for evaluation year 2018

(Response NPRC-2 cont.)

acres for the No Action and Proposed Action alternatives. To date, no areas at the SCM have achieved final bond release for Phase IV reclamation. As stated in Section 3.10.4 of the EIS, the reason there has been no Phase IV bond release at the SCM is because the mine continues to mine coal farther from the Plant and railroad loadout and needs roads through previously mined and reclaimed areas. Pursuant to ARM 17.24.1116 (6)(d)(i), Phase IV bond release can only occur after all disturbed lands within a designated drainage basin have been reclaimed in accordance with phases I, II, and III requirements, thus Phase IV bond release is occurring "as contemporaneously as possible with the surface coal mining operations." 30 U.S.C. § 1202(e).

The SCM is in compliance with MSUMRA reclamation requirements and schedules for the phases of bond release outlined in ARM 17.24.1116. MSUMRA evaluates if contemporaneous reclamation is occurring primarily by the timeliness of the operator's actions according to permit terms and commitments, including the approved reclamation plan. The four stages of bond release and associated requirements are discussed in Section 1.8.4 of the EIS. SCM's past and existing reclamation operations are provided as Sections 2.2.8 and 2.2.9 and are considered in the affected environment and cumulative impacts (see Section 4.1).

On April 2, 2018, WildEarth Guardians (WEG) sent a letter to OSMRE alleging that Montana coal mines were failing to meet their reclamation obligations based upon what WEG alleged to be a failure to conduct contemporaneous reclamation and achieve final bond release. On April 30, 2018 DEQ responded in a letter to OSMRE, rejecting the allegations in WEG's complaint. On June 6, 2018, OSMRE responded to WEG concurring with DEQ and likewise rejected WEG's allegations. OSMRE's June 6, 2018 letter explained:

(a) The applicable statutory and regulatory framework does not contemplate instant reclamation or reclamation on an acre-by-acre basis as surface mining proceeds, but instead contemplates that reclamation is supposed to occur "as contemporaneous as practicable" (see also §§ 82-4-231 and 82-4-234, MCA; ARM 17.24.313);

NPRC-2
cont.

NPRC-2
cont.

Given the insufficiency of reclamation occurring at other areas of the SCM, how does expanding the mine permit area encourage more reclamation and prevent the mine from falling even further behind in its responsibilities under SMCRA (and MSUMRA)? It is our opinion that DEQ must assess the timing of reclamation activities within the proposed mine expansion area and thoroughly consider the impacts of prolonged or untimely reclamation, including re-establishment of vegetation and restoration of water resources. The final EIS should examine an alternative whereby Cloud Peak Energy dedicates a set portion of its budget to *active* reclamation (instead of simply posting bonds with the promise of future reclamation).

As the ratio of disturbed-to-reclaimed acres grows, it creates a heightened risk for taxpayers in the case of default or abandonment. It also creates a higher risk for water users, in addition to vegetative and wildlife communities. A larger mine means more dust, more noise, more lights, more traffic, and more people. It is difficult to re-establish persistent vegetative communities in the semi-arid Powder River Basin and this becomes even truer the longer spoil piles sit and sites go without being reclaimed.

The EIS needs to take a better, harder look at reclamation. For instance, while it acknowledges impacts to soil, it partially dismisses them with a note that soil productivity will return a decade after reclamation. Analysis cannot dismiss or diminish mining impacts based off of successful reclamation until reclamation rates and timeframes improve.

Montanans have been waiting decades for reclamation at existing mines. The mine's failures to reclaim contemporaneously must be taken into account when analyzing the impacts of expansion.

Connected and Cumulative Impacts of the Project

The DEQ must better analyze this proposed mine expansion in consideration of other actions that are connected and are cumulative. Connected actions are those that are closely related, those that cannot or will not proceed unless other actions are taken previously or simultaneously, or those that are interdependent parts of a larger action and depend on the larger action for their justification. Cumulative impacts are those impacts on the environment that result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions.

Regional Development

DEQ's analysis examines the connected and cumulative impacts of existing mining in the area, including planned projects at the Decker Mine and the SCM AM5 Haul Road to Youngs Creek Mine, but fails to incorporate the analysis on irreversible impacts to groundwater quality into selection of the Preferred Alternative. Section 4.9.2 recognizes the importance reclamation will have in limiting the long-term impacts to groundwater *quantity* in the area, but does not include more analysis of the final sentence (listed below) in Section 4.9.2 referring to impacts to groundwater *quality*:

"Impacts to ground water quality are irreversible."

(Response NPRC-2 cont.)

(b) An operator's success at contemporaneous reclamation is primarily measured by the operator's compliance with its permit and reclamation plan, which is developed under the applicable approved regulatory program and not by the status of bond release;

(c) Under MSUMRA, whether contemporaneous reclamation is occurring is primarily measured by the timeliness of the operator's actions in accordance with permit terms and commitments, including those made in the operator's approved reclamation plan; and

(d) Based on available information, there is no reason to believe a violation of contemporaneous reclamation requirements for coal mining operations in Montana is occurring.

The SCM has successfully reclaimed areas with sagebrush and other shrubs. OSMRE recognizes coal mining companies that achieve exemplary coal mine reclamation through an annual award called *The Excellence in Surface Coal Mining Reclamation Award*. OSMRE states that winning projects go beyond reclamation requirements to achieve superior results in returning a site to productive use after completion of mining. SCM won the 2017 award based on their innovative use of soil mixtures and a variety of planted and seeded vegetation over a large area

(<https://www.osmre.gov/programs/awards/ActiveWinners.shtm>). The growth of a large assortment of plants led to greater and denser potential habitat for use by animals such as sage grouse, as well as songbirds, raptors, rabbits, mule deer, and pronghorn antelope.

Please see response to NPRC-3.

Response NPRC-3: Thank you for your comment, please see below.

Potential impacts on water quality and quantity from oil and gas activities were included in the cumulative impact analysis. The total area of disturbance assessed for cumulative impacts was approximately 4,917 acres.

NPRC-3
cont.

In order to prepare a comprehensive environmental review of the TR1 expansion project, we believe DEQ must consider (as a connected and cumulative effect) what the irreversible impacts to groundwater quality resulting from TR1 expansion mean in the context of water quality impacts from the proposed SCM AM5 Haul Road, the NDM 101099 and NDM 108494 leases at the Decker Mine, and the Big Metal Coal project. Specifically, how will increases in Total Dissolved Solids (TDS), Total Suspended Solids (TSS), and Electrical Conductivity (EC) resulting from the TR1 expansion impact water quality in the Tongue River in the context of other mine development in the watershed?

Because the AM5 and TR1 expansions represent a planned, regional development of coal resources in both Montana's SCM and Wyoming's Youngs Creek Mine – and Spring Creek is owned and Youngs Creek is proposed by the same company – DEQ must take a hard look at the potential development of the Youngs Creek Mine within this EIS as a connected and cumulative effect. Insofar as these two projects represent a significant multi-state mining complex, we believe DEQ must involve OSMRE as a cooperating agency before issuing a final EIS or, more appropriately in our view, as a co-lead agency in preparing its analysis. While we understand DEQ's statutory directive to limit its review to impacts occurring in Montana, a) the Youngs Creek Mine would have clear impacts on Montana waters such as the Tongue River, and b) DEQ's limited authority is precisely why OSMRE must be involved and prepare this further analysis.

We therefore believe the proposed expansion at SCM falls under the jurisdiction of the National Environmental Policy Act (NEPA) in addition to MEPA. We also believe that an EIS should be prepared that considers and analyzes all of these projects at once. If the Youngs Creek Mine is being revised from a stand-alone facility to one that relies on SCM's load-out facility for its operation, then the coordinated nature of these developments must be reflected in the environmental review. The dEIS makes little more than a cursory mention of the proposed Youngs Creek Mine.

While this dEIS is focused on TR1, it cannot be separated from AM5 insofar as they are cumulative and connected actions that the agency is concurrently processing. The AM5 haul road is designed to transport coal from Youngs Creek Mine to the rail terminus at Spring Creek, which means that this expansion of the SCM will have a direct role in inducing additional mining (and all of its related impacts) in Wyoming. The current EIS for Youngs Creek Mine was completed in 1977. Conditions have changed significantly since then. DEQ must consider the connected and cumulative impacts of approving the AM5 and TR1 expansions as those projects relate to regional water, climate impacts, reclamation, coal transportation, and more. The final EIS must also look at coal markets and what impacts both increased SCM production and Youngs Creek Mine production would have on mining and energy markets. If the haul road links markets to the Youngs Creek Mine and, thus, makes it more economically relevant, then there needs to be a comprehensive review of the environmental impacts of this haul road in the TR1 final EIS.

The final EIS must also thoroughly examine the cumulative and connected impacts of the proposed Big Metal Mine. Cloud Peak's 2013 Exploration Agreement and Option to Lease Agreement opened 1.4 billion tons of coal to potential development. On June 7, 2018, Big Metal provided the Crow Tribe notice that it was exercising its lease option on the Upper Youngs Creek project area and extending its coal lease options for the Squirrel Creek and Tanner Creek project areas. In addition to cumulative and connected water impacts, Big Metal plans to utilize

(Response NPRC-3 cont.)

The final sentence in Section 4.9.2 will be deleted and replaced with: "Similarly, impacts to water quality would occur during mining and for some years thereafter but eventually water quality would improve through flushing, adsorption/desorption, precipitation/dissolution and other complex geochemical processes. It is only during the period of many years when ground water levels and quality are reduced that the resource is diminished."

As stated, DEQ's analysis of the proposed TR1 Project is confined to the area within Montana's borders and cannot include impacts from the proposed Youngs Creek Mine because the mine is in Wyoming. Section 75-1-201(2), MCA, does not allow an analysis under MEPA to include impacts that are regional, national, or global in nature unless the environmental review is conducted by the Department of Fish, Wildlife, and Parks for the management of wildlife and fish or a review beyond Montana's borders is required by law, rule, regulation, or federal agency. The federal agency OSMRE is completing their separate environmental review for coal lease MTM-94378 which is expected to be published in 2020. The roles of other agencies (including OSMRE) in the permitting or approval process for the TR1 Project are provided in Section 1.4.3 of the EIS.

Five current and future related actions were considered in the cumulative impacts analysis in Section 4.1 of the EIS. The actions included: (1) the new SCM AM5 haul road; (2) Decker coal mines; (3) additional coal leases; (4) a railroad spur; and (5) oil and gas activities. The proposed Youngs Creek Mine is in Wyoming and the EIS cannot examine potential impacts outside of Montana (Section 75-1-201(2)(a), MCA), but the associated actions in Montana for the Youngs Creek Mine, including the new haul road, railroad spur, and additional coal leases in Montana were included in the cumulative impacts analysis. Potential impacts to water quality and quantity from oil and gas activities were included in the cumulative impact analysis. The total area of disturbance assessed for cumulative impacts was approximately 4,917 acres. Mining and energy markets are beyond the scope of this EIS.

NPRC-3
cont.

existing operations and rail loadout infrastructure at the Spring Creek Mine³. This development must be more thoroughly addressed by a final EIS.

From a salinity perspective, the greater Tongue River watershed is already significantly degraded due to legacy impacts of coalbed methane. Montana is currently working to establish a total maximum daily load (TMDL) for the Tongue River and is trying to determine the existing salt loads and where they can be reduced. The cumulative impact of all of these projects will not decrease the salt load but will rather only increase the salt load into the Tongue River watershed. The dEIS states on page 108: *“The proposed expansion would impact surface water quality by increasing TDS and TSS concentrations.”*

Consequently, DEQ’s final EIS must examine the mine expansion’s immediate impacts not only on the Tongue River Reservoir, Tongue River itself, and other receiving and downstream waterways, but also how the mine’s expansion might impact other efforts to protect and improve the Tongue River watershed such as the TMDL process and, therefore, protect wildlife (particularly aquatic life) and its many long-time existing agricultural users. The economic and cultural impacts to agriculture must also be factored into the socioeconomic impacts of the mine’s expansion.

The Bankruptcy of Cloud Peak Energy

NPRC-4

Cloud Peak Energy entered bankruptcy on May 10, 2019. On August 19, a bankruptcy judge approved the sale of the Spring Creek Mine and two other Wyoming Mines to the Navajo Transitional Energy Company (NTEC). NTEC assumes the \$60 million in debt held by Cloud Peak Energy and \$400 million reclamation and bond obligations. Two days after the sale, on August 21, Moody’s Investor Services downgraded the North American coal sector to “negative” outlook pointing to a “substantive decrease in coal export prices”.

NTEC is a new actor in the Montana coal industry and has no actual mine-operations experience. Its Navajo mine is actually run by Bisti Fuels, a subsidiary of North American Coal. We urge the DEQ withhold approval of the TR1 expansion until NTEC demonstrates it can safely operate the Spring Creek Mine.

NTEC has not yet released a business plan for the Spring Creek Mine outlining how it will successfully turn the company around and avoid the financial hardships that led Cloud Peak Energy into bankruptcy. Earlier in 2019, NTEC’s attempt to buy the Navajo Generating Station and neighboring mine fell through because the three owners of the power plant – NV Energy, Inc., Arizona Public Service Co., Tucson Electric Power – said in a statement that NTEC was *“not able to provide the required assurances to protect the plant’s owners, their customers and shareholders in the event of a sale.”*

What does this mean for the bonds covering reclamation at Spring Creek Mine that NTEC is assuming ownership of? Are they secure to cover reclamation obligations should the company enter bankruptcy in coming years? We believe DEQ must wait until the corporate reshuffling of ownership behind these companies and bonds is complete (NTEC has yet to close on its purchase of the mine, so DEQ would be granting an expansion to a company with an

³ <https://bigmetalcoal.com/>

(Response NPRC-3 cont.)

Cumulative impacts from the AM5 haul road and transportation are discussed in Section 4.7.1. See Section 4.8.1 and Response NPRC-2 for discussion of cumulative impacts from reclamation. Cumulative impacts are also discussed for wildlife in Section 4.10.1 of the EIS. However, cumulative impacts related to climate [change] are not discussed as such are “regional, national, or global in nature” and cannot be considered under MEPA. Section 75-1-201(2), MCA. Under § 75-1-201(2)(a), MCA, DEQ is limited to evaluating impacts within the state of Montana, which include several culvert crossings of ephemeral and intermittent streams. Required BMPs would prevent impacts to ground water and surface water. See also Section 4.5.1 for cumulative impacts for social and economic impacts and Section 4.9.1 for cumulative impacts for water.

Spring Creek’s AM5 haul road would result in only surface impacts to the drainages it crosses. It would add 81 acres of life of mine disturbance to Pearson Creek and 25 acres of disturbance to South Fork Spring Creek. AM5 Haul Road crosses Squirrel Creek and Youngs Creek further south of Pearson Creek, but because the creeks would flow through culverts and sediment from the road would be handled by sediment control ponds, there would be no measurable impact to the Tongue River. DEQ has received no application materials and is unaware of any actual mine plans involving the possible Big Metal Mine. Without a mine plan, there is no way to analyze cumulative impacts from a theoretical operation. Further discussion is provided in Section 4.1.3 of the EIS.

SCM has MPDES permits that require surface and ground water discharges that leave the mine to meet certain standards and not have excessive salinity and sediment loads or impact the Tongue River Reservoir. The Proposed Action would have the same economic and cultural impacts and benefits to agriculture as the No Action Alternative, but the impacts and benefits would extend about four more years until 2031. Please also see Response NPRC-1.

MEPA is procedural (House Bill No. 437 (Chapter 361, Laws of 2003)) and must provide for the adequate review of state actions to ensure that

NPRC-4
cont.

uncertain ownership future), and also must ensure that NTEC demonstrates it can successfully complete contemporaneous reclamation before approving a significant expansion to the mine.

Additionally, DEQ should require full replacement of all surety bonds at the mine prior to transfer of ownership or permit expansion. DEQ must also carefully scrutinize the ratings and strength of those replacement bonds and have a plan in place for potential bond forfeiture. Tom Clark, the mine's back-up bidder, recently failed part-way through his attempt to acquire the Kemmerer Mine in Wyoming due to failure to adequately acquire and ensure replacement bonds. In an uncertain coal mine, DEQ should be particularly careful that taxpayers are not left holding the bag.

Coal Train Impacts

The impacts to Montanans and Montana communities from increased rail traffic are real and significant – and these impacts go far beyond inconveniences.⁴ There are health, safety, quality of life, as well as actual financial costs to Montana citizens and communities from an increase in coal train traffic. Many Montana communities, as well as out-of-state communities, are affected by coal train traffic.

More trains means more noise, a greater potential that emergency responders are delayed at at-grade crossings in reaching residents when there is a medical emergency (or a fire or the need for police), and a greater potential for vehicle collisions with trains and for pedestrian accidents. More trains mean an increase in the amount of airborne pollutants (particulate matter) from diesel engines as well as from coal dust, and an increased risk of derailments. All of these impacts need to be addressed in DEQ's analysis and evaluation of this proposed project

NPRC-5

The financial costs of increased train traffic (both from SCM and from other induced and connected mining) to downrail communities also needs to be discussed. It is true that if a rail company needs to upgrade their track or a bridge or a crossing in order to facilitate current or increased train traffic, they will do so and they will pay for it. However, if a city or county wants to have a particular crossing in their community upgraded to deal with local impacts and the rail company doesn't need to do this in order to facilitate increased train traffic, under existing law the railroads do not have to respond to these local government concerns. The only choice citizens have at that point is to pay for any upgrade with public money – taxes from somewhere be it federal, state, county, or municipality taxes. Taxpayer costs in overpasses, underpasses, quiet zones, and other issues should be included in DEQ's review.

The review must also look at the health impacts of coal train traffic. Medical studies have shown a clear link between both diesel air pollutants and coal dust and disease. While those with chronic disease, the elderly, young children, and pregnant women are most at risk, the health effects from particulate matter exposure may occur years later, so even healthy individuals need to be concerned.⁵ DEQ's review must thoroughly examine the health impacts of diesel exhaust and coal dust resulting from coal train traffic.

⁴ see the 2014 report by the Western Organization of Resource Councils, "Heavy Traffic Still Ahead"; <http://www.heavytrafficahead.org>

⁵ see "Whatcom Does Position Statement" for extensive documentation of scientific and medical research on the health effects of these air pollutants; <http://www.coaltrainfacts.org/whatcom-docs-position-statement-and-appendices>

(Response NPRC-3 cont.)

environmental attributes are fully considered (§ 75-1-102(1), MCA). This EIS was prepared in compliance with MEPA using an interdisciplinary approach with analysis of many facets of the affected Montana human environment (biology, wildlife, geology, ecology, hydrology, soils, economy, and sociology).

Response NPRC-4: The financial viability of NTEC and its subsidiaries is outside the scope of the EIS.

Pursuant to § 82-4-223, MCA, DEQ may not issue a permit under SMCRA until the operator has filed a performance bond with DEQ made payable to the state of Montana in an amount to be determined by DEQ. The performance bond amount is based upon the cost to the state if it were to reclaim the permitted area as described in its associated reclamation plan. ARM 17.24.1102. DEQ will not issue an approval of the TR1 Project until a satisfactory performance bond is secured. The bond will cover the reclamation cost should the operator not perform for financial reasons.

Response NPRC-5: Noise, Crossing Traffic, Diesel Engine Pollutants, Coal Train Derailments

From the EIS, Section 3.9.4.2:

It is assumed that BNSF would adjust other coal and non-coal train traffic up or down to account for varying frequency of coal trains from SCM to maximize track use (BNSF 2018). Therefore, the number and frequency for all train traffic would not change (only the duration) and the waiting times for trains would also stay the same...

...The potential for train derailments and truck accidents would continue for about 4 additional years. Even with fluctuations in the coal market, the railroad would maximize train traffic (BNSF 2018) and the overall number of trains would remain constant and independent of the number of coal trains.

NPRC-5
cont.

In a paper titled, “PRB Coal Degradation, Causes and Cures,” Roderick J. Hossfeld and Rod Hatt explain that “PRB coal is extremely friable [crumbly] and will break down into smaller particles virtually independent of how the coal is transported or handled.” They go on to say that “once PRB coal is exposed by mining, the degradation process begins – the majority of the damage can occur in a very short time, even as short as a few days. The extent of the degradation that occurs depends in large part on . . . how long the coal is exposed to the atmosphere during transportation.”⁶

Previously, on the Burlington Northern Santa Fe (BNSF) website,⁷ it was stated that as much as 500 pounds of coal dust could be lost from each coal car in a train (there are typically 115-140 cars in a coal train). In 2011, Northern Plains began using this information in its presentations opposing the proposed increase in the number of coal trains through Montana communities that would result as a result of proposals for increased coal exports. Soon after Northern Plains began using this number, that piece of information was removed from the BNSF website.

There are many scientific studies available that establish the link between fugitive coal dust and human health impacts.⁸ On page 12 of a study prepared by the Multnomah County [Oregon] Health Department,⁹ which used available literature in its analysis, it is reported that “coal dust may travel approximately 500 meters to 2 kilometers (½ to 1¼ miles or 1,640.42 feet to 6,561.68 feet) from the tracks, depending on weather conditions and train speed.” The study found that coal dust from rail transport has the potential to result in growth and development problems, heart and lung problems, cancers, and safety-related injury and death.

The same Multnomah County study identified that “coal dust may contain traces of heavy metals, such as lead, mercury, chromium, and uranium that are toxic to the human nervous system. Children are particularly vulnerable to heavy metals . . .” (page 7) and that the populations living within 500 meters of the rail lines in the county are “communities of color, children, older adults, and people earning low incomes” (page 17).

Another study by Daniel A. Jaffe et al.¹⁰ measured particulate matter (PM) emissions at two rail sites in Washington State. The “measurements demonstrate that rail traffic emits substantial quantities of diesel exhaust and that PM_{2.5} concentrations are significantly enhanced for residents living close to the rail lines. . . . after passage of coal trains there was a statistically significant enhancement in large particles . . . [that] most likely consist of aerosolized coal dust.” The Jaffe study goes on to state that “the enhancement in PM_{2.5} is not only due to the [emission] spikes that occur as a train passes, but also the residual that accumulates in the local airshed.”

⁶ <http://krtc.commodities.com/files/PRB%20COAL%20DEGRADATION.pdf>

⁷ <http://www.coaltrainfacts.org/docs/BNSF-Coal-Dust-FAQs1.pdf>

⁸ see reference list in Appendix B of “Whatcom Docs Position Statement”; <http://www.coaltrainfacts.org/whatcom-docs-position-statement-and-appendices>

⁹ “The Human Health Effects of Rail Transport of Coal Through Multnomah County, Oregon: Health Analysis and Recommendations for Further Action” February 2013.

http://media.oregonlive.com/environment_impact/other/Coal%20Report%20.pdf

¹⁰ “Diesel Particulate Matter Emission Factors and Air Quality Implications from In-Service Rail in Washington State, USA” January 2014. http://www.atmos.washington.edu/jaffegroup/uploads/Jaffe_2014_trains_final.pdf

The frequency of trains traveling through communities would not change under the proposed action and thus, the noise and impact to crossings would remain the same as the no action alternative. In addition, the impact from train diesel engines under the proposed action would remain the same as the no action alternative. Finally, BNSF continues to invest in maintenance projects in Montana to “operate safely and efficiently in the state” (BNSF 2019_02_26 and 2018_02_13). This should reduce train derailments and particulate generation during train track use.

Coal Dust from Trains – Health Impacts

Research completed by D.A. Jaffe et al. (2014) did not include data on the types of dust treatment methods currently used by various coal trains traveling through the analysis area.

From the EIS, Section 3.9.3.3:

Coal dust suppression follows a three-step process (CPE, 2018b) to maintain coal shipment integrity for coal shipped from SCM. First, a dust suppressant coats coal surfaces before loading. Coal is then loaded in an aerodynamic pattern. Finally, a neutral polymer, called a topper, is applied after loading to create a crust on the top surface of the coal. The spray is not hazardous or toxic and has been effective at keeping dust from leaving the coal cars during transit.

BNSF requires under the current Coal Loading Rule (October 1, 2011) that

...The Coal Loading Rule also has a "safe harbor" provision stating that a shipper will be deemed to be in compliance with BNSF's Coal Loading Rule if it loads cars in compliance with BNSF's published Load Profile Template, and either (i) applies an approved in-transit dust suppressant agent to the loaded cars in the specified manner, or (ii) uses another method of coal dust suppression that, together with profiling, reduces coal dust losses in transit by the required 85 percent (BNSF and UP 2010).

NPRC-5
cont.

Additionally, a report by Dr. Alan Lockwood¹¹ found that coal trains are responsible for releasing coal dust particles and diesel fumes “into the air, degrading air quality and exposing nearby communities to dust inhalation,” and the report specifically noted that “railroad engines and trucks release over 600,000 tons of nitrogen and 50,000 tons of particulate matter into the air every year in the process of hauling coal, largely through diesel exhaust. Diesel engines currently produce approximately 1.8 million tons of NO_x [nitrogen oxides] and 63,000 tons of small particles (less than 2.5 microns in diameter) each year. These emissions adversely affect many organ systems.” It is worth noting that children often face the most severe health risks from coal dust pollution, with Dr. Lockwood noting that children and infants are the most vulnerable population in five of eleven enumerated diseases caused by coal dust pollution.

More than 600 health professionals have spoken out about safety threats associated with increased coal train traffic. Dr. Melissa Weakland of the Washington Academy of Physicians stated, “We know from the data that the coal trains would negatively impact the health of our communities because of increased air pollution from diesel particulates and coal dust, delays in emergency response time because of long waits and railroad crossings, and increases in noise pollution in our communities.”¹²

The agency should also look at the increased risk of general derailments resulting from coal train traffic. Fugitive coal dust emissions contribute to ballast fouling on railroad tracks,¹³ and the National Transportation Safety Board has concluded that coal dust on railroad tracks has been a contributor to derailments. Through trials, BNSF determined that shaping the profile of the loaded coal in rail cars combined with approved topper agents could reduce emissions of fugitive coal dust significantly (though far from wholly), and BNSF requires this of shippers (this is termed a tariff). It must be noted, however, that there is no independent verification or enforcement mechanism for this tariff. DEQ must look at the impacts of fugitive coal dust on rail system safety.

Other agencies have found significant impacts associated with coal train traffic. The Washington Department of Ecology’s Final Environmental Impact Statement¹⁴ on the proposed coal export terminal in Longview, Washington, found that the port would have “unavoidable and significant adverse environmental impacts” for nine environmental resource areas, including rail transportation, rail safety, vehicle transportation, noise and vibration, and air quality- including increased cancer risk along the railroad tracks, blocked railroad crossings, train-related accidents, and more.

DEQ must do a thorough analysis of the connected and cumulative impacts that coal from the SCM would have on increased coal train traffic and those impacts on the rail system and communities traversed by those rails.

As a separate rail consideration, DEQ must look at the most efficient use of the railroad. The grade leaving Spring Creek mine is steep and requires more power and fuel to transport the

¹¹ “Coal’s Assault on Human Health,” Dr. Alan Lockwood, et al., November 2009.

<http://www.psr.org/assets/pdfs/psr-coal-fullreport.pdf>

¹² “Health concerns about coal export in the Northwest,” Power Past Coal, 2013. <http://powerpastcoal.org/wp-content/uploads/2013/12/health-impacts-03.pdf>

¹³ http://railtec.illinois.edu/CEE/pdf/PPT%27s/fall08/Tutumluer%20-%2010_10_2008.pdf

¹⁴ <http://www.millenniumbulkeiswa.gov/sepa-eis.html>

Impacts from transporting coal would be minimal because 1) existing coal dust mitigations reduce the loss of coal dust from trains, albeit at unknown amounts, 2) the proposed action continues the occurrence of 3 to 4 coal trains a day on Montana railway tracks for an additional 4 years, and 3) the analysis conducted for the EIS for the proposed construction and operation of the Tongue River Railroad (Surface Transportation Board, Office of Environmental Analysis 2015) concluded coal dust from trains would not harm human health or the environment. Additionally, in response to lawsuits by environmental groups alleging coal spilled from trains pollutes waterways, BNSF Railway has agreed to study the use of physical covers for coal trains to reduce the effects of blowing coal particles (Portland Tribune 2017).

Section 3.9.4.2 of the EIS will be edited to read:

SCM coal dust ~~would~~ ~~could~~ ~~potentially~~ continue to emit from coal trains and foul railbed ballast for 4 more years under the Proposed Action. However, BNSF requires mitigation measures and SCM has developed appropriate loading procedures.

Coal Dust from Trains – Diesel Engine Impacts and Cumulative Impacts for Increased Coal Train Traffic

From the EIS, Section 3.9.4.2:

It is assumed that BNSF would adjust other coal and non-coal train traffic up or down to account for varying frequency of coal trains from SCM to maximize track use (BNSF 2018). Therefore, the number and frequency for all train traffic would not change (only the duration) and the waiting times for trains would also stay the same...

Thus, for the proposed action alternative here, there would be no additional adverse impacts from train diesel emissions. In contrast, the Washington EIS cited by NPRC involved development of a coal export terminal, which increased the frequency of coal train, storage, and shipping activity.

NPRC-5
cont.

coal. It may be more efficient to create a new load out facility at Youngs Creek than to haul coal to Spring Creek and then take the loaded train uphill from Spring Creek.

Climate Impacts

Coal is the world’s most carbon-intensive fossil fuel. When coal is burned, carbon dioxide (CO₂) and other greenhouse gases are released into the atmosphere (conversely, this CO₂ is trapped as carbon inside the coal in the ground and does not impact the earth’s atmosphere). Coal extraction and combustion have significant impacts on our climate.

DEQ’s dEIS dismisses climate change as outside of the scope of agency analysis (dEIS page 45), citing MCA 75.1.201(2)(a). This is functionally the document’s *entire treatment* of climate change. We presume that this is a reference to that statute’s requirement that the agency look at projects that “may have an impact on the Montana human environment by projects in Montana.”

We are aware that a 2011 bill carried by Butte legislator Jim Keane directed the agency to look at impacts in Montana. However, the impacts of climate change *in Montana* and on Montana are severe and must be thoroughly evaluated and weighed.

It is important that the full climate impacts of this coal’s mining and combustion are taken into account because climate change’s effects on Montana and the world are enormous. The 2017 Montana Climate Assessment found that average annual temperatures in Montana have risen across the state between 2 and 3 degrees Fahrenheit since the 1950s. The report found that by mid-century, Montana temperatures are projected to increase by approximately 4.5 to 6 degrees Fahrenheit, and by up to 9.8 degrees Fahrenheit by the end of the century. In addition to increased temperatures, the assessment finds decreases in projected precipitation across the state, particularly in the central and southern parts of the state.¹⁵

The cumulative impacts of these changes will be enormous. Decreased snowpack will adversely affect Montana’s \$7.1 billion outdoor recreation economy (one of the state’s two largest economic sectors). This economic sector will also be adversely affected by climate change’s negative impact on stream closures and big game populations.¹⁶ Climate change significantly affects Montana’s second largest economy, agriculture, as well. A report issued by Montana Farmers Union found that climate change could cost Montana’s agricultural industry almost 25,000 jobs and \$726 million over the next 50 years.¹⁷ As an example of what climate changes means to individual farmers and ranchers, one of our members who ranches downstream of the Tongue River Reservoir (and the Spring Creek and Decker Mines) has seen significant personal and financial duress as a result of climate change. His experiences are included as “Appendix A” to these comments. The challenges that he and others in agriculture face will only increase exponentially if the state does not take significant action on climate change. A thorough accounting of the impacts of increased coal mining on the climate is a basic fundament of that work.

¹⁵ <http://montanacclimate.org/chapter/executive-summary>

¹⁶ <http://montanawildlife.org/climate-impact/>

¹⁷ <https://montanafarmersunion.com/montana-farmers-union-report-climate-change-could-cost-montana-agriculture-industry-almost-25000-jobs-and-726-million-over-the-next-50-years/>

NPRC-6

Coal Dust from Trains – 500-pounds of coal dust could be lost from each car estimate

The reference used for the estimated loss of 500 pounds of coal dust per railcar is no longer available on the BNSF website. The date it was removed from the website is unknown. It is likely the coal dust loss estimates previously provided on the BNSF website have changed since the Coal Loading Rule was implemented in 2011. The estimated loss of coal dust was based on a large-scale field trial (Super Trial) of coal dust mitigation measures completed by BNSF in 2010. A summary of the Super Trial results is available at (<http://www.bnsf.com/ship-with-bnsf/energy/coal/pdf/coal-super-trial.pdf>). See NPRC-5 (Coal Dust from Trains – Health Impacts) response.

Youngs Creek load out facility comment

The efficient use of the railroad between Spring Creek and Youngs Creek is outside the scope of MEPA per § 75-1-220(1), MCA: “Alternatives analysis” means an evaluation of different parameters, mitigation measures, or control measures that would accomplish the same objectives as those included in the proposed action by the applicant. For a project that is not a state-sponsored project, it does not include an alternative facility or an alternative to the proposed project itself.

Response NPRC-6: Under MEPA, DEQ’s analysis may not include a review of actual or potential impacts beyond Montana’s borders. It may not include actual or potential impacts that are regional, national, or global in nature such as impacts that may result from climate change. Section 75-1-201(2)(a), MCA. Table 3.2-1 in the EIS provides the rationale for consideration of certain resource areas, like climate change. Text was added to Section 3.2 to explain why a detailed analysis of climate change was not included in this EIS. While DEQ cannot analyze the impacts of climate change under MEPA, the Office of Surface Mining will in its Environmental Assessment on the TR1 Project under NEPA, which is expected to be published in 2020.

NPRC-6
cont.

While climate change scorches our economy, it is also scorching public budgets affected by wildfires and firefighting costs. The worst fire years in Montana's recorded history have occurred in the past decade. In 2017 alone, wildlands firefighting costs in Montana neared \$400 million.¹⁸

There are health impacts to Montanans from heat waves and disease vectors that change with average temperature increases. There are impacts to the timber industry as warmer winters encourage the spread of tree-killing pine beetles, and the list goes on.

With every major scientific organization and 97% of individual climate scientists¹⁹ finding strong consensus in the statement that human-caused greenhouse gas emissions are a significant contributor to climate change, it is urgent that DEQ take this seriously. The Fourth National Climate Assessment and Intergovernmental Panel on Climate Change (IPCC) 2018 Special Report makes it abundantly clear that the dangers caused by human-caused-and-exacerbated climate change are more urgent and severe than previously thought and that any pathway to limiting warming to 1.5 degrees Celcius requires a rapid phase-out of CO₂ emission and deep emissions reductions.

Even the Trump Administration's own 2018 National Climate Assessment found devastating climate change impacts. Of note, while the overall assessment is a national document, it contains regional reports. The Northern Great Plains Region chapter²⁰ deals significantly with impacts in Montana, including drought impacts, impacts to agriculture, impacts to recreation and tourism, invasive species, indigenous people, and more. **While climate change is indeed a global problem, it is also a Montana problem and cannot be dismissed as outside of scope.**

With that in mind, DEQ should also apply the social cost of carbon (SCC) in its evaluation of the climate impacts of coal combustion from the coal mined pursuant to the proposed action at the Spring Creek Mine. Under the leadership of the Office of Management and Budget (OMB), the social cost of carbon was developed by a dozen federal agencies and offices in 2010 (and updated in 2013). It is the best existing tool to help agencies and the public when making decisions about projects that impact the climate. The SCC estimates the global financial cost of each ton of extra carbon pollution in the atmosphere and seeks to incorporate impacts as diverse as drought, fire, and diminished agricultural productivity, among other factors.²¹ The SCC is supported by years of peer-reviewed scientific and economic research and has previously been used by federal agencies in both rulemaking and project-level NEPA review.

In June 2014, a U.S. District Court ruled against the federal government in *High Country Conservation Advocates, et al. v. U.S. Forest Service, et al.* citing, among other things, its failure to analyze the SCC.²² After this decision, and in response to a letter from more than two dozen conservation organizations, the U.S. Department of Agriculture affirmed that the SCC is an "appropriate tool for measuring and disclosing the social and economic implications" of coal decisions. DEQ's scope of review should include the SCC both directly and indirectly (as well as

¹⁸ <https://www.insurancejournal.com/news/west/2017/10/02/466164.htm>

¹⁹ <https://climate.nasa.gov/scientific-consensus/>

²⁰ <https://nca2018.globalchange.gov/chapter/22/>

²¹ <https://www.whitehouse.gov/blog/2013/11/01/refining-estimates-social-cost-carbon-and>

<http://www.epa.gov/climatechange/EPAactivities/economics/scr.html>

²² "Court Blocks Coal Mine Expansion For Note Counting The Costs of Carbon Pollution", Nidhi Thakar, June 2014, <http://thinkprogress.org/climate/2014/06/30/3454764/court-blocks-arch-mine-coal-expansion/>

Response NPRC-6 (cont.)

A social cost of carbon analysis was not included in the EIS because its conclusion would provide very limited value without a full cost-benefit analysis. A full cost-benefit analysis is not required under MEPA and is beyond the scope of this EIS. ARM 17.4.617(f). As a state agency, DEQ "must faithfully execute the laws of Montana," which includes MEPA and its implementing rules. *See Merlin Meyers Revocable Trust v. Yellowstone County*, 2002 MT 201, ¶ 21, 311 Mont. 194. "It is the exclusive power of the courts to determine if an act of the legislature is unconstitutional." *Id.* (citing *In re License Revocation of Gildersleeve*, 283 Mont. 479, 484, 942 P.2d 705, 708 (1997)).

NPRC-6
cont.

cumulatively) that would result from the proposed expansion and additional infrastructure at the SCM.

We would argue that DEQ has statutory authority under MEPA to look at the impacts of climate change. Furthermore, DEQ has a constitutional obligation to do so. Montanans have a state constitutional right to a clean and healthful environment²³. Climate change is the largest environmental and public health threat that our state and the world have ever faced. The state's failure to look at the climate impacts of mining coal, and the connected/cumulative impact of burning that coal, is a violation of our constitutional rights, as would be any statute that was construed to prevent the state from taking a hard look at climate change impacts.


Conclusion

The proposed major revision to mining permit C1979012 (referred to as TR1), which would expand the SCM, needs a thorough, honest, and critical analysis. The purpose of an EIS is to disclose all of the information, and to analyze and evaluate that information, so that the environmental consequences of projects are fully available to the public and decision-makers. Those consequences (costs) are then to be weighed against the benefits of the proposed projects before an agency acts.

The project's significant and severe – in many cases irreparable – impacts to the numerous non-mineral resources in the project area; the agricultural economy and vitality of the area and its residents; and the health, life, and safety of the area's residents and those who live downrail, are not adequately addressed by DEQ's draft document. The final EIS must examine the connected and cumulative impacts of coal mining on the environment and people of Montana, our water, and our climate, as well as the major reclamation obligations and responsibilities as yet not completed at the Spring Creek Mine.

Thank you for the opportunity to provide comments on this proposed project. These comments are submitted with the hope that the final EIS prepared by the DEQ will bring substantive and meaningful information together so that a fully informed decision on this project can be made.

Sincerely,



Becky Mitchell
Chair, Northern Plains Resource Council

²³ <https://leg.mt.gov/bills/mca/CONSTITUTION/LX/1.htm>

Appendix A: Statement from Mark Fix, a rancher and surface owner downstream of the Spring Creek Mine near Miles City, on personal impacts of climate change

Climate change's impacts to agriculture must be included in this final EIS. We are seeing more signs of climate change impacts every day. These include drought and fires, but also changes in precipitation patterns (including shifts in and impacts to our winters), as well as storm events.

In 2012 over a million acres of land burned in forest fires in Montana. Several of our upstream neighbors were impacted by the fires in 2012. In 2013, I had an EF one tornado that took off a quarter of my house roof and half of my barn roof, toppled a new circle pivot and uprooted hundreds of cottonwood trees along the river. Many electrical poles were blown over.

In 2014 we had the worst ice jam flooding I have seen since I bought my ranch in 1991. It trapped 50 head of heifers that were going to have their first calf and I was afraid that they had floated down the river. Luckily they found a small patch of higher ground and survived. I had to rebuild the fences taken out by the ice jam and most of those had been rebuilt the year before from the tornado. About this same time frame, there was a bad storm in Eastern Montana similar to the tornado that I had. It killed animals and did a lot of damage. There was also an early snowstorm in South Dakota about that time that killed many cattle and some cattle went almost 50 miles driven by the wind and snow. In 2015, we had the second highest acreage burned in Montana history.

In 2016, an EF-3 tornado hit Baker, Montana and destroyed 6 homes and damaged 50 more. A couple of weeks after the tornado, Baker was hit with baseball-sized hail. There were several bad hailstorms across the state that year. I noticed that the insurance company increased my deductible due to all the hail damage that year.

2017 was another bad fire year in Montana. 2017 became the largest fire year in Montana history with over 1.2 million acres burned. While 2018 was better for fires, the winter of 2017 and 2018 were both long with lots of snowfall. I was feeding cattle later in the spring than I have for several years. We had lots of snow and it was difficult to feed cattle. We had more rain the summer of 2018 and it made it difficult to get the hay dry and baled.

The challenges of climate change are facing us every day. Some of these events are causing some of the folks in agriculture to leave their businesses. I am in the Block Management Program and I could not let as many people on during the hunting season last Fall because there was so much moisture. The trails on the ranch were muddy and the weather was not good for hunting. The winter of 2018-2019 was long and the cattle were stressed. We lost more cows

Response NPRC-7: Potential impacts to land use from the TR1 Project were evaluated in Section 3.5 of the EIS. Please also see Response NPRC-6.

NPRC-7

NPRC-7
cont.

than normal this past winter and we had about a 17 percent death loss in our main herd at branding time. Climate change is affecting our bottom line and our ability to make a living.

There was a flash flood in the Powderville area this spring and it rained more than 6 inches in 24 hours. That area also got 10 inches of rain in a 2 week timeframe. The rains received in the area this spring made it difficult to put up hay. The hay quality is not as good as normal and hopefully the cattle will not suffer due to mold in the hay.

The winter could not release its grasp this spring and we had very late snows. It snowed during the Bucking Horse Sale in Miles City. Bozeman had snow as late as June 21st. Although we didn't have snow that late in eastern Montana, we still had frosts in the morning. The alfalfa was stunted from all the continued frosts that we had. The climate impacts are different than we are used to in agriculture and it will have its toll on our crops and livestock. The impacts to agriculture need to be considered.

My name is Mark Fix. I ranch outside of Miles City and I am the chair of Northern Plains Resource Council's Coal Task Force. Northern Plains is a grassroots conservation and family agriculture group that organizes Montanans to protect our water quality, family farms and ranches, and our unique quality of life. Northern Plains was founded in 1972 over coal issues, and many of our members live and work in coal country and are directly impacted by what happens there. I ranch downstream of the Spring Creek Mine.

Cumulative and Connected Impacts

The Spring Creek Mine cannot be considered in a vacuum. The impacts of the neighboring Decker Mine and its planned expansion, and their cumulative impacts on land and water need to be taken into account so that the agency does not miss the forest for the trees. In addition, the Agency must also take into account the impacts of the proposed Youngs Creek Mine, particularly given the proposed haul road from Youngs Creek to Spring Creek. The draft EIS is woefully deficient in these regards.

NPRC-8

In addition to coal mining, the Agency must also take into account the past and potential future impacts of oil and gas development. Coalbed methane development has had a significant impact on the Tongue River and other southeastern Montana waterways. The cumulative impact of pollution such as salt loading from development must be taken into account to ensure that water quality is not degraded for downstream water users like myself. The Tongue River Total Maximum Daily Load (TMDL) is currently being worked on. The salt load at the mouth of the Tongue River is being exceeded in the spring. DEQ is being pressured to allow more salts in the Tongue from Wyoming. We cannot take any more salt load from coal and coal bed methane. It will destroy our irrigated lands and cannot be permitted. We cannot accept more salt load from Montana mines or Wyoming mines.

Bankruptcy and Bond Replacement

The Agency must also take into account the uncertain future of the Spring Creek Mine. Cloud Peak Energy is still in bankruptcy. The Navajo Transitional Energy Corporation has yet to close on its purchase of the mine. At the very least, DEQ should not approve a permit expansion to a mine whose ownership future is uncertain.

NRPC-9

Additionally, DEQ should require full replacement of all surety bonds at the mine prior to transfer of ownership or permit expansion. DEQ must also carefully scrutinize the ratings and strength of those replacement bonds and have a plan in place for potential bond forfeiture.

Tom Clark, the mine's back-up bidder, recently failed part-way through his attempt to acquire the Kemmerer Mine in Wyoming due to failure to adequately acquire and ensure replacement bond. In an uncertain coal mine, DEQ should be particularly careful that taxpayers are not left holding the bag.

NRPC-10

Reclamation and Resources

As the ratio of disturbed to reclaimed acres continues to grow at coal mines across the state, it creates a heightened risk for taxpayers in the case of default or abandonment. It also creates a

2. Mark Fix

Response NPRC-8: Five current and future related actions were considered in the cumulative impacts (see Section 4.1 of the EIS): (1) the new SCM AM5 haul road; (2) Decker coal mines; (3) additional coal leases; (4) a railroad spur; and (5) oil and gas activities. The proposed Youngs Creek Mine is in Wyoming and the EIS cannot examine potential impacts outside of Montana (Section 75-1-201(2)(a), MCA), but the associated actions in Montana for the Youngs Creek Mine, including the new haul road, railroad spur, and additional coal leases in Montana were included in the cumulative impacts analysis. Potential impacts to water quality and quantity from oil and gas activities were included in the cumulative impact analysis. The total area of disturbance assessed for cumulative impacts was approximately 4,917 acres.

As noted by the commenter, DEQ is developing a TMDL for the Tongue River. This EIS did not analyze a TMDL for the Tongue River because one does not yet exist. Further, as discussed in Section 3.11.2, all discharges would comply with applicable MPDES permit limits. Effluent limits are designed to prevent degradation of water quality in compliance with Montana's non-degradation policy.

Response NPRC-9: 11 U.S.C. § 525(a) does not allow a governmental unit to discriminate against debtors, which includes denying a permit to an applicant that is or has been a debtor under the Bankruptcy Act, 11 U.S.C. §§ 101 *et seq.* Therefore, DEQ cannot consider Cloud Peak Energy's bankruptcy in its MEPA analysis.

However, pursuant to § 82-4-223, MCA, DEQ may not issue a permit under SMCRA until the operator has filed a performance bond with DEQ made payable to the state of Montana in an amount to be determined by DEQ. The bond amount is based upon the cost to the state if it were to reclaim the permitted area as described in its associated reclamation plan. ARM 17.24.1102. DEQ will not issue an approval of the TR1 Project until a satisfactory bond is secured.

NRPC-10
cont.

higher risk for water users, in addition to vegetative and wildlife communities. A larger mine means more dust, more noise, more lights, more traffic, and more people. It is difficult to re-establish persistent vegetative communities in the semi-arid Powder River Basin and this becomes even truer the longer spoil piles sit and sites go without being reclaimed.

The EIS needs to take a better harder look at reclamation. For instance, while it acknowledges impacts to soil, it partially dismisses them with a note that soil productivity will return a decade after reclamation. Montanans have been waiting decades for reclamation at existing mines. Mine's failures to reclaim contemporaneously must be taken into account when analyzing the impacts of expansion.

Climate Change

Finally, the Agency must take a hard look at the climate impacts of this mine expansion. The draft Environmental Impact Statement dismissed climate change as outside of its scope and summarily fails to deal with it. This is unacceptable.

The Fourth National Climate Assessment and Intergovernmental Panel on Climate Change (IPCC) 2018 Special Report make it abundantly clear that the dangers caused by human-caused-and-exacerbated climate change are more urgent and severe than previously thought and that any pathway to limiting warming to 1.5 degrees Celsius requires a rapid phase-out of CO₂ emission and deep emissions reductions.

NRPC-11

The 2017 Montana Climate Assessment found that average annual temperatures in Montana have risen across the state between 2 and 3 degrees Fahrenheit since the 1950s. The report found that by mid-century, Montana temperatures are projected to increase by approximately 4.5 to 6 degrees Fahrenheit, and by up to 9.8 degrees Fahrenheit by the end of the century. In addition to increased temperatures, the assessment finds decreases in projected precipitation across the state, particularly in the central and southern parts of the state.

A report issued two years ago by Montana Farmers Union found that climate change could cost Montana's agricultural industry almost 25,000 jobs and \$726 million over the next 50 years.

There must be another alternative in this EIS that should be the preferred alternative and it must provide options that reduce coal mining and increase reclamation into the future.

Thank you for allowing me to comment. Northern Plains will submit further comments by the deadline.

Response NRPC-10: The SCM continues to mine coal farther from the Plant and railroad loadout and needs roads through previously mined and reclaimed areas. Many of the previously mined areas are reclaimed but Phase IV bond release has not been granted because, pursuant to ARM 17.24.1116 (6)(d)(i), Phase IV bond release can only occur after all disturbed lands within a designated drainage basin have been reclaimed in accordance with phases I, II, and III requirements, for that to occur. Table 3.10.1 in the EIS shows the acres by reclamation stage for the No Action and Proposed Action. SCM has met the conditions and stipulations for reclamation outlined in MSUMRA (§ 82-4-235, MCA) and complied with their reclamation schedules and time frames. The Proposed Action would result in a longer period for final established reclamation but the SCM mine would continue to operate at or below their approved mine production rate of less than 18 million tons per year. Please also see Responses NRPC-2 and NRPC-4.

Response NRPC-11: Please see Response NRPC-6. Additionally, Section 3.7.4 of the EIS identified impacts that are outside the scope of the EIS analysis which included the social cost of carbon and the economic impacts from climate change on other industries such as timber, agriculture, or recreation, and the cost of fire-fighting.



September 26, 2019

Jen Lane
 Department of Environmental Quality
 1520 East 6th Avenue
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Submitted via email: <http://svc.mt.gov/deq/publiccomment/>.

Re: MT DEQ, Spring Creek Mine TR1 Draft EIS

Dear Ms. Lane:

Cloud Peak Energy appreciates the opportunity to review and comment upon the Draft Environmental Impact Statement (DEIS) for Spring Creek Mine's TR1 permit revision. Cloud Peak Energy is one of the largest U.S. coal producers, and owns and operates the Spring Creek Mine, among others, in the Powder River Basin. As one of the safest coal producers in the nation, Cloud Peak Energy specializes in the production of low sulfur, subbituminous coal. With approximately 1,200 employees, the company is widely recognized for its exemplary performance in its safety and environmental programs.

Support for the Proposed Action Alternative:

CPE-1

Cloud Peak Energy strongly supports the Proposed Action Alternative identified in the DEIS. This alternative contemplates coal development in a new lease area that will result in minimal environmental impact while continuing many ongoing benefits to the mine's employees and the citizens of Montana.

Spring Creek Mine is noted for its exemplary reclamation and environmental protection programs. In 2017, the site won the federal Office of Surface Mining's Excellence in Surface Coal Mining Reclamation Award for enhanced reclamation success through the diversity of topography, soil and vegetation. In 2018, the mine was recognized with the Outstanding Reclamation Award from the National Association of State Land Reclamationists (NASLR) for effective reclamation and innovative practices. Approval of the Proposed Action Alternative will allow the site to continue to employ its reclamation practices to restore high-quality habitat and maintain, and even improve the habitat for livestock grazing and wildlife use.

CPE-2

As noted in the DEIS, the benefits to the mine's employees and citizens of Montana include:

- An ongoing fuel source of 72 million tons of coal;

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3. Cloud Peak Energy

Response CPE-1: Thank you for your comment.

Response CPE-2: Thank you for your comment.

CPE-2
cont.

- Continued employment for workers at the mine;
- An ongoing tax base to federal, state, and local governments;
- Ongoing royalty payments to mineral resource owners;
- Continued support to local businesses for a minimum of 4 more years, and;
- An ongoing source of income for SCC, CPE, and its shareholders.

Any efforts towards implementation of the No Action Alternative will result in the loss of the above benefits and significant financial harm to Montana and particularly to Bighorn County and the southeastern Montana region.

The Draft EIS is a Thorough Evaluation of the Environmental Impacts

CPE-3

It should be noted that the proposed project has previously been through a National Environmental Policy Act (NEPA) environmental impact analysis conducted by the Bureau of Land Management as a part of its leasing process. That analysis resulted in a finding of no significant impact. The Montana Department of Environmental Quality (MDEQ) has been conducting an environmental review for the permit revision since its initial submittal in 2012. Consequently, the TR1 project has and remains the subject of many detailed environmental reviews. None of these reviews has identified any areas of significant concern. Spring Creek Mine's detailed environmental baseline studies, strong environmental programs, detailed mitigation plans and agency reviews provide strong evidence that all environmental issues have been identified and adequately addressed in the review process. This EIS is a cornerstone of the process and is provides a robust evaluation that adequately meets the purpose of Montana's MEPA process – which is not to impose requirements but is to inform the state's decision making process.

Response CPE-3: Thank you for your comment.

CPE-4

We also note that the draft environmental impact statement does not include an analysis of greenhouse gases and climate change. Climate change is clearly a global issue. MDEQ has correctly interpreted Montana's laws at 75-1-201 (2) (a), which specifically prohibit a review of impacts beyond Montana's borders. However it is further to be noted that these impacts will be addressed in other Federal National Environmental Policy Act (NEPA) documents to be completed as part of the subsequent approval process for this project.

Response CPE-4: Thank you for your comment.

Thank you again for the opportunity to review and comment upon the Draft Environmental Impact Statement related to our TR1 project. We appreciate the Montana Department of Environmental Quality's continued efforts to review and advance this project.

Sincerely,



Darryl Maunder
Director Environmental and Regulatory Affairs
Cloud Peak Energy



MONTANA ENVIRONMENTAL INFORMATION CENTER

4. Montana Environmental Information Center

Jen Lane
Montana Department of Environmental Quality
1520 East Sixth Avenue
PO Box 200901
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Response MEIC-1: Please see Response NPRC-6.

Dear Miss Lane,

The undersigned residents of Montana and citizens of the United States are opposed to the TR1 expansion of the Spring Creek coal strip mine in Southeastern Montana, based in large part on the impacts to our climate. Specifically, the undersigned citizens of Montana state the following:

MEIC-1

I'm contacting you regarding the proposed TR1 expansion of the Spring Creek coal mine. It is a dereliction of your duty, and a violation of my constitutional right to a clean and healthful environment, to ignore the climate impacts that will result from the expansion of the Spring Creek Mine in the environmental impact statement.

The impacts from climate change in Montana are severe and well documented. The Montana Climate Assessment is already compiled and readily available to DEQ by the Montana Institute on Ecosystems Climate Assessment.

The DEQ needs to set aside the current draft environmental impact statement, conduct an actual environmental review that considers climate change, and reject the expansion of the Spring Creek mine.

I sincerely hope that you take these voices into account and actually consider climate change in the TR1 environmental review. Please contact me with any questions.

For Montana,

Derf Johnson
Staff Attorney, MEIC

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The table attached to MEIC's letter contains the names, email addresses, and street addresses of 307 signators.

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September 24, 2019

Montana Department of Environmental Quality
Attn: Jen Lane, Director's Office
PO Box 200901
Helena, MT 59620-0901

RE: TR1 Draft EIS

Dear Ms. Lane,

NTEC-1

Navajo Transitional Energy Company (NTEC) will acquire the Spring Creek Mine in October 2019. Upon acquisition, NTEC will continue to employ the majority of the current Spring Creek Mine staff, and exercise best practices in mining and reclamation. NTEC will follow through with the Tr-1 revision as presented. NTEC is positioned to return the Spring Creek Mine to profitability while building upon Cloud Peak's excellent safety, environmental, and reclamation effort.

Response NTEC-1: Thank you for your comment.

NTEC-2

Approval of the Spring Creek Mine TR1 Major Revision (TR1) is critical to the local economy and provides significant benefit to the state of Montana. The increase in disturbance acreage will extend the life of the mine for another four years but will not alter the existing permitted surface boundary. Stepping in for the previous owner, NTEC will be able to continue to provide product to customers, employ the Spring Creek Mine staff, and sustain economic contributions for federal, state, and local governments, including expected royalties for mineral resource owners, and support for local businesses.

Response NTEC-2: Thank you for your comment.

NTEC-3

Our review of the draft environmental impact statement finds it to be a thorough and a comprehensive evaluation of the environmental impacts. Spring Creek Mine's reclamation and environmental protection plans are well designed to mitigate the identified impacts.

Response NTEC-3: Thank you for your comment.

NTEC-4

NTEC will follow through with reclamation and mitigation requirements and obligations. The development of TR1 is expected to improve reclamation by increasing the amount of flat benched areas to better resemble pre-mining topography. This improvement to the reclamation plan will improve Sage Grouse habitat, in addition to the contributions being made through the voluntary Sage Grouse mitigation measures (as outlined in TR1).

Response NTEC-4: Thank you for your comment. The variable reclaimed topography will provide better diverse vegetation including shrubs. A sage grouse habitat functional acreage approach was used to calculate and estimate the direct and secondary impacts associated with the Proposed Action. The total compensatory amount for loss of sage grouse habitat from the Proposed Action was \$107,727 and will be paid by SCM prior to any disturbances in the TR1 Project Area.

NTEC-5

NTEC is a recognized leader in safety and reclamation; having been awarded the Sentinels of Safety Award from the National Mining Association, the Good Neighbor Award from the Office of Surface Mining Reclamation and Enforcement, and the Excellence in Reclamation award from the New Mexico Mining Association. NTEC is a dedicated community partner and awards grants annually from its own Community Benefit Fund to the communities in which NTEC operates.

Response NTEC-5: Thank you for your comment.



NTEC-6

NTEC looks forward to seamlessly transitioning into the ownership of Spring Creek. Upon possession NTEC will continue operations, reclamation and mitigation as required by the TR1 approvals. NTEC has a history of improvement, and looks to build upon the current culture of safety and environmental management with our excellent record.

NTEC-7

NTEC finds the document to be thorough and complete. NTEC will follow through on the reclamation efforts and mitigation requirements identified. We support the action alternative and look forward to the finalization of the TR1 EIS process.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Clark Moseley', is written over a faint, illegible typed name.

Clark Moseley, CEO

Response NTEC-6: Thank you for your comment.

Response NTEC-7: Thank you for your comment.



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Defending the West www.weste

6. Western Environmental Law Center

Western Environmental Law Center

September 26, 2019

Jen Lane
Montana Department of Environmental Quality
1520 East 6th Ave.
PO Box 200901
Helena, MT 59601
jlane2@mt.gov

RE: DEIS for TR1 Expansion of Spring Creek Strip-Mine

Ms. Lane,

I am submitting the following comments and exhibits on behalf of 350 Montana, the Montana Environmental Information Center, the Sierra Club, WildEarth Guardians, and the Center for Biological Diversity (collectively, "Conservation Groups") on the DEIS for the TR1 expansion of the Spring Creek strip-mine. The TR1 expansion would add 977 acres and 72 million tons of coal to the strip-mine, extending operations for approximately 4 years.

Introduction

Climate change is a reality that now affects every region of the world. The human implications of currently projected levels of global heating are catastrophic. Storms are rising and tides could submerge entire island nations and coastal cities. Fires rage through our forests, and the ice is melting. We are burning up our future—literally.¹

WELC-1

Response WELC-1: Please see Response NPRC-6.

¹ UN Human Right, Office of the High Commissioner, Global Update at the 42nd session of the Human Rights Council (Sept. 9, 2019), available at

WELC-1
cont.

So states the UN High Commissioner on Human Rights. The window for stemming the worst impacts of climate change is perilously narrow. As stated by one of the most eminent climate scientists of this generation: “Continued high fossil fuel emissions unarguably sentences young people to either a massive, implausible cleanup or growing deleterious climate impacts, or both.”² Permitting continued large-scale coal strip-mining at the Spring Creek Mine violates the fundamental constitutional and human rights of the conservation groups, their members, and all Montanans.

This letter incorporates by reference prior comments on the Spring Creek Mine.³ The concerns raised in that letter about the mine’s direct, indirect, and cumulative impacts to water resources, the impacts of climate change, the mine’s ongoing violation of fundamental constitutional and human rights remain valid and must be addressed in any final environmental impact statement (FEIS) for this mine expansion.

I. Conservation Groups

350 Montana is a Montana-based organization that works to reduce atmospheric CO₂ concentrations to 350 ppm by implementing strategic actions and advocating policies to end fossil fuel burning with the greatest urgency. 350 Montana envisions a rapid conversion to a 100 percent renewable global energy system using wind, water, and solar. 350 Montana works with the global grassroots climate movement to achieve these goals and safeguard Earth’s life-support systems.

The Montana Environmental Information Center (MEIC) is a non-profit environmental advocacy organization founded in 1973 by Montanans concerned with protecting and restoring Montana’s natural environment. MEIC plays an active role in promoting and protecting Montana’s outdoor heritage, clean air, clean water, and a healthy climate. MEIC is committed

<https://www.ohchr.org/EN/NewsEvents/Pages/DisplayNews.aspx?NewsID=24956&LangID=E> (attached as Exhibit 11).

² Hansen et al., *Young People’s Burden*, 8 Earth Systems Dynamics 2017 (attached as Exhibit 1)

³ Letter from WELC to DEQ (Feb. 10, 2014) (attached as Exhibit 2).

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³ Letter from WELC to DEQ (Feb. 10, 2014) (attached as Exhibit 2).

environmental issues in the West in the most strategic and effective manner. WELC works at the national, regional, state, and local levels; and in all three branches of government. WELC integrates national policies and regional perspective with the local knowledge of our 100+ partner groups to implement smart and appropriate place-based actions.

II. DEQ must condition permitting on NTEC’s unconditional waiver of sovereign immunity.

In order to receive a permit to mine coal in Montana, the permittee must be subject to the provisions of SMCRA and MSUMRA. 30 U.S.C. § 1260(b)(1); ARM 17.24.405(6)(a). Here, however, the likely eventual permittee, the Navajo Transitional Energy Company, has indicated that it intends to use the cloak of sovereign immunity to effectively invalidate the citizen enforcement provisions of both of these laws.

In order to obtain a permit under MSUMRA, an applicant must demonstrate that all provisions of the law can be complied with. However, NTEC has indicated that it intends to use tribal sovereign immunity to prevent members of the public from enforcing the requirements of MSUMRA and other applicable public laws, stating in a recent advertisement that “NTEC, as a wholly owned tribal entity is entitled to the protection of sovereign immunity. Consequently, as set out in [in a recent Ninth Circuit ruling], NTEC is not subject to the typical rounds of endless court challenges these groups bring against the businesses they seek to shut down.”⁴ In order to assure that the provisions of MSUMRA will be complied with—including provisions assuring citizens the right to seek judicial review—DEQ must condition any permit on NTEC’s unconditional waiver of sovereign immunity, including waiver of sovereign immunity from citizen participation in permitting, enforcement, and judicial review. Indeed, to permit an entity that may be able to use its sovereign immunity to deny the public due process for government violations of law, would violate the states obligation to “provide adequate remedies for the protection of the environmental life support system from degradation and provide adequate remedies to prevent unreasonable depletion and degradation of natural resources.” Mont. Const. art. IX, § 1. The State is

WELC-2

⁴ NTEC, Advertisement, Navajo Times (Sept. 12, 2019) (attached as Exhibit 3).

Response WELC-2: DEQ agrees that any person seeking to operate a coal mine in Montana in any capacity, whether as a contract miner or a permit transferee, must demonstrate [] compliance with MSUMRA. Section 82-4-227(a)(a), MCA (applicant must “affirmatively demonstrate that the requirements of this part and rules will be observed...”). While neither NTEC’s previously-granted contract miner authorization to operate SCM nor NTEC’s pending application for transfer of the SMC Permit are the agency action at issue with respect to TR-1, DEQ offers the following response to Conservation Groups’ comments on NTEC’s sovereign immunity:

As a state agency duly empowered by the delegation of authority from the Legislature to administer MSUMRA, DEQ is required to act in conformity therewith. By way of an acceptability letter dated October 25, 2019, DEQ authorized NTEC to commence new contractor operations at the Spring Creek Mine pursuant to ARM 17.24.427. Such new contractor authorization was expressly conditioned upon an attached Interim Limited Waiver of Sovereign Immunity Agreement (the “Interim Waiver”) also dated October 25, 2019. The Interim Limited Waiver thus served a regulatory function of curing the single deficiency identified in DEQ’s Deficiency Letter dated October 23, 2019 (“Deficiency Letter”), which had rejected NTEC’s initial notice of new contractor operator dated October 9, 2019, ¶ 2. See Interim Waiver. As DEQ’s Deficiency Letter explained, NTEC could not (even on an interim contractor basis), lawfully operate a Montana coal mine without a limited waiver of NTEC’s asserted sovereign immunity to DEQ and to third parties in consideration of the privilege and benefit of lawfully operating a duly-permitted coal mine in Montana. *Id.* at 2-3.

While NTEC’s initial notice of contractor operation offered a limited waiver of NTEC’s asserted tribal corporation sovereign immunity with respect to any claims by DEQ in connection with NTEC’s operation of the Spring Creek mine, one principal area of disagreement remained the need for NTEC to waive its asserted sovereign immunity to third parties with regard to citizen suits under MSUMRA, including the mandamus provision set forth in Section 82-4-252(3), MCA, which expressly allows residents of Montana to commence a civil action

WELC-2
Cont.

Response WELC-2 (cont.):

directly against an entity that is alleged to be in violation of MSUMRA. Deficiency Letter at 2.

The Interim Waiver cured the single deficiency in NTEC's notice of new contractor operation by providing to DEQ a clear and express limited waiver of NTEC's sovereign immunity, for the limited purposes of: *The obligations and duties of NTEC for all laws administered by the DEQ in effect as of the date of this waiver or hereinafter enacted, including, without limitation, the Montana Strip and Underground Mine Reclamation Act (MSUMRA) (Title 82, Ch. 4, part 2, MCA) and regulations implementing the same (collectively, the "Act").* (emphasis added)

The obligations and duties of NTEC under the laws administered by DEQ include duties and obligations to DEQ, to third parties, and in certain circumstances, to the federal Office of Surface Mining, Reclamation and Enforcement ("OSMRE"). Section 82-4-227(a)(a), MCA (applicant must "affirmatively demonstrate[] that the requirements of this part and rules will be observed...").

While the Interim Waiver is provided "to" DEQ, DEQ could not have contracted otherwise. But DEQ could (and did) receive NTEC's clear and express waiver for all obligations and duties of NTEC for all laws administered by the DEQ in consideration of the privilege and benefit of lawfully operating a duly-permitted coal mine in Montana. To that end, NTEC's authority to lawfully operate a Montana coal mine is expressly predicated upon the Interim Waiver, which serves the regulatory function of curing the single deficiency identified in DEQ's Deficiency Letter, that is, the failure to provide a waiver to third parties under applicable citizen suit provisions. Interim Waiver at 2; Deficiency Letter at ¶ 2. On March 10, 2020, NTEC executed a durable waiver of sovereign immunity which carried forward the waiver language of the Interim Waiver to include the obligations and duties of NTEC under all laws administered by the State, not just those administered by DEQ.

MSUMRA is in large part a remedial statute which provides multiple, separate and independent remedies for both DEQ and the citizens of Montana. To be sure, the legislature enacted MSUMRA "mindful of its constitutional obligations under Article II, section 3, and Article IX of the Montana constitution ." in order to, among other things,

WELC-2
Cont.

Response WELC-2 (cont.):

“provide adequate remedies for the protection of the environmental life support system from degradation and provide adequate remedies to prevent unreasonable depletion and degradation of natural resources.” Section 82-4-202(1), MCA (emphasis supplied). MSUMRA thus serves to protect the inalienable rights of all Montanans including the right to a clean and healthful environment (Mont. Const. Art. II, § 3) and to “provide adequate remedies” for the protection of that environment. Mont. Const. Art. IX, § 1(3). *See also* Mont. Const. Art. IX, § 3 (water rights).

Montana District Courts have original jurisdiction over all felony criminal cases and all civil matters and cases at law and in equity. Mont Const. Art. VII, § 4(1). Montana’s Courts “shall be open to every person, and speedy remedy afforded for every injury of person, property, or character” (Mont Const. Art. II, § 16) and “No person shall be deprived of life, liberty, or property without due process of law.” Mont Const. Art. II, § 17. The State of Montana has, consistent with such principles of justice and due process, waived its own sovereign immunity “from suit for injury to a person or property, except as may be specifically provided by law by a 2/3 vote of each house of the legislature.” Mont Const. Art. II, § 18. SMCRA also provides for (civil court) citizens suits to be brought against DEQ for failing to enforce MSUMRA, or against any person alleged to be in violation of MSUMRA or SMCRA. 30 U.S.C. § 1270. Citizens may also petition the federal Office of Surface Mining and Reclamation to conduct inspections of Montana Coal Mines and to “enforce those requirements and permit conditions imposed under a State program not being enforced by a State .” 30 CFR 842.11(a)(3).

NTEC has provided a durable, limited waiver of sovereign immunity. That waiver of sovereign immunity provides a waiver of all of NTEC’s duties and obligations under all laws administered by DEQ, with all the rights and remedies available to Montana DEQ and/or private citizens under such laws.

additionally obligated to assure that “Courts of justice shall be open to every person,” and to deny judicial review to citizens would violate the rights of Montana citizens’ access to the courts. Mont. Const. art. II, § 16.

III. The complete failure to analyze the impacts of climate change violates Montanans’ right to a clean and healthful environment and DEQ’s responsibility to protect our clean and healthful environment.

A. Climate Change

Based on an overwhelming amount of climate evidence published in recent years, DEQ must acknowledge the findings of recent climate reports, including the Fourth National Climate Assessment of 2018 and those prepared by the Intergovernmental Panel on Climate Change (IPCC) and U.S. Geological Survey. Additionally, information published in January 2019 by Oil Change International specifically highlights the urgent need for federally-managed fossil fuels to remain in the ground in order to effectively combat climate change. The findings of these recent and important climate reports are summarized below.

Fourth National Climate Assessment

Prepared by the U.S. Global Change Research Program and published in 2018, the Fourth National Climate Assessment, Volume II (“NCA4”) identifies and evaluates the risks of climate change that threaten the U.S., and how a lack of mitigation and adaptation measures will result in dire climate consequences for the U.S. and its territories. This report builds upon the foundational physical science set out in the first volume of NCA4, the 2017-released *Climate Science Special Report*, which analyzed how climate change is affecting geological processes across the U.S.⁵ Volume II focuses on national and regional impacts of human-induced climate change since the Third National Climate Assessment in 2014, as well as

WELC-3

Response WELC-3: Thank you for your comment. Please see Response NPRC-6.

⁵ USGCRP, Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II: Report-in-Brief (2018) 1. (Attached as Exhibit 4).

WELC-3
cont.

highlighting the future of global warming that will jeopardize human health, economy, and the environment.

The report affirms that it is no longer reliably true that current and future climate conditions will resemble the recent past. Due to human activities that produce greenhouse gas emissions, the atmospheric concentration of carbon dioxide has increased approximately 40 percent since the beginning of the industrial era in the 19th century.⁶ In fact, USGCRP concludes that evidence of anthropogenic climate change is staggering, and that the impacts of climate change are intensifying across the U.S. and its territories. These impacts are multiplying climate risks to Americans' physical, social, and economic well-being.⁷ Climate risks threatening the U.S. and its territories include: impacts to the economy, such as property losses up to \$1 trillion in coastal property destruction; loss of reliable and affordable energy supplies and damaged energy infrastructure; declines in agricultural productivity; loss of two billion labor hours annually by 2090 due to temperature extremes; recreational and cultural losses of wildlife and ecosystems such as coral reefs; decreased water quality and security; diminished snowpack, sea level rise, and frequent flooding; increase in droughts, wildfires, and invasive species; and rise in deaths across vulnerable populations due to extreme weather events and heat waves.⁸ To avoid these grave scenarios, the public and private sectors must invest in and implement mitigation actions to reduce greenhouse gas emissions, as well as adopt adaptation plans to prepare for future impacts.

These findings are significant in regards to DEQ moving forward with the TR1 expansion, since no matter the amount carbon dioxide produced from fossil fuel extraction and end-source combustion, NCA4 unequivocally states that we must immediately reduce U.S. greenhouse gas emissions. DEQ must take into account this updated climate report, and explicitly

⁶ *Id.* at 30.

⁷ *Id.* at 26.

⁸ *Id.* at 36-48.

WELC-3 cont. { acknowledge its findings. We urge DEQ to consider the report’s conclusions and not move forward with the proposed strip-mine expansion.
IPCC SR 1.5

In October 2018, the Intergovernmental Panel on Climate Change (“IPCC”) released a special report on the impacts of global warming, commissioned by the Paris Agreement of 2016. *Global Warming of 1.5°C*, finds greenhouse gas emissions produced by human activity have significantly contributed to global warming since the industrial revolution of the 19th century, increasing the rise in global temperature by 0.2°C per decade at present.⁹ The report forecasts the state of the climate at 1.5°C and 2°C, describing the devastating consequences continued warming has for our earth—destroying ecosystems, disrupting global economy, and jeopardizing public health. The report is a stark warning that delayed actions to cut greenhouse gas emissions, as well as the implementation of other mitigation and adaptation measures to climate change, will be extremely costly.

WELC-4 { The IPCC report assessed scientific, technical, and socio-economic literature to compare the impacts of global warming at 1.5°C to 2.0°C above pre-industrial levels of greenhouse gas emissions, and the results are severe. At 2.0°C warming, as compared to 1.5°C, the following will be even more certain to occur: heavy precipitation and flooding; loss of ice sheets in Antarctica and Greenland triggering multi-meter sea level rise; heat waves, heat-related morbidity and mortality, and spread of vector-borne diseases; species loss and extinction, including doubling the number of insects, plants, and invertebrates losing over half of their geographic range; increased risks of forest fires and the spread of invasive species; increase in ocean temperature, acidity, and deoxygenation; risks to marine biodiversity, fisheries, and the near extinction of coral reef ecosystems; climate-related risks to health, livelihoods, food security, and freshwater

⁹ IPCC, *Global Warming of 1.5°C*, An IPCC Special Report on the Impacts of Global Warming of 1.5°C Above Pre-Industrial Levels and Related Global Greenhouse Gas Emission Pathways, in the Context of Strengthening the Global Response to the Threat of Climate Change, Sustainable Development, and Efforts to Eradicate Poverty, Summary for Policymakers at SMP-4 (2018) (hereafter “IPCC”) (attached as Exhibit 5).

Response WELC-4: Thank you for your comment. Please see Response NPRC-6. Further, DEQ cannot deny a coal mining permit under MEPA. Sections 75-1-102(3) and 201(4)(a), MCA. A substantive decision on whether to issue or deny a coal mining permit would be made pursuant to MSUMRA, §§ 82-4-201, MCA, *et seq.*

supply; and risks to economic growth and the increase of poverty by several hundred million by 2050.¹⁰

Global Warming of 1.5°C concludes that anthropogenic CO₂ emissions must decline approximately 45 percent from 2010 levels by 2030 in order to stay within the range of 1.5°C, reaching net zero emissions around 2050.¹¹ In addition to cutting carbon emissions, the IPCC reports other non-CO₂ emissions, including methane, must be deeply reduced to achieve limiting global warming to 1.5°C with no or limited overshoot.¹² To progress in reducing global greenhouse gas emissions, rapid and transformative changes must be made to our global economy, particularly energy infrastructure. For instance, the IPCC suggests the complete phase-out of coal, explaining “the use of coal, with no or limited overshoot of 1.5°C, shows a steep reduction in all pathways and would be reduced to close to 0% (0-2%) of electricity (*high confidence*).”¹³

In summary, the lower the greenhouse gas emissions in 2030, the less challenging it will be to limit global warming to 1.5°C. Far-reaching climate mitigation and adaptation efforts are needed to both slow the rise in global temperature as well as prepare the planet for climate change impacts that are already in place, due to past and ongoing greenhouse gas emissions. The report specifically notes that “the challenges from delayed actions to reduce greenhouse gas emissions include the risk of cost escalation, lock-in carbon-emitting infrastructure, stranded assets, and reduced flexibility in future options in the medium- and long-term (*high-confidence*).”¹⁴ Therefore, collective, international cooperation on all levels is needed to limit global warming to 1.5°C.

¹⁰ *Id.* IPCC at 8-14.

¹¹ *Id.* at 15.

¹² *Id.* at 16.

¹³ *Id.* at 21.

¹⁴ *Id.* at 24.

WELC-4
cont.

WELC-4
cont.

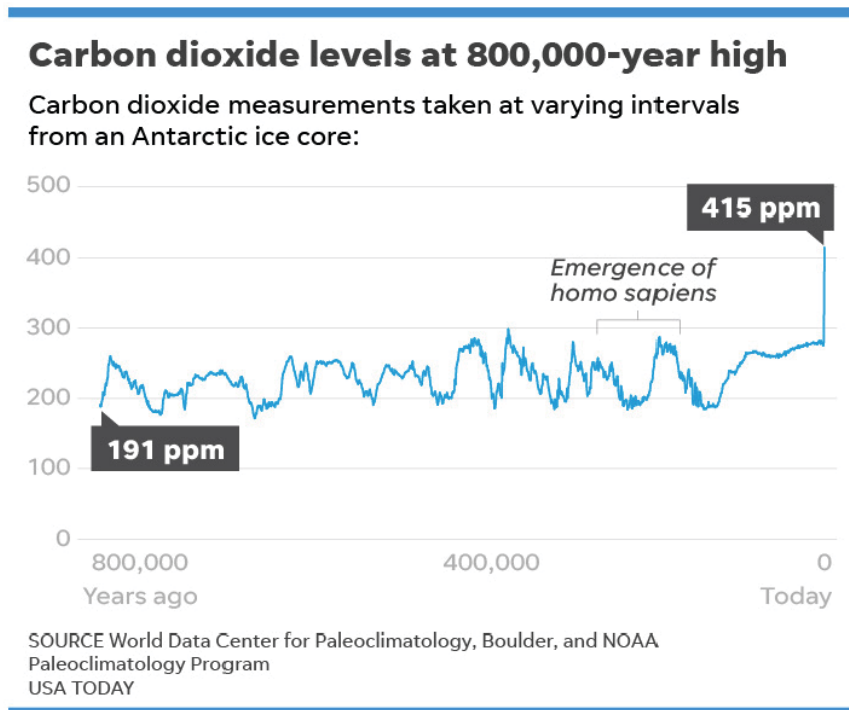
Further, there is strong evidence that even limiting global warming to 1.5°C is “not considered ‘safe’ for most nations, communities, ecosystems, and sectors.”¹⁵ Instead, the unrefuted evidence shows that the maximum safe level of carbon dioxide concentrations in the atmosphere is 350 parts per million.¹⁶ Currently, global carbon dioxide concentrations are terrifyingly high: 415 ppm.¹⁷

¹⁵ *Id.* at 5-4.

¹⁶ *E.g.*, Hansen et al., *Young People’s Burden* at 1.

¹⁷ Miller & Rice, *Carbon Dioxide Levels Hit Landmark at 415 ppm, Highest in Human History*, US Today (May 13, 2019), available at <https://www.usatoday.com/story/news/world/2019/05/13/climate-change-co-2-levels-hit-415-parts-per-million-human-first/1186417001/>.

WELC-4
cont.



Given this report from the IPCC and its strong evidence of the rise in global temperature and severity of future climate change impacts, DEQ should deny the proposed coal mine expansion and instead take steps to ensure that its decisions do not further exacerbate the climate crisis.

U.S. Geological Survey

WELC-5

The U.S. Geological Survey (USGS), a bureau within the U.S. Department of the Interior, released a study in November 2018 that calculates the amount of greenhouse gases emitted from fossil fuel extraction and combustion on federal lands, as well as the sequestration, or absorption of carbon that naturally occurs on undisturbed public lands. Specifically, from 2004 to 2015, USGS quantified the amounts of carbon (CO₂), methane (CH₄), and nitrous oxide (N₂O) produced from coal, gas, and oil activities, as a result of public lands management.

Response WELC-5: Thank you for your comment and please see Response NPRC-6.

WELC-5
Cont.

Using data collected from 28 states (not including tribal lands) and offshore Gulf and Pacific continental shelves, USGS concludes that 1,279.0 million metric tons (MMT) CO₂, 47.6 MMT CO₂ equivalent CH₄, and 5.5 MMT CO₂ equivalent N₂O were released between 2004 and 2015.¹⁸ During the same time period, federal lands sequestered an average of 343 MMT CO₂, of which nine states accounted for 60 percent of carbon storage.¹⁹ Therefore, only approximately 15 percent of CO₂ emissions resulting from fossil fuel extraction and end-use combustion were offset by sequestration. Depending on public lands management, federal lands can either be a net sink or source of greenhouse gas emissions.

Significantly, over the 10-year period of this study, the report finds emissions from fossil fuels produced on federal lands represent, on average 23.7 percent of national emissions for carbon dioxide, 7.3 percent for methane, and 1.5 percent for nitrous oxide.²⁰ In 2014, Wyoming, offshore Gulf areas, New Mexico, Louisiana, and Colorado had the highest CO₂ emissions from fossil fuels produced on federal lands. CO₂ emissions attributed to federal lands in Wyoming are 57 percent of the total from federal lands in all states and offshore areas combined.²¹ In addition, in 2014, methane emissions were highest from federal lands in Wyoming (28 percent), New Mexico (23 percent), offshore Gulf areas (20 percent), Colorado (13 percent), and Utah (7 percent).²²

In short, DEQ must not only acknowledge this new scientific information, but it must address the policy implications that necessarily follow. Releasing additional carbon dioxide into the atmosphere intensifies

¹⁸ Matthew D. Merrill et al., Federal lands greenhouse gas emissions and sequestration in the United States—Estimates for 2005–14, (2018), 6 (attached as Exhibit 6).

¹⁹ *Id.* at 13.

²⁰ *Id.* at 6.

²¹ *Id.*

²² *Id.*

global warming, and thus the impacts of climate change.²³ DEQ must disclose the scientific conclusions about rising global temperatures and the need to keep carbon in the ground if we are to avoid the worst effects of climate disruption.

Oil Change International: Drilling Towards Disaster

In January 2019, Oil Change International in collaboration with another 17 not-for-profit organizations published a report called *Drilling Towards Disaster: Why U.S. Oil and Gas Expansion is Incompatible with Climate Limits* (“Report”).²⁴ In addition to discussing why further oil and gas expansion must be halted to avoid climate crisis, the Report discusses the **dire need of saying “no” to additional coal reserve development**. Already with all developed reserves of coal, gas, oil, and cement combined, we have surpassed the threshold of a 50 percent chance of only a 1.5°C global temperature increase.²⁵ In fact, we have surpassed this threshold by so much that we are now on the doorstep of a 66 percent chance of a 2°C increase with developed reserves alone.²⁶ Approving this proposed coal expansion at the Spring Creek Mine for strip-mining an additional 72 million tons of coal would only further lock us into an unsustainable and catastrophic climate trajectory.

To date, the U.S. is still the world’s third-largest coal producer, behind China and India.²⁷ Federally leased coal is a huge player as “[a]round 40% of all U.S. coal production comes from federally leased

WELC-6

Response WELC-6: Thank you for your comment and please see Response NPRC-6. Further, analysis of sourcing Montana’s energy portfolio is outside of the scope of the Proposed Action. Pursuant to § 75-1-220(1), MCA, alternatives do not include alternative facilities or an alternative to the proposed project itself when the project is not a state-sponsored project.

²³ USGCRP, 30.

²⁴ Kelly Trout and Lorne Stockman, *Drilling Towards Disaster: Why U.S. Oil and Gas Expansion is Incompatible with Climate Limits*, Oil Change International (January 2019) (attached as Exhibit 7).

²⁵ *Id.* at 5.

²⁶ *Id.*

²⁷ *Id.* at 21.

WELC-6
cont.

land.”²⁸ Existing U.S. mines already contain far more coal than the U.S. can extract under a coal phase-out timeline that is consistent with the Paris Agreement goals.²⁹ Based on both economic efficiency and equity, the U.S. should phase out coal much faster than the global average to meet responsibilities under the Paris goals.³⁰ To be consistent with Powering Past Coal Alliance’s (an alliance that include 28 national governments) coal mining phase out of 2030, more than 70 percent of coal reserves in existing mines need to remain in the ground.³¹

Although U.S. coal mining is currently in decline, it is not being managed in a way that is fast enough for climate or fair for workers. Again, “[i]f U.S. coal production is phased out over a timeframe consistent with equitably meeting the Paris goals, at least 70 percent of coal reserves in already-producing mines would [need] to stay in the ground.”³² Federal agencies as well as policymakers need to focus on accelerating the phase out of coal by 2030 or sooner, while ensuring a just transition for communities and workers.

Based on the overwhelming scientific consensus that we must drastically reduce GHG emissions as quickly as possible in order to avoid a climate catastrophe, DEQ should reject further mining of coal reserves at the Spring Creek Mine.

B. Climate Change in Montana

WELC-7

The scientific evidence further plainly demonstrates that the devastating impacts of the climate crisis will not spare Montana, but that Montanans will see dire impacts to their health, livelihoods, and recreation interests and that Montana’s environmental life support system will suffer

²⁸ *Id.* at 22.

²⁹ *Id.*

³⁰ *Id.*

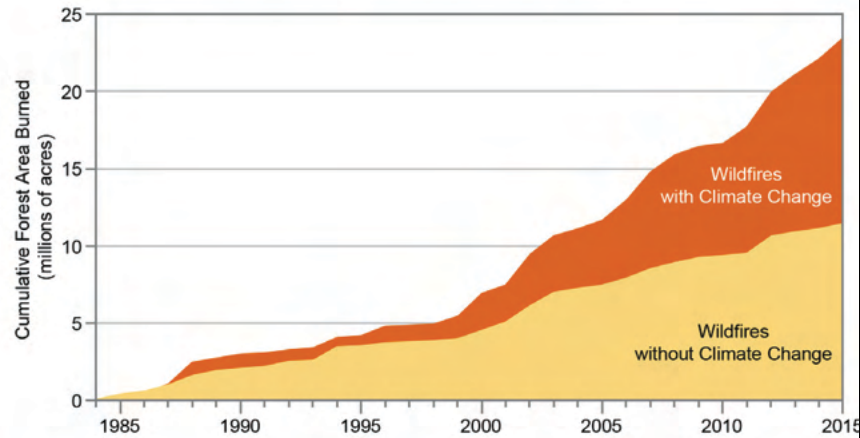
³¹ *Id.*

³² *Id.* at 7 (emphasis in original).

Response WELC-7: Thank you for your comment and please see Response NPRC-6.

WELC-7
cont.

cascading harms. The worsening impacts of climate change in Montana will include new and unprecedented extreme weather, such as intense flooding followed by extreme drought, harm to agriculture from water stress and extreme weather, and cascading harms to ecosystems.³³ The state will also suffer ever-worsening wildfires and water scarcity.³⁴ Indeed, Montanans have already seen the prelude of smoke-filled summers—climate change has already doubled the number of acres burned across the United States due to wildfire:³⁵



Increased wildfire activity is expected to cause “profound changes” to ecosystems.³⁶ Climate change is and will continue to affect Montana’s hydrology and it will exacerbate persistent drought in the states.³⁷ Reduced

³³ USGCRP, NCA4 at 136-38.

³⁴ *Id.* at 146.

³⁵ *Id.* at 151.

³⁶ USGCRP, NCA4 Vol. 1, at 231 (attached as Exhibit 4)

³⁷ Mont. Instit. on Ecosystems, Montana Climate Assessment at 140 (attached as 8)

WELC-7
cont.

snowpack and increased summer temperatures will cause reduced summer flows in streams and rivers throughout the state and worsen warm season drought throughout the state.³⁸ This could have “severe consequences for human and natural systems,” including “catastrophic impacts on some aquatic species.”³⁹ The trout-streams eulogized by Normal McClean will be dramatically reduced.⁴⁰ Climate change will also dramatically change Montana’s forests as we know them. Higher temperatures are likely to cause more of Montana’s forests to simply die and give way to grasslands.⁴¹ More trees will be killed by forest pests, such as bark beetles and more forest will burn, due to lengthened fire seasons (due to higher temperatures).⁴² Climate change is going to tax Montanans’ pocketbooks as well. Agricultural impacts could total over \$700 million in lost income and nearly 25,000 lost jobs.⁴³ These impacts will be felt most acutely in Montana’s small towns and rural areas.⁴⁴ Climate change is further expected to cost Montana hundreds of millions of dollars and over 10,000 jobs by impacting the recreation industry in the form of reduced fishing, hunting, sight-seeing, winter recreation, and visits to national parks.⁴⁵ Conservatively estimated, the impacts of increased fire, in the form of

³⁸ *Id.* at 130-33.

³⁹ *Id.* at 133.

⁴⁰ *Id.* at 134-35.

⁴¹ *Id.* at 150.

⁴² *Id.*

⁴³ Power & Power, *The Impact of Climate Change on Montana’s Agricultural Economy* at iv (2016) (attached as Exhibit 9).

⁴⁴ *Id.* at 18.

⁴⁵ Power & Power, *The Impact of Climate Change on Montana’s Outdoor Economy* at 57 (attached as Exhibit 10).

WELC-7
cont.

destroyed homes and ever-increasing fire management costs will be billion of dollars.⁴⁶

Despite the devastating impacts of climate change, DEQ refuses to broach the topic at all, in reliance on Montana Code Annotated § 75-1-201(2)(a). This provision—which mandates official ignorance of what may be the gravest threat to our state, nation, and planet—is blatantly unconstitutional. The Montana Constitution enshrines all Montanans’ fundamental constitutional right to a “clean and healthful environment.” Mont. Const. art. II, § 3. Further, the constitution provides: “The State and each person shall maintain and improve a clean and healthful environment in Montana for present and future generations.” *Id.* art. IX, § 1(1). “The legislature shall provide for the protection of the environmental life support system from degradation and provide adequate remedies to prevent unreasonable depletion and degradation of natural resources.” *Id.* art. IX, § 1(3). The arbitrary exclusion of harmful pollution from regulation implicates these rights and obligations. *MEIC v. DEQ*, 1999 MT 248, ¶ 80, 296 Mont. 207, 988 P.2d 1236. This mandates a showing that the statute is narrowly tailored to a compelling state interest. *Id.* ¶ 63. The state cannot meet this standard, as there is no compelling interest in willful ignorance.

The DEIS’s complete failure to assess the climate impacts of mining and burning 70 million tons of coal violates the fundamental right to a clean and healthful and environment, as well as the state’s duty to maintain and improve a clean and healthful environment. The legislature’s mandate of ignorance in Montana Code Annotated § 75-1-201(2)(a) plainly violates these rights, as well as the legislatures duty to provide adequate remedies to prevent degradation of the environmental life support system.

IV. Approval of extended strip mining of coal violates the human rights of all Montanans

WELC-8

On September 9, 2019, the UN High Commissioner on Human Rights, Michelle Bachelet, stated:

Climate change is a reality that now affects every region of the world. The human implications of

⁴⁶ *Id.*

Response WELC-7 (cont.): In *Montana Env’tl. Info. Ctr. v. Dep’t of Env’tl. Quality*, 1999 MT 248, 296 Mont. 207, 988 P.2d 1236, the Montana Supreme Court held that “to the extent § 75-5-317(2)(j), MCA (1995) arbitrarily excludes certain ‘activities’ from nondegradation review without regard to the nature or volume of the substances being discharged, it violates those environmental rights guaranteed by Article II, Section 3 and Article IX, Section 1 of the Montana Constitution.” *MEIC*, ¶ 80. Specifically, the holding was “limited to § 75-5-317(2)(j), MCA (1995), as applied to the facts of this case. [The Court was] not . . . asked to and [did] not hold that [§ 75-5-317(2)(j), MCA] facially implicate[d] constitutional rights.”

Response WELC-8: Thank you for your comment and please see Response NPRC-6.

WELC-8
cont.

currently projected levels of global heating are catastrophic. Storms are rising and tides could submerge entire island nations and coastal cities. Fires rage through our forests, and the ice is melting. We are burning up our future – literally.

The climate emergency is already driving a sharp increase in global hunger, which according to FAO has increased this year for the first time in a decade. WHO expects climate change to cause approximately 250,000 additional deaths per year between 2030 and 2050 – from malnutrition, malaria, diarrhoea and heat stress alone. In many nations, chaotic weather patterns and other manifestations of our environmental emergency are already reversing major development gains; exacerbating conflict, displacement and social tension; hampering economic growth; and shaping increasingly harsh inequalities.

The world has never seen a threat to human rights of this scope. This is not a situation where any country, any institution, any policy-maker can stand on the sidelines. The economies of all nations; the institutional, political, social and cultural fabric of every State; and the rights of all your people – and future generations – will be impacted.

Excellencies,

The window of opportunity for action may be closing – but there is still time to act. We live in an era of tremendous innovation. More thoughtful approaches to our use of natural and renewable resources; policies which protect and empower marginalised communities, including various social protection initiatives; and better strategies by businesses across their supply chains can be good for the environment and promote greater human dignity and rights.

This Council has recognised that “human rights obligations, standards and principles have the potential to inform and strengthen international, regional and national policymaking in

WELC-8
cont.

the area of climate change, promoting policy coherence, legitimacy and sustainable outcomes”.

We need to act on that powerful statement. We need strong national commitments for action, with an emphasis on participation by environmental human rights defenders, indigenous peoples, and civil society groups representing the communities that are most at risk – as well as support from business actors, cities and other active stakeholders.

The Secretary-General will convene a Climate Action Summit in two weeks’ time in New York to step up the pace of climate action by States and the international community.

As members of the world’s primary intergovernmental body for human rights, I ask each of your States to contribute the strongest possible action to prevent climate change, and to promote the resilience and rights of your people in dealing with environmental harm.

Effective action on climate requires bringing the uncommitted and unconvinced into a shared, just and truly international effort. Human rights can help galvanize that movement. Today, a very uneven mosaic of environmental and human rights standards stands between human beings and environmental harm – and many have no effective recourse for the harm they suffer.

I am encouraged by the increasing recognition of the right to a healthy and sustainable environment, in over 100 national and regional laws, which defines the relationship between the environment and human rights. To each of us, a healthy environment is no less important than the food we eat, the water we drink, or the freedom of thought we cherish; all people, everywhere, should be able to live in a healthy environment and hold accountable those who stand in the way of achieving it.

Mr. President,

WELC-8
cont.

This Council has a critical role to play, with both existing and innovative means to contribute to climate action. There are five key points that I believe should guide our action on climate.

Point one: Climate change undermines rights, development and peace.

The Secretary-General has noted that over the past six decades, 40% of civil wars have been linked to environmental degradation. While there are many current examples of this, I want to look to the countries of the Sahel region. As the UN Special Adviser on the Sahel has noted, this is among the regions most vulnerable to climate change, with temperature increases projected to be 1.5 times higher than the global average.⁴⁷

Continued development of coal, the dirtiest of all fossil fuels, constitutes a gross and continuing violation of the human rights of everyone in Montana, and indeed of everyone in the world. It is a flagrant violation of Montanans' right to a clean and healthful environment.

V. The DEIS must assess impacts to northern long-eared bats, which have been identified by acoustic monitoring in the area

WELC-9

Northern long-eared bats (*Myotis septentrionalis*) weigh 5 to 8 grams, with body length of 3 to 3.7 inches, wingspan of 8.9 to 10.2 inches, and with dark brown fur on the back and tawny to pale-brown fur on the ventral side. 80 Fed. Reg. 17,974, 17,975 (Apr. 2, 2016). They are distinguished by their relatively long ears. *Id.* Their range once reached “from Maine west to Montana,” *id.*, though “there has been limited survey effort throughout much of [the western portion] of the species’ range.” *Id.* at 17,983. However, since the appearance of white-nose syndrome in New York in 2006, the species has suffered “unprecedented mortality” of

⁴⁷ UN Human Rights, Office of the High Commissioner, Global Update at the 42nd session of the Human Rights Council (Sept. 9, 2019), *available at* <https://www.ohchr.org/EN/NewsEvents/Pages/DisplayNews.aspx?NewsID=24956&LangID=E> (attached as Exhibit 11).

Response WELC-9: It is unlikely northern long-eared bat (also known as northern myotis, *Myotis septentrionalis*) occurs at Spring Creek Mine. Neither the Montana Natural Heritage Program (MTNHP) nor the U.S. Fish and Wildlife Service (USFWS) include Big Horn County in the species’ range. Northern myotis is strongly associated with forested habitat, and Spring Creek Mine is separated from the Bear Lodge Mountains and Black Hills by at least 100 miles of unsuitable open sagebrush habitat. Intensive mist-net surveys have been conducted in hardwood and conifer forests in the nine eastern counties in Montana that are mapped by USFWS as range for the species (Bachen et al. 2018a). These studies have determined that the range of northern myotis in Montana comprises only about 100 square kilometers along the lower Missouri and Yellowstone River drainages (Valley, Roosevelt, Richland, and Dawon counties) (MTNHP 2019). The species has been captured only in or near riparian forest dominated by cottonwood (*Populus* spp.) and green ash (*Fraxinus pennsylvanica*) (MTNHP 2019), which does not occur at Spring Creek Mine. Northern long-eared bat has not been found in any ponderosa pine habitats in Montana, including at 21 mist net sites in Powder River County, and other southeastern counties near the Bear Lodge Mountains/Black Hills (Bachen et al. 2018a).

WELC-9
cont.

approximately 96% in the Northeast. *Id.* at 17,994-95, 17,999-800. Similar declines are occurring as the disease spreads through the Midwest and, eventually, the entire species range in the next 8-13 years. *Id.* at 18,000. White-nose syndrome has not yet spread to Montana. *Id.* at 17,994. Montana may be a refuge for northern long-eared bats.

Expert review of bat calls auto-identified as coming from northern long-eared bats indicted the likely presence of the species at the Spring Creek Mine.⁴⁸ While northern long-eared bats have calls that overlap with other bat species, their call sequences “are usually preceded and/or ended with a bat’s normal search-phase calls.”⁴⁹ Thus, review of longer call sequences can prevent misidentification, because while other myotis species can make sounds that northern long-eared bats make, they also make sounds that northern long-eared bats cannot make.⁵⁰ In addition to these acoustic identifications, “surveys conducted within the contiguous forested habitat in the Bear Lodge Mountains and Black Hills found the species to be among the most common bat captured during mist-net surveys, suggesting the species may be common locally.”⁵¹ Indeed, in the Bear Lodge Mountains adjacent to the Tongue River country, “Northern Long-eared Myotis was generally among the most commonly captured bat species, suggesting it may be relatively abundant in suitable habitat in the Black Hills and Bear Lodge Mountains.”⁵²

Given the likely presence of northern long-eared bats at the Spring Creek Mine and given the DEIS’s recognition that strip-mining activities may adversely affect bats in the area, the DEIS must assess impacts to northern long-eared bats. Further, DEQ should conduct more detailed mist-net surveys of bats in the area in order to obtain more certainty about

⁴⁸ Robbins & Moore, Report (Mar. 1, 2019) (attached as Exhibit 12)

⁴⁹ *Id.*

⁵⁰ *See id.*

⁵¹ Wyoming Game & Fish Dep’t, Wyoming Species Account, Northern Long-eared Myotis at 3 (attached as Exhibit 13).

⁵² *Id.* at 4.

Response WELC-9 (cont.):

The call sequences referenced in the commentor’s Exhibit 12 were recorded as part of a multi-agency effort led by the MTNHP to establish baseline metrics for bats across Montana, the Dakotas, and Idaho. MTNHP uses a rigorous rubric for identifying bat species from echolocation call characteristics and has established this as a repeatable method that is publically available in Bachen et al. 2018b. DEQ requested additional information from MTNHP on bat acoustic data recorded at Spring Creek Mine, including potential northern myotis call sequences. The following is a summary of MTNHP’s response (D. Bachen, personal communication): Only 26 out of 29,338 call sequences recorded at Spring Creek in 2015 and 2016 were auto-identified by SonoBat as northern myotis. All were individually reviewed using the established rubric for species identification (per Bachen et al. 2018b) and none were definitively identified as northern myotis. Given the extremely small number of calls relative to the total number of recorded sequences and since several other myotis species that have overlapping call attributes with northern myotis occur at the mine, these 26 call sequences were likely misidentification of other *Myotis* species by the software.

Mist netting studies were completed at Spring Creek Mine historically as part of baseline studies for mine permitting, and northern myotis was never captured at the mine (Bachen et al. 2018b, Bachen et al. 2019a, Bachen et al. 2019b).

WELC-9
cont.

the abundance of northern long-eared bats in the project area. Indeed, the precautionary principle enshrined both in the Endangered Species Act and the Montana Constitution requires DEQ assess potential harm at the outset, rather than approve the project only to discover harm later on. See *MEIC*, ¶ 77 (“Our constitution does not require that dead fish float on the surface of our state’s rivers and streams before its farsighted environmental protections can be invoked.”).

VI. The DEIS must provide an economic analysis that is not misleading.

The DEIS makes much of the economic benefits that the strip-mine will supposedly create. See DEIS at 77-84. This picture, however, is misleading. To present a fair picture of the economics of the proposed mine expansion, the FEIS must acknowledge (1) Cloud Peak’s repeated efforts to evade taxes and royalties; (2) the abysmal economic outlook for the mine, which, after all has led to the owner’s bankruptcy; and (3) the tremendous amount of externalities caused by the mine expansion—that is the costs of pollution from the mine that are not paid by Spring Creek, but by the public.

The National Environmental Policy Act, on which MEPA is modeled, is intended to prevent misleading analyses in which economic benefits, but not economic costs, are quantified:

WELC-10

NEPA requires agencies to balance a project’s economic benefits against its adverse environmental effects. The use of inflated economic benefits in this balancing process may result in approval of a project that otherwise would not have been approved because of its adverse environmental effects. Similarly, misleading economic assumptions can also defeat the second function of an EIS by skewing the public’s evaluation of the project.

Hughes River Watershed Conservancy v. Glickman, 81 F.3d 437, 446 (4th Cir. 1996) (internal citation omitted). In other words, an agency may not place a “thumb on the scale by inflating the benefits of the action while minimizing its impacts.” *Mont. Env’tl. Info. Ctr. v. OSM*, 274 F. Supp. 3d 1074, 1098 (D. Mont. 2017).

Response WELC-10: The information provided in the EIS was gathered from public records on what the coal mines in Montana have paid recently in taxes and royalties and does not provide unreasonable or speculative taxes or royalties that might be paid under another scenario. The information also reflects the current rates per § 15-23-703, MCA, and § 15-23-715, MCA. Evaluating impacts to mining and energy markets are beyond the scope of this EIS. MEPA and its implementing rules require that an EIS contain a description of the proposed action including its purpose and benefits [Section 75-1-201(1), MCA; ARM 17.4.617(1)]. There have been reports recently that CPE was behind on paying their \$4.4 million in county and \$10 million in federal royalties for the Spring Creek Mine. The new owners, NTEC, said they are committed to paying the taxes owed by CPE, and are currently in negotiations. NTEC says they are current on royalty and tax payments since they took ownership of Cloud Peak Energy in October 2019.

WELC-10
cont.

First, in addressing royalties, the DEIS fails to acknowledge that Cloud Peak has a history of selling its coal in non-arms-length transactions to its own affiliated entities, which artificially suppresses the purchase price. *Cloud Peak Energy Res., LLC v. State, Dep't of Revenue*, 2015 MT 1 ¶¶ 2-4, 378 Mont. 54, 340 P.3d 1258. Since royalties are assessed on the first transaction, this has the effect of shorting the public appropriate royalties. Moreover, it is also clear that Cloud Peak is exporting a large percentage of the coal—most recently 71%—from Spring Creek.⁵³ While coal exports have been an overall economic loser for Cloud Peak,⁵⁴ it appears that it is another way for the company to avoid paying its fair share for public coal.⁵⁵ This is because the company buys the public coal for bargain basement prices, here 18¢ per ton, then sells it for prices as high as \$60 per ton on the international market.⁵⁶ Cumulatively, this type of chicanery has cost the American public billions of dollars.⁵⁷ It must be recognized in the FEIS.

Further, while the DEIS recognizes that the overall benefits of the strip-mine expansion to Montana are “likely to be small,” the rosy-eyed assessment of the mine expansion’s economics fails to provide appropriate context. *Cf.* DEIS at 77-83. But the projections of the mine providing “\$60 million annually” to Montana is misleading. *Id.* at 83. The reality is that Cloud Peak has not made money off the mine and is currently in

Additionally, the commentor states that the draft EIS notes “that the overall benefits of the strip-mine expansion to Montana are ‘likely to be small’ . . .” However, the quoted language refers to social impacts in Montana. In full, the sentence containing the quoted language states, “Due to the isolated nature of the mine and the majority of workers residing in Wyoming, social impacts in Montana from four extra years of operation would likely be small”.

⁵³ Institute for Energy Economics and Financial Analysis, NTEC Move to Buy Cloud Peak Is an Increasingly Questionable Wager, at 5 (Sept. 2019 (attached as Exhibit 14).

⁵⁴ *Id.*; Cloud Peak, 10-Q (showing nearly \$10 per ton loss on export sales) (attached as Exhibit 15).

⁵⁵ Williams-Derry, Unfair Market Value (2014) (attached as Exhibit 16).

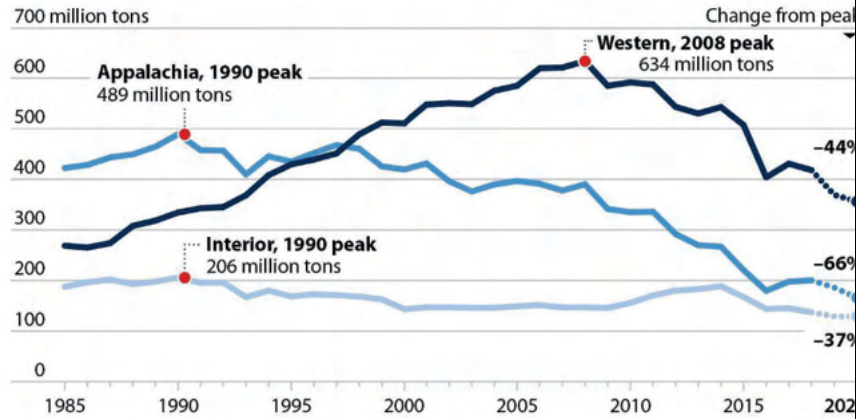
⁵⁶ *Id.*

⁵⁷ Institute for Energy Economics and Financial Analysis, The Great Giveaway (attached as Exhibit 17).

bankruptcy.⁵⁸ Currently, Cloud Peak has a significant amount of tax liabilities (approximately \$94 million) and reclamation costs that it is attempting to shift to a new buyer.⁵⁹ Further, the post-bankruptcy future of the Spring Creek strip-mine is facing significant headwinds. First, the Powder River Basin is in “structural decline” as domestic coal markets dry up, due to reduced energy needs and cheaper, cleaner energy alternatives.⁶⁰

U.S. Regional Coal Production, 1985-2018, With Estimates to 2020

Output has fallen sharply in all three major coal mining regions. From their peak years to 2020, production is expected to fall by 44 percent in the West, 37 percent in the Interior, and 66 percent in Appalachia.



Source: Energy Information Administration; 2019-2020 estimates from August 2019 Short-Term Energy Outlook

⁵⁸ Institute for Energy Economics and Financial Analysis, Proposed Navajo Acquisition of Bankrupt U.S. Coal Company Is an Ill-Timed Gamble (attached as Exhibit 18).

⁵⁹ *Id.* at 4.

⁶⁰ Institute for Energy Economics and Financial Analysis, NTEC Move to Buy Cloud Peak Is an Increasingly Questionable Wager, *supra* at n. 53 (attached as Exhibit 14); Mont. EQC, Sen. Joint Resolution 5: Coal in Montana (Jan. 17, 2018) (noting that “closure of coal-fired electric plants around the U.S. will affect the industry and the revenue it generates”) (attached as Exhibit 19).

WELC-10
cont.

WELC-10
cont.

Second, Spring Creek's customers are closing: the Centralia plant, which takes 16.8% of the mine's coal, is closing one unit next year and the second in 2025.⁶¹ One of the mine's other two customers, the Clay Boswell plant in Minnesota recently closed two of four units.⁶² And Spring Creek's effort to recoup its domestic losses by shipping most of its coal overseas has not proven any more lucrative given the volatility of Asian coal markets and intense competition from coal from Indonesia and Australia.⁶³ Consequently, Cloud Peak's exports have in fact lost money 15 of the last 20 quarters.⁶⁴ DEQ may not close its eyes to the reality of the collapse of the coal industry and the disappearing demand for the high-sodium coal⁶⁵ from the Spring Creek Mine.

SCM currently ships coal to multiple power-generating stations and will continue to identify other customers for its coal. Most power-generating stations purchase and receive coal from several different coal mines. The closing units may reflect a long term need for coal in the US, but do not indicate that Spring Creek will not be able to sell the coal it mines through the end of the mine life (four additional years).

For 2018, Spring Creek Coal Mine reported to the Energy Information Administration shipments to the following plants

- Presque Isle, MI
- Clay Boswell, MN
- Hoot Lake, MN
- Transalta Centrailia Generation, WA
- Coronado, AZ
- DTE VRSC Shared Storage

It is the role of corporate management and stockholders to determine whether continuing to mine is profitable. The EIS analyzes the MEPA issues related to the permit modification requested.

⁶¹ *Id.*

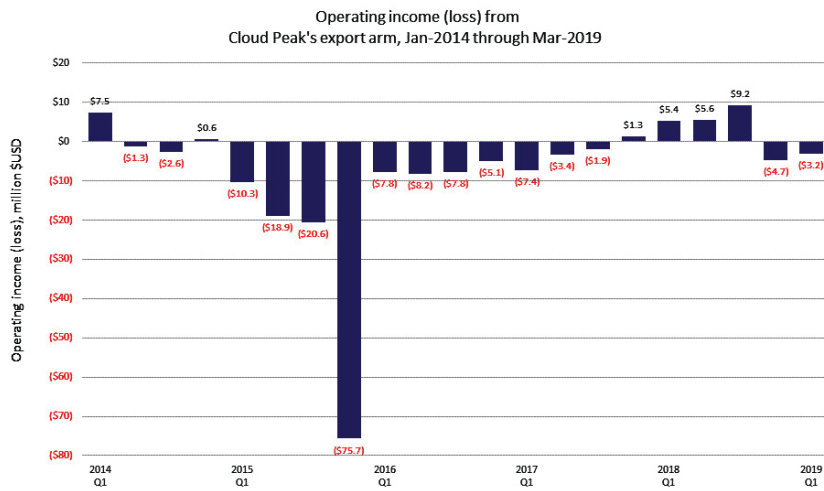
⁶² *Id.*

⁶³ *Id.* at 5.

⁶⁴ MEIC, Down to Earth at 5 (Sept. 2019) (graph by Williams-Derry, Sightline Instit. based on Cloud Peak's SEC filings) (attached as Exhibit 20).

⁶⁵ Unfair Market Value, *supra* n. 55 (attached as Exhibit 16).

WELC-10
cont.



Given, the collapsing economics of coal in general and Spring Creek in particular, the only action DEQ should be considering at the strip-mine is a reevaluation and significant increase in the mine's bond because Cloud Peak clearly has no money to pay for reclamation and it seems unlikely, given the bleak financial outlook, that Cloud Peak's successor, if any, at the strip-mine will be able to pay for reclamation—through phase IV—either.

The FEIS should also acknowledge that Cloud Peak has used bankruptcy (after funneling bonuses to corporate executives) to end health care benefits for retirees.⁶⁶ One retiree who lost her medical benefits remarked:

I did my part. I worked safely for twenty years. And, four months after I retire, this is what's done. It's maddening.

....

⁶⁶ Cooper McKim, *A Potential Company Sale, Exec Bonuses, Cut Benefits: What's Going on with Cloud Peak*, Wyoming Public Radio (Nov. 16, 2018) (attached as Exhibit 21).

Pursuant to § 82-4-223, MCA, DEQ may not issue a permit under SMCRA until the operator has filed a performance bond with DEQ made payable to the state of Montana in an amount to be determined by DEQ. The bond amount is based upon the cost to the state if it were to reclaim the permitted area as described in its associated reclamation plan. ARM 17.24.1102. DEQ will not issue an approval of the TR1 Project until a satisfactory bond is secured.

It is beyond DEQ's jurisdiction to regulate the company's decision on benefits for employees and retirees. However, the EIS analyzes the social and economic impacts of the Project pursuant to ARM 17.4.603(12) in Sections 3.7.4 and 3.7.5 in the EIS.

[I]t seems so unjust. . . . The people that are in the trenches doing the work get the shaft and the people at the top of the food chain are making out like bandits.⁶⁷

Worse still, the strip-mine’s failing economics don’t even include the externalized costs of the coal—that is, the costs that the public has to pay for the pollution from burning coal. These are costs for the impacts of air pollution on public health, the impacts of heavy metal pollution on maternal and infant health, and the ever escalating costs of climate change. The externalized cost of an additional ton of carbon dioxide, based on the extremely conservative estimates of the Interagency Working Group on the Social Cost of Carbon, ranges from low estimates of \$12/metric ton of carbon dioxide to high estimates of \$120/metric ton.⁶⁸ The harm to the public from other air pollutants from coal are also substantial, approximately \$60-70/ton.⁶⁹ These values dramatically exceed the total benefits identified in the DEIS (\$60/year) from the mine expansion. Thus, the mine expansion is almost certainly an economic loser. DEQ must disclose this to the public, in order to avoid a misleading analysis.

In sum, in order for the economic analysis in the DEIS to have any semblance to reality, it needs to acknowledge that (1) the public is not getting a fair return for the coal, (2) that the strip-mine has a bleak future casting significant doubt on the likelihood of successful reclamation, and (3) that the net impact of the mine expansion on the public is extremely negative. This last point is not surprising, given that the impacts of the mine expansion will contribute to one of the greatest violations of human rights in the history of civilization.

The public is sick of paying for coal industry executives and shareholders to profit by sacrificing the global commons—as demonstrated by the ever increasing public protests against government inaction on

⁶⁷ *Id.*

⁶⁸ Power Consulting, Analysis of 2018 Revised Environmental Assessment for Bull Mountains Mine (2018) (attached as Exhibit 22).

⁶⁹ *Id.* at 22.

Spring Creek Mine does not ship its coal to power-generating stations in Montana, therefore, the impacts described in the comment are beyond the scope of the MEPA analysis. Under MEPA, DEQ’s analysis may not include a review of actual or potential impacts beyond Montana’s borders. It may not include actual or potential impacts that are regional, national, or global in nature such as impacts that may result from climate change. Section 75-1-201(2)(a), MCA.

WELC-10
cont.

WELC-10 { climate. DEQ needs to take the first step here by acknowledging the true impacts of coal.

VII. The DEIS must disclose whether the coal company is current in all of its local tax obligations

WELC-11 { The DEIS makes much of the supposed tax revenue that the mine will supposedly generate. *E.g.*, DEIS at 83. However, as noted above it is far from clear that the owners of the Spring Creek mine will pay their taxes. In fact, it is not clear that the mine is even current on its taxes, given its current bankruptcy, declining revenues, and dismal future prospects. Consequently, the FEIS must disclose whether the mine is current on all its local, state, and federal taxes. Further, in its ongoing effort to subsidize the dying coal industry, the Montana Legislature recently granted authority to abate coal mine taxes for new mine expansions, like TR1. 2019 Mont. Laws ch. 331 (SB 328); Mont. Code Ann. §§ 15-23-703, 715. The FEIS must further disclose whether the mine expansion has been or will be subject to this new tax abatement, and must further disclose how this tax abatement would affect any tax revenues from the expansion.

VIII. It is unrealistic that all reclamation will be completed in 12 years after the end of mining—given that hardly any reclamation has occurred in 40 years.

WELC-12 { The DEIS makes the extremely optimistic and, indeed wholly unrealistic, statement that all reclamation will be complete “in about 12 years.” DEIS at 82. The DEIS further states that “[o]ver 3,570 acres have been or will be reclaimed to wildlife habitat.” *Id.* at 126. Elsewhere, however, the DEIS seems to recognize that reclamation of the sagebrush steppe ecosystem that the strip-mine will destroy is dubious at best—and certainly will not be accomplished within 12 years. For example, the DEIS recognizes that the “longest term impact would be to species dependent on sagebrush and ponderosa pine, because trees and sagebrush shrubs take longer to establish in reclamation compared to grasslands.” *Id.* at 126-27. The DEIS further recognizes that “[r]eductions in sagebrush density are expected to be long-term and would result in decreased abundance of birds that require sagebrush habitat.” *Id.* at 131. The strip-mine expansion would “result in a reduction in sage grouse habitat function.” *Id.* at 135. Ultimately, the DEIS seems to recognize that this land will not likely support the use of the land by sage grouse (or other sagebrush obligates) following strip mining:

Response WELC-11: The information provided in the EIS was gathered from public records on what the coal mines in Montana have paid recently in taxes, not just what is owed. The information also reflects the current rates per §§ 15-23-703 and 715, MCA. There is no record that Spring Creek Coal as ever requested a tax abatement and if abatement was requested, the county and school board would have to agree to the abatement before any is granted, per § 15-23-715 MCA.

Response WELC-12: The SCM has successfully reclaimed areas with sagebrush and other shrubs. See Response NPRC-2.

Impacts to sage grouse habitat and possibly to individuals would continue until the landscape and habitat [are] reclaimed. The sage grouse population may experience accelerated long-term declines or be eliminated from within the local area. When the Project Area has been fully reclaimed to be suitable sage grouse habitat, it may be possible for sage grouse to recolonize the habitat; however, it is unlikely due to the strong site fidelity that sage grouse exhibit.

Id. at 136.

In fact, the DEIS contains no evidence that reclamation of sagebrush steppe habitat is possible, much less likely. Indeed, expert analysis indicates that such reclamation is highly unlikely:

The original vegetation of the overall area useful to sage-grouse was the Wyoming big sagebrush/bluebunch wheatgrass community which grows on gentle to moderate slopes and ridges. The second most common plant community was the Wyoming big sagebrush/western wheatgrass community (DEIS: pg. 96). It is highly unlikely these natural associations can be replaced (recreated) in less than 30 years and likely not in our life times based on what I have observed in other similarly disturbed areas mined for coal in Jackson and Moffat counties in Colorado.⁷⁰

Given the conditions at the Spring Creek strip-mine—dry and windy—at least 30 years will be required just to begin to reestablish appropriate soil conditions for reclamation.⁷¹ (BLM has stated that restoration of trees and shrubs would take between 20 and 100 years.⁷²) This barrier will be

⁷⁰ Statement of Clait Braun, Ph.D., (Sept. 2019) (attached as Exhibit 23).

⁷¹ *Id.*

⁷² BLM, EA for Coal Lease Modification at 4-16 (2010) (attached as Exhibit 24).

WELC-12
cont.

Response WELC-12 (cont.)

Impacts to sage grouse from the Proposed Action were analyzed and described in detail in EIS Sections 3.12.3.3 and Section 3.12.4. See Response NTEC-4.

The EIS acknowledges in Sections 3.10.4 and 4.8 that reclamation of the TR1 Project Area with successful establishment of sagebrush and other shrub species would be long-term. SCM reclamation plans and past vegetation reclamation success demonstrate the vegetation communities can be reestablished.

SCM cannot receive Phase III bond release until at least 10 growing seasons after the last reclamation treatment (as defined in ARM 17.24.725). Phase III bond requires a stable and established vegetative community that is consistent with the approved postmining land use which would primarily be for wildlife use.

WELC-12
cont.

exacerbated by the coal company’s ongoing inability to control weeds.⁷³ There is also no discussion in the DEIS about how the mine’s use of potentially carcinogenic⁷⁴ and harmful herbicides—Roundup and Dicamba—will affect reclamation (or cause other problems, such as contamination from pesticide drift and impacts to water and aquatic life⁷⁵). See DEIS at 97. In fact, the DEIS contains no information about (1) whether the coal company has reclaimed any sagebrush habitat in the 40 years that strip-mining has occurred at Spring Creek, or (2) how the coal company proposes reclaiming sagebrush habitat in 12 years.

Spring Creek has previously acknowledged that it has no control over what plants return after reseeding:

Because of the inherent difficulties in establishing shrubs on reclamation and because of the relatively high woody plant density standard for the wildlife Habitat land use, Spring Creek is essentially forced into planting all reclamation with shrubs. As a result of this high variability of what is planted versus what will grow, we generally have no idea what lands will end up being Grazing Lands vs. Wildlife Habitat until we see the actual shrub density numbers quantified (which can take many years). When we apply for Phase III bond release, we will need to identify what the land use will be for each field or groups of fields, at which time (assuming successful bond release) we may choose to implement grazing on Grazing Lands. So far however, we do not have any Phase III bond release and grazing will not occur until we do (grazing has potential to impact shrub numbers, so until the bond is released we will not graze). Another significant obstacle to grazing in the future will be the

Response WELC-12 (cont.)

Section 3.10.4 in the EIS briefly describes the SCM weed management plan for management of annual and noxious weeds and grasses (primarily thistle, cheatgrass, and kochia) until reclamation has established. SCM manages weed outbreaks per ARM 17.24.308(f) and ARM 17.24.718 via their county approved weed management plan and through disking and reseeding where applicable until native perennial grasses, shrubs, or woody species become established. Herbicides used include Roundup®, Plateau®, and Dicamba® + 2,4-D (CPE, 2017).

See Response NRPC-2. Also, SCM has demonstrated reclamation success with the approval of bond release application SL8 in 2015. This application included 407 acres for Phase III as wildlife habitat. These acres met the standards applicable for wildlife habitat, which were established based on baseline vegetation data in the mine and surrounding areas. Sagebrush density within this reclamation area had some stands exceeding 20,000 shrubs per acre.

⁷³ Braun Statement, *supra* n. 70 (attached as Exhibit 23).

⁷⁴ Zhang et al., Exposure of Glyphosate-Based Herbicides and Risk of Non-Hodgkin Lymphoma (2019) (attached as Exhibit 25).

⁷⁵ See generally Wikipedia, Dicamba, <https://en.wikipedia.org/wiki/Dicamba>.

WELC-12
cont.

physical location of Phase III-released lands and their proximity to active mine operations.⁷⁶

In the approximately 40 years that mining has occurred at Spring Creek, it appears that only approximately 400 acres have received Phase III bond release.⁷⁷ It is unclear, but very likely, that these acres did not include any sagebrush habitat—given that Cloud Peak admits that it has had no success in reclaiming sagebrush. BLM has acknowledged that reducing sagebrush habitat in the mine area will “reduce the carrying capacity of the reclaimed lands for pronghorn and sage grouse” until sagebrush is reestablished.⁷⁸ Given that there is no indication that sagebrush habitat can be reclaimed and ample evidence that it cannot be, DEQ must address the fact that the coal company has not affirmatively demonstrated that reclamation—i.e., returning the land to a condition that supports premining uses—can be accomplished. ARM 17.24.405(6)(a) (requiring demonstration that reclamation can be accomplished); Mont. Code Ann. § 82-4-203(43) (definition of reclamation).

The DEIS must further assess the cumulative effect of climate change on reclamation. Increasingly erratic and extreme weather, as well as more intense drought and flooding from climate change⁷⁹ will dramatically impact the ability of the already dubious reclamation efforts to be successful over the 30-100 year timeframe that such reclamation operations will have to occur.

The FEIS must also explain how the coal company is going to replace water resources that will be destroyed by the strip-mine. The DEIS recognizes that the “coal and alluvial aquifers are generally the most important sources of water in the area.” DEIS at 101. The DEIS fails however to explain where the coal company will find water that can replace the uses of water from A-D coal aquifer. Are there other aquifers or surface

⁷⁶ DEQ, Use of Reclaimed Mine Lands (2012) (attached as Exhibit 26).

⁷⁷ OSM, EA for Spring Creek Mine at 2-6 (2016) (attached as Exhibit 27).

⁷⁸ BLM, EA, *supra* n. 72 at 4-17 (attached as Exhibit 24).

⁷⁹ See Montana Climate Assessment, *supra* at n. 37 (attached as Exhibit 8).

Response WELC-12 (cont.)

As stated in Section 3.10.4 of the EIS, the reason there has been no Phase IV bond release at the SCM is because the mine continues to mine coal farther from the Plant and railroad loadout and needs roads through previously mined and reclaimed areas. See Response NPRC-2.

Under MEPA, DEQ’s analysis may not include a review of actual or potential impacts beyond Montana’s borders. It may not include actual or potential impacts that are regional, national, or global in nature such as impacts that may result from climate change. Section 75-1-201(2)(a), MCA. Additional text was added to Section 3.2 to explain why a detailed analysis of climate change was not included in this EIS.

Although DEQ does not consider the impacts of climate change pursuant to § 75-1-201(2)(a), MCA, MSUMRA does require analysis of statistically probable climatic and hydrologic conditions on structures and reclamation during and after mining. For instance, ARM 17.24.634 requires that drainage basins be designed to safely pass a 6-hour precipitation event with a 100-year recurrence interval and to have drainage basins provide for the long-term relative stability of the landscape. The rule defines relative to refer to a condition comparable to an unmined landscape with similar climate, topography, vegetation, and land use. ARM 17.24.639 requires sedimentation ponds to have capacity to retain a 10-year, 24-hour event. Depending on the design and permanence of the pond, it may also be required to safely pass a 25-year, 24-hour or 100-year, 6-hour event.

The MSUMRA requirements on storm size and duration are based on the National Oceanographic and Atmospheric Administration’s (NOAA) Precipitation-Frequency Atlas, the industry standard in the United States for storm modeling. The latest Precipitation-Frequency Atlas for Montana, Atlas 2, was updated in 1973. DEQ requires the most recent atlas be used for modeling and design by the permittee.

Please see Response WELC-14 below.

Regarding the availability of replacement water, the MSUMRA permitting process requires DEQ to find that the application affirmatively demonstrates that replacement water sources could be developed [ARM 17.24.304(1)(f)(iii)].

WELC-12
cont.

water that can replace this water? Is it legally and physically available? What will happen if water has to be pumped to replace the destroyed aquifer? Will it impact the water rights of others?

IX. Spring Creek is currently in significant non-compliance with the CWA for failing to submit required monitoring reports

WELC-13

The FEIS must further address Cloud Peak’s non-compliance with applicable environmental laws. In particular, Cloud Peak has received three violation notices and warning letters since 2018 for violating provisions of the Clean Water Act.⁸⁰ Most recently, the coal company was found in significant non-compliance for apparently failing to report its discharge monitoring reports under the CWA.⁸¹ There is no indication that this violation has been resolved. DEQ may not issue a permit to a company that is currently violating an applicable environmental law or that has demonstrated a willful pattern of violating such laws. Mont. Code Ann. § 82-4-227(11)-(12). Furthermore, until a new mine owner has been identified, DEQ will be unable to affirmatively conclude that the mine owner does not have a history of non-compliance sufficient to permit the mine under Mont. Code Ann. § 82-4-227(11)-(12).

X. The DEIS’s assessment of impacts to water resources must be expanded and clarified.

WELC-14

First, the DEIS’s assessment of impacts to water resources is not consistent. It states impacts to surface and groundwater are “not irreversible.” DEIS at 109. But in the following sentence it states that “[w]ater quality in the mined-out area would be permanently changed where spoil replaces the A-D coal and overburden.” If water quality is permanently changed, it is not reversible. Please clarify.

Second, the DEIS is not clear about how excessively saline water in the spoils aquifer will impact water quality in unmined portions of the A-D coal seam between Spring Creek and West Decker. The DEIS seems to indicate that ground water quality in the spoils will change from Class I/II

⁸⁰ EPA, ECHO Report (attached as Exhibit 28).

⁸¹ *Id.*

Response WELC-13: Section 82-4-227, MCA, is one provision of the Montana Strip and Underground Mine Reclamation Act, and must be complied with when issuing a permit. However, § 82-4-227, MCA, is not a part of this MEPA analysis.

Response WELC-14: Section 3.11.4 of the EIS has been revised. The water quality in the A-D aquifer would be unavoidably reduced after mining until it is reestablished many years from now. Impacts to ground water (including the interruption of the aquifer and increases in TDS) are reversible (or not irreversible) in the sense that over time an aquifer will reestablish itself in place of the removed A-D aquifer. Furthermore, TDS would decrease with time due to flushing, adsorption/desorption, precipitation/dissolution, and other complex geochemical processes. Once the A-D aquifer is removed and replaced by a spoils aquifer, the reestablishment of the aquifer would occur, and water quality would improve over time as the complex geochemical processes likely reduce TDS in spoils aquifers. It is likely that equilibrium water quality of the spoil aquifer would likely take a period of many years to establish (depending on local hydrologic properties), and would be different from the water quality of the A-D aquifer due to different compositions.

WELC-14
cont.

to Class III, as TDS levels increase from median levels of 1,840 mg/L to 4,540 mg/L as the coal is replaced with spoils. DEIS at 101. However, without explanation or support, the DEIS asserts that these increased TDS levels will attenuate as the polluted spoils waters migrates from the mine. *Id.* at 109 (“Elevated TDS concentrations may be attenuated through natural geochemical processes as ground water migrates from the spoil downgradient to undisturbed coal and clinker.”) In its prior analysis of spoils water, BLM hypothesized that the movement of spoils water would lead to a decrease in TDS, but an increase in SAR.⁸² The FEIS must clarify this point. The DEIS goes on to state, “Based on an assessment of existing uses and current Montana ground water classification (based on EC), the premine beneficial uses of this water are expected to be feasible at the same viability.” DEIS at 109. This statement is unclear. Please include language from the cited source (SCC and WWC Engineering 2017).

Further, the DEIS must address the cumulative downstream impacts of discharges of increased salinity from the mine into the Tongue River Reservoir. *See* DEIS at 101 (noting that “the spoils will deliver higher TDS loads to downstream receiving waterways (namely Tongue River Reservoir)”). While the Tongue River Reservoir is not suffering from excessive salinity, the downstream segment of the Tongue River, from the 12 mile dam to the mouth of the river is impaired due to excessive salinity, which impacts users’ ability to irrigate with the water.⁸³ Past studies have found that cumulative increases in salinity in the Tongue River from multiple strip-mines along the river would result in “significant deterioration in surface water quality on the long term,” which will “last for centuries.”⁸⁴ Currently, there are three large active coal mines along the

⁸² BLM, *EA supra* n. 72 at 4-10 (attached as Exhibit 24).

⁸³ DEQ, Water Quality Standards Attainment Record, Tongue River Twelve Mile Dam to mouth (2018) (attached as Exhibit 29).

⁸⁴ Woessner, The Impacts of Coal Strip Mining on the Hydrogeologic System of the Northern Great Plains: Case Study of Potential Impacts on the Northern Cheyenne Reservation, 43 *J. of Hydrology* 445 (1979) (attached as Exhibit 30). This is consistent with the analysis the Montana Bureau of Mines and Geology, which identified increased salinity levels in the Tongue River, particularly during low flows. Van Voast & Thompson, Estimates of Post-Mining Water Quality for the Upper Tongue River in

Response WELC-14 (cont.)

The EIS indicates that TDS levels in spoil aquifers would increase once the A-D coal is replaced by spoils and a spoils aquifer develops. However, as the ground water moves downgradient into undisturbed coal and clinker, geochemical processes would help mitigate the increased TDS. Figure 4.2.3.4 in SCC and WWC Engineering (2017) was the source of this information and shows that water in previously-mined portions of SCM moving downgradient has not resulted in changes to a lesser water quality class in ground water in the downgradient monitoring wells.

The surface water and ground water analysis areas for the EIS (see Figure 3.3.2 in the EIS) do not include any portion of the Tongue River below Tongue River Dam. Consequently, impacts to surface water in the Tongue River below Tongue River Dam and Reservoir were not evaluated in the EIS. These analysis areas were selected to be consistent with the surface water and ground water analysis areas used to evaluate cumulative hydrologic impacts. Further, DEQ has received no application materials and is unaware of any actual mine plans involving the possible Big Metal Mine. Without a mine plan, there is no way to analyze cumulative impacts from a theoretical operation. “Cumulative impacts’ means the collective impacts on the human environment within the borders of Montana of the proposed action when considered in conjunction with *other past, present, and future actions* related to the proposed action by location or generic type” [Section 75-1-220(4), MCA (emphasis added)]. ARM 17.4.603(7) further clarifies that “Related future actions must also be considered when these actions are under concurrent consideration by any state agency through preimpact statement studies, separate impact statement evaluation, or permit processing procedures.” The Big Metal Mine is not a past, present, or future action as no application materials or mine plan have been submitted for this possible mine. Further discussion and detail are provided in Section 4.1.3 of the EIS.

WELC-14
cont.

Tongue River—East Decker, West Decker, and Spring Creek. There are also an approved mine at Youngs Creek, the proposed Big Metal Mine closely adjacent, and the historical Big Horn Mine upstream in Wyoming. In addition, there are ongoing impacts from coal-bed methane development along the Tongue River. In 1982 the Montana Department of State Lands conducted a mass balance analysis and predicted that additional salinity from these mines would cause a small but notable increase in salinity in the Tongue River.⁸⁵ The FEIS must quantitatively assess the cumulative impact of these operations on the downstream portions of the Tongue River, which is already suffering from the “significant problem” of excessive salinity.⁸⁶ The continued but ultimately short-lived boom of coal mining at Spring Creek (and Decker) may result in a bust that limits the ability of farmers in the Tongue River valley to irrigate with river water for “centuries.” These impacts will be especially acute during summer low flows.⁸⁷

The FEIS must also assess the cumulative impact of nitrogen from the strip-mines on the Tongue River Reservoir. Residual nitrogen in spoils from blasting will also migrate to the Tongue River Reservoir once the spoils aquifer refills. Median total nitrogen levels in the Tongue River Reservoir are high; when DEQ assessed the reservoir it found that such levels “were higher than all the similar lakes and reservoirs.”⁸⁸ The

Montana and Wyoming (1982). Summer low flows will be further exacerbated by the impacts of climate change. Montana Climate Assessment, *supra*. Also, the estimates from Van Voast & Thompson do not capture the cumulative salinity impacts from both coal mining *and* coal bed methane development.

⁸⁵ Mont. Dep’t of State Lands, Decker Coal Co., North Extension 1982, Draft Supplement to Final EIS, tbl. 6 (1982) (attached as Exhibit 31).

⁸⁶ DEQ, Water Quality Standards Attainment Record, *supra* at n. 83 (attached as Exhibit 29).

⁸⁷ Van Voast & Thompson, *supra*.

⁸⁸ DEQ, Water Quality Standards Attainment Record, Tongue River Reservoir at 16 (2018) (attached as Exhibit 29).

Response WELC-14 (cont.)

High nitrogen (>10 mg/l) has been observed in wells on SCM (SCC and WWC, 2017) but these high levels occurred generally before mining impacted the affected wells. Therefore, the nitrogen occurrences in ground water were attributed to agricultural practices and not mining. Evaluating impacts from agricultural practices is outside the scope of the EIS.

The Tongue River Reservoir is listed as impaired for not fully supporting aquatic life due to Chlorophyll-a, reduced (not excessive) dissolved oxygen, and sediment. Sources are given as crop production (irrigated) and municipal point source discharges (DEQ, 2018d). Nothing in the Tongue River watershed is listed as impaired for nitrogen.

WELC-14
cont.

reservoir is also impaired due to excessive dissolved oxygen,⁸⁹ a condition which will be worsened if the mines cumulatively add more nitrogen to the water body.

Additionally, the West Decker Mine is flooded and may already be contributing additional pollution to the reservoir, which the FEIS should address.

XI. Coal Trains



The DEIS must further address the impacts of coal trains throughout western Montana. The fact that the mine expansion may not increase the total number of coal trains leaving the mine is immaterial. These impacts have never been analyzed in any prior EIS and they may be significant. Further, while the number of trains from the mine may not increase, it is clear that the strip-mine has recently begun shipping many more trains

⁸⁹ *Id.*

Response WELC-14 (cont.)

Past, present, and reasonably foreseeable impacts from the West Decker Mine were addressed as part of the assessment of the Decker Mines and their impacts on the Tongue River Reservoir in Section 4.9.1 of the EIS.

Response WELC-15:

Only impacts for the proposed action can be analyzed in this EIS. The tons of coal mined from the SCM is summarized below and indicates the mine has not *recently begun shipping many more trains* (italicized text quoted from the comment).

Million Tons of Coal Mined at Spring Creek Mine	Year	Source
Projected 9.2	2019	Star Tribune 2019
Approximately 14	2018	Star Tribune 2019
12.6	2017	2017 Annual Report
10.3	2016	2016 Annual Report
17	2015	2015 Annual Report
17.4	2014	2014 Annual Report

WELC-15
cont.

westward through Montana to an export terminal in Canada.⁹⁰ Impacts from these trains will adversely affect numerous resources including:

- Diesel particulate matter will worsen air quality in numerous communities that already suffer from air quality that exceeds national ambient air quality standards, including Billings, Laurel, Helena, Missoula, Libby, Sanders County, Lincoln County, Flathead County;⁹¹
- Diesel particulate matter is carcinogenic and cumulative locomotive emissions may cause significant increases in cancer risk in communities impacted by coal trains⁹²;
- Coal train derailments, as have occurred with regularity in Montana and which occur regularly as part of train operations⁹³;
- Without possessing a permit, coal trains also discharge coal dust and chunks into numerous rivers in Montana, many of which are already

⁹⁰ Institute for Energy Economics and Financial Analysis, NTEC Move to Buy Cloud Peak Is an Increasingly Questionable Wager, *supra* at n. 53 (attached as Exhibit 14).

⁹¹ See Jaffe, Diesel Particulate Matter Emissions Factors and Air Quality Implications, 5 Atmospheric Pollution Research 344 (2014) (attached as Exhibit 33).

⁹² Wash. Dep’t of Ecology, FEIS Millenium Bulk Terminals (2017) (attached as Exhibit 34).

⁹³ Matt Hudson, Coal from Columbus train derailment will be sent to landfill, Billings Gazette (Sept. 27, 2018) (attached as Exhibit 35); Kim Briggeman, Coal cleanup underway on Clark Fork weeks after train wreck, Missoulian (Sept. 24, 2017) (attached as Exhibit 36); Martin Kidson, 3 Coal cars derail in Missoula railyard, Missoulian (Dec. 16, 2013) (attached as Exhibit 37); Benjamin Storrow, 29 cars on coal train derail east of Terry, Billings Gazette (Feb. 25, 2014) (attached as Exhibit 38); KQH, 50-60 empty coal cars derail near Kootenai, Idaho (Mar. 17, 2017) (attached as Exhibit 39); Wash. Dep’t of Ecology, *supra* at n. 91 (attached as Exhibit 34).

Response to First and Second Bullets: From the EIS, Section 3.9.4.2:

It is assumed that BNSF would adjust other coal and non-coal train traffic up or down to account for varying frequency of coal trains from SCM to maximize track use (BNSF 2018). Therefore, the number and frequency for all train traffic would not change (only the duration) and the waiting times for trains would also stay the same...

Thus, for the proposed action alternative, there would be no additional adverse impacts from train diesel emissions.

Response to Third Bullet: From the EIS, Section 3.9.4.2:

The potential for train derailments and truck accidents would continue for about 4 additional years. Even with fluctuations in the coal market, the railroad would maximize train traffic (BNSF 2018) and the overall number of trains would remain constant and independent of the number of coal trains.

The frequency of trains traveling through communities would not change under the proposed action and thus, the noise and impact to crossings would remain the same as the no action alternative. In addition, the impact from train diesel engines under the proposed action would also remain the same as the no action alternative. Finally, BNSF continues to invest in maintenance projects in Montana to “operate safely and efficiently in the state” (BNSF 2019_02_26 and 2018_02_13). This should reduce train derailments and particulate generation during train track use.

Response to Fourth Bullet: Research completed by D.A. Jaffe et al. (2014) did not include data on the types of dust treatment methods currently used by various coal trains traveling through the analysis area.

WELC-15
cont.

- impaired for excessive sediment or provide habitat for endangered species or both⁹⁴;
- Coal trains from the strip-mine alone and cumulatively threaten to strike and kill wildlife, including threatened and endangered species, and impair habitat.⁹⁵

XII. Conclusion

In sum, it is not a close call. Expanding the Spring Creek Mine will cause tremendous harm to people and the environment in Montana. The benefits of allowing a bankrupt coal company to continue to pedal its toxic product for a few more years are not worth the costs it will impose on the public, as a fair economic analysis abundantly demonstrates. The Conservation Groups urge DEQ to fully disclose the multifarious harmful impacts of this strip-mine expansion and deny this mine expansion. It is simply not consistent with the fundamental constitutional and human rights of the people of Montana.

If you have any questions, please don't hesitate to reach out.

/s/ Shiloh Hernandez

Shiloh Hernandez
Western Environmental Law Center
103 Reeder's Alley
Helena, MT 59601
406.204.4861
hernandez@westernlaw.org

On behalf of Montana Environmental Information Center, Sierra Club, WildEarth Guardians, and the Center for Biological Diversity

⁹⁴ Surface Transp. Bd., Draft EIS for the Tongue River Railroad, app. G (2015) (attached as Exhibit 40).

⁹⁵ Wash. Dep't of Ecology, *supra* at n. 91 (attached as Exhibit 34).

From the EIS, Section 3.9.3.3:

Coal dust suppression follows a three-step process (CPE, 2018b) to maintain coal shipment integrity for coal shipped from SCM. First, a dust suppressant coats coal surfaces before loading. Coal is then loaded in an aerodynamic pattern. Finally, a neutral polymer, called a topper, is applied after loading to create a crust on the top surface of the coal. The spray is not hazardous or toxic and has been effective at keeping dust from leaving the coal cars during transit.

BNSF requires under the current Coal Loading Rule (October 1, 2011) that

...The Coal Loading Rule also has a "safe harbor" provision stating that a shipper will be deemed to be in compliance with BNSF's Coal Loading Rule if it loads cars in compliance with BNSF's published Load Profile Template, and either (i) applies an approved in-transit dust suppressant agent to the loaded cars in the specified manner, or (ii) uses another method of coal dust suppression that, together with profiling, reduces coal dust losses in transit by the required 85 percent (BNSF and UP 2010).

Response to Last Bullet before Conclusion: From the EIS, Section 3.9.4.2:

It is assumed that BNSF would adjust other coal and non-coal train traffic up or down to account for varying frequency of coal trains from SCM to maximize track use (BNSF 2018). Therefore, the number and frequency for all train traffic would not change (only the duration) and the waiting times for trains would also stay the same...

Thus, for the proposed action alternative, there would be no additional adverse impacts from train diesel emissions.



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Western Environmental Law Center

October 22, 2019

Jen Lane
 Montana Department of Environmental Quality
 1520 East 6th Ave.
 PO Box 200901
 Helena, MT 59601
 jlane2@mt.gov

RE: Supplemental comment on DEIS for TR1 Expansion of Spring Creek Strip-Mine

Ms. Lane,

I am submitting the following supplemental comments and exhibits on behalf of the Montana Environmental Information Center on the DEIS for the TR1 expansion of the Spring Creek strip-mine.

WELC-16

A recent news article indicates that leadership of the Navajo Nation disputes claims by NTEC that the Nation has provided financial backing for surety bonds for reclamation at, among other mines, the Spring Creek Mine.¹ Given this dispute about financial assurances for reclamation bonds, there is a real danger that funding for reclamation may not materialize. The Montana Strip and Underground Mine Reclamation Act prohibits strip-mining unless there is an affirmative demonstration that reclamation can occur. ARM 17.24.405(6)(a). Similarly, the Montana Constitution that lands disturbed by mining “shall be reclaimed.” Mont. Const. art. IX, § 2(1).

Response WELC-16: Please see Response NPRC-4.

¹ Marley Shebala, *NTEC believes Nation gave 'blank check' for \$1B in bonds*, Gallup Independent (Oct. 21, 2019) (attached as Exhibit 1).

WELC-16
cont.

MEIC urges the Department to verify that any reclamation bonds offered by NTEC are not subject to dispute either by the Navajo Nation or the surety company. Otherwise, Montanans may be forced to once again pay the cost for improvident mining operations.

If you have any questions, please don't hesitate to reach out.

/s/ Shiloh Hernandez
Shiloh Hernandez
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103 Reeder's Alley
Helena, MT 59601
406.204.4861
hernandez@westernlaw.org

On behalf of Montana Environmental Information Center

ATTN: Montana Department of Environmental Quality
1520 E 6th Ave, Helena, MT 59601
Jen Lane -- jlane2@mt.gov

Public Comments for Spring Creek Mine TR1 Draft EIS

Sept. 25, 2019.

Account for climate in Spring Creek Mine Draft EIS

We are reaching a critical point when it comes to climate change. As it becomes more and more clear to the world that we must take actions to reduce our carbon emissions, we as Montanans must do our part.

The expansion of the Spring Creek mine is adding fuel to the climate fire. We all know it. The Montana Department of Environmental Quality has made a mistake in ignoring the potential impact that this expansion may have on our climate stability. Therefore we ask that you go back and study the potential climate impacts this mine expansion will have so we can actually ask ourselves the question: is this worth it?

Signed,

You are not taking the best available science into account when you analyze this expansion. Coal is not only NOT a help to the economy, it exacerbates global warming. Please spend more time on non-carbon emitting technologies for power like solar and wind. Do not approve this expansion. Instead lets work change over to solar and wind and fund those efforts.

Michele Dieterich
2099 Silver Ridge Rd Hamilton, MT 59840
telechele@hotmail.com (406) 363-7753

Yes Montana has coal deposits. Yes modern society needs fuel. But no, coal is not the answer. It is unconscionable for the state to allow expansion of coal mining without, at an absolute minimum, evaluating the effects on the planet. Better still, take a stand and deny the coal mining proposal.

Mary Leonard
3310 W Babcock St Apt D Bozeman, MT 59718

7. Public Comments

Response P-1: See response NRPC-6 and Response WELC-16.

In addition, DEQ may not approve a permit application for mining under certain circumstances which include an inadequate reclamation plan; inadequate protection of water resources outside the permit area; unacceptable impacts on exceptional topographic features, cultural resources, or scientific characteristics; a proposed location on a significant alluvial valley floor; unacceptable impacts on critical biological productivity or ecological fragility; and the threat of a public hazard or designation of the land as unsuitable for mining (Section 82-4-227 and 228, MCA; ARM 17.24.1131–1138, 1141-1148). DEQ cannot issue a permit in the event information contained in OSMRE’s Applicant Violator System identifies unabated or uncorrected violations of SMCRA or other environmental laws by affiliates or control entities of SCM (Section 82-4-227, MCA; ARM 17.24.1265). If DEQ denies the permit, SCM can modify and resubmit its permit application to address issues or concerns identified by DEQ during the permit review process.

Response P-2: Thank you for your comment. Please see Response NRPC-6.

P-1

P-2

maryjleonard@gmail.com (406) 522-0273

P-3 { WTF, Montana?!?! Don't we have children who live here? Don't you care at all about their futures? Why are you avoiding environmental effects? Is money the only value you perceive? This is a doomed project and you very well know it.

Toni Semple

13 Cokedale Spur Livingston, MT 59047

bajazuma@mac.com (406) 222-4716

P-4 { With all we know about climate change and it's effects on the state, adding additional coal extraction is insane. We need to be a forward looking state not backward.

Alex Adams

3408 Wagonwheel Rd Bozeman, MT 59715

alexkadams@gmail.com (406) 595-3864

P-5 { Why in the world would we/you consider mining any more coal?!?! Please step out from under the thumb of the fossil fuel industry and make a decision based on the health of the environment, the people, and the planet. Do not allow the expansion of the Spring Creek Mine.

Sas Weber

11055 Gee Norman Rd Belgrade, MT 59714

sas@stuartweber.com (406) 388-8878

P-6 { Why? Why would you expand the Spring Creek Mine with the coal industry is clearly fading. You should be re-educating the coal workers rather than focus on expansion. Look at what is happening in Wyoming before you take such an archaic steps. Come on DEQ--use some common sense!

Rebecca Nolte

257 S Easy St Missoula, MT 59802

noltedesign@msn.com 3072774472

Response P-3: See Response NPRC-3 and NPRC-6.

Response P-4: Thank you for your comment. Please see Response NPRC-6.

Response P-5: Thank you for your comment.

The state action before DEQ is to review and to make a decision on SCM's surface mine operating permit amendment under MSUMRA (§ 82-4-221 et seq., MCA) which is described in detail in Section 1.4.1.2 of the EIS. Also see Response to NPRC-6.

Response P-6: It is the role of SCM's corporate management and stockholders to determine whether the SCM continues to operate. The EIS analyzes impacts to the human environment within Montana's borders related to the proposed TR1 Project application pursuant to § 75-1-201(2)(a)(1), MCA. Also see Responses to NPRC-6 and WELC-6.

P-7 { When the coal is dug out of the ground and burned and the climate has absorbed its poison, will you tell your children that you approved of the action or that you tried to stop it
 Fritz Royer
 110 Splendid view dr Kalispell, MT 59901
 fritzandamy@hotmail.com (406) 752-3118

Response P-7: Thank you for your comment. Please see Response NPRC-6.

P-8 { What kind of world do you want to leave our children and grandchildren? This is not only irresponsible but is downright pernicious given monthly reports on how much more out of hand global warming is than anticipated as little as a year or two ago!
 Don Schriefer
 1004 South 2nd Street West Missoula, MT 59801
 dlavernes@yahoo.com (414) 736-8016

Response P-8: Thank you for your comment. Please see Response NPRC-6.

P-9 { We need to look forward to others energy forms. What's the point of continuing to support a dying industry that is bent on strangling our environment?
 Joan Gates
 136 W View Dr Kalispell, MT 59901
 gatesj136@gmail.com (406) 752-6715

Response P-9: Thank you for your comment. Please see Responses to NPRC-3, NPRC-6, and WELC-6.

P-10 { We need to invest in renewable energies not more coal mining.
 Jacob Tutty
 107 S 3rd St W Apt 56 Missoula, MT 59801
 jacobttutty@gmail.com (406) 493-4971

Response P-10: Thank you for your comment. Please see Responses to NPRC-6 and WELC-6.

P-11 { We need to change our dependence on fossil fuels. I want my childrens' children to have the same planet to enjoy now. Please, please consider the further impact of this expansion on the climate.
 William Nordholm
 9 Cedar Anaconda, MT 59711

Response P-11: Thank you for your comment. Please see Responses to NPRC-6 and WELC-6.

nordholmwilliam@yahoo.com (406) 250-2560

P-12 { We need to be able to run our country at a voters level and not allow them to just run willy nilly with our country and lives at their will and not what we as the country want. We are the country and need to take back control of it!

Barbara Redner

810 S 33rd St Billings, MT 59101

60bobbi@att.net (860) 218-0754

Response P-12: Thank you for your comment. DEQ reviewed the impacts from the proposed operating plan amendment (proposed action) pursuant to the Montana Environmental Policy Act, a procedural act. Sections 75-1-101, MCA, *et seq.*

P-13 { We must stop using coal right now. Natural gas, which is plentiful and less expensive, is a better transition fuel to clean energy and its storage. This is about the future of life on earth, not economics.

Catharine Carcy

3525 Duncan Dr Missoula, MT 59802

cgc57@bresnan.net (406) 543-1024

Response P-13: Thank you for your comment. Please see Responses NPRC-6 and WELC-6.

P-14 { We must stop this fossil fuel nonsense entirely! New jobs, a clean environment, safe food, water, and a must be our only direction! You would be responsible for killing humanity, and everything in the world if you allow any more of this nonsense! This is a crazy idea! Stop it Now! Don't allow any more and force those businesses to change and clean up the messes they already made! My children knew how to clean after themselves at 5 years old. Make the adults in charge clean up their mess!

Angela Taylor

211 S 4th St E, apt 1 Missoula, MT 59801

angeltaylor@yahoo.com (406) 493-6902

Response P-14: Thank you for your comment. See Response P-5. See also Responses NPRC-6 and WELC-6.

P-15 { We Montanans are enduring ever longer fire seasons, with worsening smoke, which is bad for our health. Coal extraction increases global warming and fire season duration. Please take climate impacts into consideration in the EIS.

Kristy Matthes

1150 34th St Apt 6D Missoula, MT 59801

matthes_15@hotmail.com (406) 207-8703

Response P-15: Thank you for your comment. Please see Response NPRC-6.

<p style="text-align: center;">---</p> <p>P-16 { We don't need expansion to the Spring Creek Coal Mine. Don't you understand that the coal industry is collapsing!! We need to look forward to other energy means before it's too late and prime land used by many animals is destroyed. The Environmental Impact Statement must be rejected as we are in a climate crisis! Reject the Spring Creek Coal Mine expansion!!!</p> <p>Judy Little 422 Hickory St Anaconda, MT 59711 jlittle@bresnan.net (406) 560-0404</p>	<p>Response P-16: Thank you for your comment. Please see Responses to NPRC-3 and NPRC-6.</p>
<p style="text-align: center;">---</p> <p>P-17 { We don't need expansion and addition of coal mines. We need to understand there is no clean coal. Montana needs clean, renewable energy, not expansion of any fossil fuel extraction or nuclear power. need to get rid of the legislators and people with political power who don't understand this before they destroy our state.</p> <p>Myrna Vanderburg box 295 Saint Ignatius, MT 59865 lvanderburg@blackfoot.net (406) 745-2344</p>	<p>Response P-17: Thank you for your comment. Please see Responses to NPRC-6 and WELC-6.</p>
<p style="text-align: center;">---</p> <p>P-18 { We don't need coal! It's killing us. Lobby NWE and the PSC to get rid of the 50KW limits on solar! We can do so much better for our kids</p> <p>Mark Whitman 614 S Beattie St Helena, MT 59601 mlwhitma@gmail.com (719) 252-9270</p>	<p>Response P-18: Thank you for your comment. Please see Responses to NPRC-6 and WELC-6.</p>
<p style="text-align: center;">---</p> <p>P-19 { We are in a climate crisis and the effects are already impacting our lives in Montana. The science is clear -- we must immediately reduce the use of fossil fuels, not expand coal mining. This is vital. Our children's lives depend on it.</p> <p>Susan Hinkins 1122 S 5th Ave Bozeman, MT 59715 hinkins@mcn.net (406) 586-6773</p> <p style="text-align: center;">---</p>	<p>Response P-19: Thank you for your comment. Please see Response NPRC-6.</p>

P-20 { We are in a climate crisis ... Definitely don't need more coal!!!
 Charlotte Lewis
 120 Pintail Loop, Apt 14 Hamilton, MT 59840
 ararabs@yahoo.com (406) 369-2086

Response P-20: Thank you for your comment. Please see Response NPRC-6.

P-21 { We all need to think before we act to save our planet and resources.
 Rebecca Spurlock
 19 Holiday Ln Missoula, MT 59801
 beccamonson23@gmail.com (406) 239-6415

Response P-21: Thank you for your comment. Please see Response NPRC-6.

P-22 { To who member is going to read this? If you cannot realize in 2019 that the damage this industry has done to the environment and will continue to do is irreparable. For those of you who are sucking money from lobbyists into their personal bank accounts? I find you absolutely detestable. This industry should be halted Montana should not have to suffer because of greedy Republicans
 I truly do not know how you can sleep at night knowing that the actions you take today are destroying the planet and leaving nothing for future generations stop being so careless and reprehensible
 Alexa Davis
 5803 Eastside Hwy Florence, MT 59833
 lexyco@gmail.com (619) 746-0460

Response P-22: Thank you for your comment. See Responses NPRC-6 and NPRC-11.

P-23 { This mine is a threat to sage grouse and their habitat. Please take into account the survival of this iconic species. Thank you.
 Krystal Weilage
 835 15th St Butte, MT 59701
 kweilage@earthlink.net (406) 782-4894

Response P-23: Impacts to sage grouse from the Proposed Action were analyzed and described in detail in Sections 3.12.3.3 and Section 3.12.4. A sage grouse habitat functional acreage approach was used to calculate and estimate the direct and secondary impacts associated with the Proposed Action. The total compensatory amount for loss of sage grouse habitat from the Proposed Action was \$107,727 and will be paid by SCM prior to any disturbances in the TR1 Project Area. DEQ consulted with the Sage Grouse Program, Montana Fish, Wildlife, and Parks, BLM, and OSMRE to help develop sage grouse mitigations. DEQ and OSMRE enforce compliance with MSUMRA and SMCRA, ensuring that post-mine reclamation be completed in accordance with the requirements.

P-24 { This is unquestionable one of the dumbest thing Montana can do right now. Coal fired power plants are closing all over the nation and most in MT will stop operation in the next 10 years. It's time to move on to clean green power production.

Response P-24: Thank you for your comment. Please see Responses to NPRC-6 and WELC-6.

-
- P-25 { This is sooooo wrong. You can do something about stopping this..
Anna Dudestadt
215 N Weaver St Belgrade, MT 59714
anna@rockingdc.com (406) 600-9877
-
- P-26 { This is a lose lose proposition. No one wants coal any more and the planet can?t handle us burning it anymore. Please think of your own kids if you won?t think of mine and stop this crazy coal idea.
Nancy Wilson
332 S 1st St W Apt A Missoula, MT 59801
nwilson1538@gmail.com (406) 531-6994
-
- P-27 { This expansion would be very costly for all and only benefit very few. It is foolish.
Sally Stansberry
1204 Poplar St Missoula, MT 59802
skstanz@msn.com (406) 370-3285
-
- P-28 { This coal mine will directly hurt Montana’s recreation economy not just for years but for decades.
Marc Peruzzi
1106 Monroe St Missoula, MT 59802
marc@mtnmedia.com (303) 579-9049
-
- P-29 { The sooner we can get off of Mr. Peabody's coal train the better off we ALL will be. Please help us create a more beautiful world for our children.
C Clarke
324 Blodgett View Dr Hamilton, MT 59840
scimtarian@hotmail.com (406) 381-4178
- Response P-25:** Thank you for your comment. Please see Responses to NPRC-3 and NPRC-6
- Response P-26:** Thank you for your comment. Please see Responses to NPRC-3 and NPRC-6
- Response P-27:** Thank you for your comment. Comment noted.
- Response P-28:** Thank you for your comment. Please see Section 3.5 of the EIS for a discussion of impacts to recreation.
- Response P-29:** Thank you for your comment. Please see Responses to NPRC-6 and WELC-6.

P-30 { There is no good reason to continue to invest in coal. Please redirect your energies toward renewable, non-polluting energy sources.

Jim Hagen
 PO Box 188 Plains, MT 59859
 jhagen56@gmail.com (720) 945-8181

Response P-30: Thank you for your comment. Please see Responses to NPRC-6 and WELC-6.

P-31 { The proposed Spring Creek mine expansion sits on prime elk, deer, and grouse habitat and would open access to an additional 75 million tons of coal. We are on the other side of coal. This proposed action would actually cause Montana more than it would provide in industry. Let's consider another non-invasive form of energy production if energy production is necessary. Energy production must enhance Montana's environment and the global climate...coal extraction does not.

Rochelle Gravance
 PO Box 1205 Columbus, MT 59019
 rmg13@hotmail.com (406) 328-9270

Response P-31: Thank you for your comment. Please see Section 3.7.4 in the EIS for the direct and secondary socioeconomic impacts for the Proposed Action. See also Responses to NPRC-6 and WELC-10.

P-32 { The health of Montana's children is too important to allow greed to risk it

R. Andrews
 131 Billion Pl Bozeman, MT 59715
 cimburasyn@yahoo.com (406) 404-1482

Response P-32: Thank you for your comment. Comment noted.

P-33 { The environment is important to all Montana's.

George Lund
 2515 Meridian Rd Apt 1 Victor, MT 59875
 glund16@gmail.com (574) 271-9881

Response P-33: Thank you for your comment. Comment noted.

P-34 { The effect of air pollution from burning fossil fuels has known and significant human health impacts - those have to be accounted for in the EIS!

Lori Byron

Response P-34: Impacts to air quality from the Proposed Action were analyzed and described in detail in Section 3.4.4.2. Please see Responses NPRC-6 and WELC-10.

RR 1 Box 1079 Hardin, MT 59034
 lori.byron@gmail.com (406) 671-5824

P-35 { ---
 The Cowboys in Montana are flogging a dead horse. Again
 Lynn Arney
 PO Box 855 Absarokee, MT 59001
 brotherleroy.1947@gmail.com (303) 682-5845

Response P-35: Thank you for your comment. Comment noted.

P-36 { ---
 The coal industry is DYING! Move on (be progressive instead of regressive?) and stop raping the land
 and ruining what's left for the animals that are losing their habitats.
 Jeanette Copeland
 1832 Montana St Missoula, MT 59801
 jeanette@bigsky.net (406) 728-2895

Response P-36: Thank you for your comment and please see Responses NPRC-6 and P-23.

P-37 { ---
 The climate crisis is here and not going to be fixed until we take drastic action. Stop dirty energy.
 Laurel Bitterman
 1301 W Park St Butte, MT 59701
 laurel.bitterman7@gmail.com (406) 890-9880

Response P-37: Thank you for your comment. Please see Response NPRC-6.

P-38 { ---
 Stop the coal mine!!!
 Tammy Fenske
 201 N Maurice St Plentywood, MT 59254
 tammy.fenske@sasktel.net (306) 537-4373

Response P-38: Thank you for your comment. The state action before DEQ is to review and to make a decision on SCM's surface mine operating permit amendment under MSUMRA (§ 82-4-221, MCA, *et seq.*) which is described in detail in Section 1.4.1.2 of the EIS. See also Responses NPRC-1 and P-1.

P-39 { ---
 Stop creating increased health disease and insurance costs with coal and replace with gas, solar and wind
 We have plenty of these other resources in MT and they do not impair our health!!!
 Jolene Jennings

Response P-39: Thank you for your comment. Comment noted and please see Responses NPRC-6 and WELC-6.

10 Comstock Rd Helena, MT 59624
 jolenejennings@hotmail.com (508) 886-4489

P-40 { ---
 Sitting in prime elk, mule deer, and grouse habitat near the Tongue River, this expansion not only is a threat to our climate, but also to some of Montana's most iconic wildlife. Enough is enough.

Meghan Larson
 213 Arrow Trail Bozeman, MT 59718
 m2larson@hotmail.com (406) 599-7670

P-41 { ---
 Say NO to coal mine expansion!

Craig Hanson
 5 creek crossing ct Missoula, MT 59802
 cheraighanson@gmail.com (540) 842-7870

P-42 { ---
 Saying that mining 75 million tons of coal would have no effect on Climate Change would be like defecating in a swimming pool. You could say that it was such a small amount that it didn't matter, but would you want to swim in it. We are the Last Best Place. Don't you want to keep it that way? Climate Change has been proven. The same can not be said about this impact statement.

William Clem, Montanan
 Bill Clem
 4243 W Babcock St Apt 4 Bozeman, MT 59718
 billsvision@gmail.com (406) 585-7909

P-43 { ---
 Right now is the time to reduce coal extraction and export. It is dangerous and hazardous to all life, and any environmental report that gives a pass to expansion of this industry in Montana is clearly bought. We won't look the other way.

Jeanne Kennedy Crosby
 703 N Grand Ave Bozeman, MT 59715
 jeanne.kc@comcast.net (503) 267-0217

Response P-40: Comment noted and see Responses to NPRC-2, P-1, and P-23. Elk and mule deer habitat are discussed in the EIS in Section 3.12.3.4 and further detail on mule deer is provided in Section 3.12.4.1. Section 2.3.9 states that "SCM would reclaim the TR1 mined areas to a postmine landscape with steep and moderate slopes, draws and drainages, and benchland for establishing a diversity of vegetation communities. The TR1 Project revegetation plan and postmining topography would primarily provide wildlife habitat for mule deer and sage grouse".

SCM has prepared a Habitat Recovery and Replacement Plan (HRRP) that included monitoring, mitigation, and conservation practices for wildlife species which occupy the permit area, with emphasis on restoring sagebrush and sage grouse habitat. The HRRP includes wildlife surveys and monitoring plans for big game, upland game birds, raptors, waterfowl, bats, rabbits, and other mammals. The HRRP included the use of wildlife friendly fencing and changing existing cattle grazing patterns (see Table 2.2-1 in the EIS) in their reclamation plans.

Response P-41: Thank you for your comment. Please see Responses to NPRC-3 and NPRC-6

Response P-42: Thank you for your comment. Please see Response NPRC-6.

Response P-43: Comment noted and see Responses to NPRC-3 and P-1.

<p>---</p> <p>P-44 { Really? Still not taking the environmental impacts of coal mining and burning? At least add the impact to the environmental impact assessment. This is beyond unsustainable...it is self-destructive.</p> <p>Toddy Perryman 1525 Silver Sage Ln Corvallis, MT 59828 tperryman@bitterroot.com (406) 961-4959</p>	<p>Response P-44: Thank you for your comment. Please see Responses to NRPC-6 and WELC-10.</p>
<p>---</p> <p>P-45 { Please think of others before yourself! We do not need anymore of this especially in our state disturbing our beautiful land and the animals who live there.</p> <p>Christen Huizenga 3401 Fallon Bozeman, MT 59718 c4huizen@gmail.com (269) 267-9681</p>	<p>Response P-45: Thank you for your comment. Land use and wildlife resources are discussed in Section 3.5 (Land Use) and Section 3.12 (Wildlife) in the EIS. Please see Response NRPC-1.</p>
<p>---</p> <p>P-46 { Please stop coal mining and invest dollars in renewable energy. I need clean air, don't you?</p> <p>Janet Fiero 812 S Garfield St Missoula, MT 59801 janetfiero77@gmail.com (406) 203-2164</p>	<p>Response P-46: Thank you for your comment. Please see Responses to WELC-6 and P-34.</p>
<p>---</p> <p>P-47 { Please pay attention to climate science gentlemen. Our state's environment is at stake.</p> <p>Samuel Lightbody PO Box 160771 Big Sky, MT 59716 lightbody77@gmail.com (406) 640-2994</p>	<p>Response P-47: Thank you for your comment. Please see response to WELC-6.</p>
<p>---</p> <p>P-48 { please listen to the scientist and help save our state's natural resources like the wildlife and our clean air and water! Stop this now.</p> <p>cheri Kirk 914 bigfork stage road Bigfork, MT 59911 cherikirk@hotmail.com (406) 425-1033</p>	<p>Response P-48: Thank you for your comment. Air quality, water, and wildlife resources are discussed in Sections 3.4 (Air), Section 3.11 (Water), and Section 3.12 (Wildlife) in the EIS. Please also see Responses to WELC-6, P-1, and P-34.</p>

<p style="text-align: center;">---</p> <p>P-49 { Please help us keep Montana beautiful; it is one of the most amazing places on the planet and deserves to remain so.</p> <p>Sincerely,</p> <p>Caroline McLean Caroline McLean 521 Brooks St Missoula, MT 59801 mclean.caroline@gmail.com (256) 337-1363</p>	<p>Response P-49: Thank you for your comment. Comment noted.</p>
<p style="text-align: center;">---</p> <p>P-50 { Please give attention to the growing climate crisis. We do not need more coal! Also please consider the prime elk, deer & grouse habitat that would be affected by the proposed mine expansion. Please, please do the right thing!</p> <p>Lois Stevens 415 S Pacific St Dillon, MT 59725 lastvns@yahoo.com (406) 988-0036</p>	<p>Response P-50: Thank you for your comment. Please see Responses P-1, P-5, P-23., and P-40.</p>
<p style="text-align: center;">---</p> <p>P-51 { Please don't approve more damage to our rare and precious state or our fragile ecosystem. We need to stop damaging our plant and find better ways to fuel our cars and heat our homes.</p> <p>Phil Thelen 12 2nd St East, Polson, MT 59860, United States Polson, MT 59860 thelen03@gmail.com (406) 253-1109</p>	<p>Response P-51: Thank you for your comment. Please see Responses to WELC-6 and P-1.</p>
<p style="text-align: center;">---</p> <p>P-52 { Please do not be climate change deniers or be influenced by lobby money. Please think about the future of our grandchildren. 12 years from now or sooner could possibly be the beginning of the end for humans on Planet Earth!</p> <p>Grant Nagel 7222 US Highway 287 Townsend, MT 59644</p>	<p>Response P-52: Thank you for your comment. Please see Response NPRC-6.</p>

grantnagel@hotmail.com (406) 266-9999

P-53 { Please do not approve the Spring Creek Mine Expansion Draft EIS. Fossil fuel-induced global warming now has indisputable scientific backing. Leave the coal in the ground and further develop non-greenhouse gas-producing methods of electricity generation such as hydropower, geothermal, nuclear power, wind turbine power, and solar cell power. I am a Montanan and I vote every election.

Philip Williams

3001 Secor Ave Bozeman, MT 59715

pfvms@juno.com (406) 994-5136

Response P-53: Thank you for your comment. Please see Responses to WELC-6 and P-1.

P-54 { Please consider future generations and reject this expansion.

Ian Woods

304 W Cleveland St Bozeman, MT 59715

ianmackellarwoods@yahoo.com (406) 585-7777

Response P-54: Thank you for your comment. Please see Response NPRC-6.

P-55 { Our grandchildren's future relies on us getting things right and it starts with RESPONSIBLE use of resources! Fossils fuels are part of the ever growing climate changes! WE MUST START PHASING THEM OUT AND INVESTING IN RENEWABLE ENERGY SOURCES, before it is too late!!!

Sharon Morehouse

146 Beaverhead Ln Dillon, MT 59725

morehouse@bresnan.net (406) 925-2231

Response P-55: Thank you for your comment. Please see Responses to NPRC-6 and WELC-6.

P-56 { One of the most critical issues concerning our only home and you are thinking of helping destroy it! Say no to coal.

Tim Horan

1775 University St Helena, MT 59601

whome@bresnan.net (406) 442-1619

Response P-56: Thank you for your comment. Please see Response NPRC-6.

<p>P-57 { OMG! What morons we have in seats of power. Stop the madness before it's too late. Wake up to reality your children depend on you to nurture the earth not destroy it.</p> <p>Joy Winder 723 5th Ave E Unit 215 Kalispell, MT 59901 joy.atthebrick@gmail.com (406) 527-3642</p> <p>---</p>	<p>Response P-57: Comment noted.</p>
<p>P-58 { obviously Montana officials have not heard that Northwest Montana is the fastest warming place on the PLANET!....what are you thinking? duh..more coal? get real</p> <p>Carol Blake 196 Garrison Dr Eureka, MT 59917 carol@carolblake.com (406) 889-3373</p> <p>---</p>	<p>Response P-58: Thank you for your comment. Please see Response NPRC-6.</p>
<p>P-59 { Now is the time to put a stop to further expansion of fossil fuel extraction and concentrate on reducing and eventually eliminating climate changing carbon emissions into Montana's clear sky.</p> <p>Please act wisely and promptly for the sake of our environment and humanity's future.</p> <p>Al Yates 35 Volney Creek Rd Red Lodge, MT 59068 ssources@gmail.com (406) 266-2100</p> <p>---</p>	<p>Response P-59: Thank you for your comment. Please see Responses to NPRC-6 and WELC-6.</p>
<p>P-60 { NOW is the time to cut back in every way possible on projects furthering the catastrophic effects we are seeing from climate change. Please DO NOT in any way expand mining/drilling in Montana.</p> <p>Thank you.</p> <p>Kerry Krebill 8 Park Pl Clancy, MT 59634 kerrykrebill@aol.com (406) 933-5246</p> <p>---</p>	<p>Response P-60: Thank you for your comment. Please see Response NPRC-6.</p>
<p>P-61 { NO MORE COAL MINING! STOP ALREADY!</p>	<p>Response P-61: Thank you for your comment. Comment noted.</p>

Jeffrey Wise
PO Box 1488 Red Lodge, MT 59068
jeffwi1958@yahoo.com (406) 425-3143

P-62 { No more coal mines. At all.
Priscilla Bell
1310 Wild Horse Rd Laurel, MT 59044
pbell.12247@gmail.com (406) 628-2524

Response P-62: Thank you for your comment. Comment noted.

P-63 { No more coal!!!
C Stigliano
113 Whitetail Ct Bigfork, MT 59911
beansky51@gmail.com (406) 420-2035

Response P-63: Thank you for your comment. Comment noted.

P-64 { NO ! NO ! No ! This is not the right direction to go! Create jobs for Montanans thru Clean Energy. We have to change our old ways, be more efficient and clean. I know jobs are important but this is not the best way to meet peoples needs now or in the future. Let us be smart and fair and accurate about this impact!
Connie Grenz
PO Box 1215 Boulder, MT 59632
conniegrenz63@gmail.com (406) 225-3288

Response P-64: Thank you for your comment. Please see Responses to NPRC-6 and WELC-6.

P-65 { No, no, no to this expansion! Accept the fact that climate change is real, and that the continued consumption of fossil fuels is, as it were, adding fuel to the fires of that change! It won't bother me?I'm just an old fart native Montanan, and I won't be around long enough to see the disastrous consequences of this continuing consumption. My children and grandchildren (and yours as well) will be, however, and this kind of mining WILL be pointed to as one amongst many damnably short sighted contributions to the dystopian future they will inherit. Shame on you, and on all of the continuing fossil fuel extractors!
Eric Nelson
2106 Greenough Dr W Missoula, MT 59802

Response P-65: Thank you for your comment. Please see Response NPRC-6.

ericnel42@gmail.com (406) 728-7952

P-66 { National Geographic research pronounced coal to all be dirty. Let's leave it in the ground. My child's world is at stake.
 Eric Saalborn
 580 Macgregor Rd Belgrade, MT 59714
 saal53@icloud.com (406) 388-4852

Response P-66: Thank you for your comment. Comment noted.

Mt. Dept. Of Environmental Quality

P-67 { Please for our children's sake reject this!
 R. Garbarino
 Ronald Garbarino
 2829 Amherst Ave Butte, MT 59701
 ronald21@live.com (406) 494-7024

Response P-67: Thank you for your comment. Please see Responses NPRC-6 and P-1.

P-68 { Montanans are already experiencing negative impacts on their health due to climate change. In order to comply with the " charged of protecting a clean and healthy environment as guaranteed to our citizens by our State Constitution," the Department of Environmental Quality must consider the impacts of this proposed expansion of Spring Creek Mine. The draft EIS stating that there will be no impacts on climate change ignores well founded scientific evidence to the contrary and should be redone. Even incremental contributions to worsening climate change should be considered; failure or unwillingness to do so will contribute to further risks to Montanans quality of life and overall health.

Response P-68: Thank you for your comment. The EIS does not say that there will be no impacts on climate change. Please see Response NPRC-6.

Robert Byron

RR 1 Box 1079 Hardin, MT 59034

rgbyron@gmail.com (406) 679-0584

P-69 { Montana is known for its vast natural landmarks. We do not want a mine to be one of them! PLEASE consider this! We want to be able to use this land down the line, for recreation, not waste.

Response P-69: Thank you for your comment. Please see Responses to P-1 and P-28.

Madison Huffman

2008 Wilshire St Billings, MT 59102

madison.huffman@rocky.edu (605) 210-1131

P-70 { Montana has so many other great, enduring natural resources to draw on for revenue. Please give a thought for the future and leave the coal in the ground.

Caryn Rouse

155 Mount Ave Missoula, MT 59801

carynrouse@gmail.com (406) 555-5555

P-71 { Let's get jobs for Montanans in sustainable industries and show we are committed to our people, environment, and long-term economic success. We can either be leaders, as this great state has often been or we can allow for outside interests to gain while we ruin our land and our children's futures.

Melissa Sladek

107 Connie Lou Ln Columbia Falls, MT 59912

mssladek72@gmail.com (406) 456-7865

P-72 { Let's not leave the worst of climate change for our grandkids to deal with!

James Bailey

581 Antelope Ridge Rd Belgrade, MT 59714

jabailey34@aol.com (406) 599-1343

P-73 { Let's not go backwards to old technology!

Our environment is priceless - it needs to be protected!

Victoria Byrd-Rinek

PO Box 130206 Coram, MT 59913

aknissal1@gmail.com (406) 387-5004

Response P-70: Thank you for your comment. Please see Responses to NPRC-3 and NPRC-6.

Response P-71: Thank you for your comment. Please see Responses to NPRC-3 and NPRC-6.

Response P-72: Thank you for your comment. Please see Response NPRC-6.

Response P-73: Thank you for your comment. Please see Response NPRC-6.

- P-74 { Let's bring ourselves into the 22nd century and begin protecting our resources. We need change and we need it now.
Heath Carey
319 S 5th St W Missoula, MT 59801
hncarey@gmail.com (406) 396-5247

- P-75 { leave the damn coal in the ground already. We are dying!!!
Jason Davis
623 1/2 Howell St Missoula, MT 59802
doodindee@hotmail.com (406) 531-9984

- P-76 { Keep my children's future safe!
Doug Mavor
7007 Bristol Ln Bozeman, MT 59715
dougmavor@gmail.com (406) 585-3711

- P-77 { I urge you to reject the current EIS statement regards the Spring Creek mine. Climate change is real! Please think of your children and grandchildren who will live with the consequences of a misguided decision much longer than you and I. Thank you
John Trauscht
520 E Sussex Ave Missoula, MT 59801
jmtrauscht@live.com (406) 543-4333

- P-78 { It's time to stop this useless extraction of Montana's resources at the cost of the health of its environment and people. It's time for this state to whole heartedly shift to alternative and less-polluting sources of energy.
Tina Zenzola
PO Box 2076 Bigfork, MT 59911
- Response P-74:** Thank you for your comment. Comment noted.
- Response P-75:** Comment noted.
- Response P-76:** Thank you for your comment. Comment noted.
- Response P-77:** Thank you for your comment. Please see Responses NPRC-6 and P-1.
- Response P-78:** Thank you for your comment. Please see Responses to NPRC-6 and WELC-6.

tzenzola@gmail.com (619) 555-2222

P-79 { It's time to act responsibly and quit making excuses to our grandkids for poor judgement and repeated offenses against their future.

J Mills

5202 Pryor Mountain Ct Missoula, MT 59803

jmills3@me.com (913) 707-1661

P-80 { It is time to stop ignoring what is happening in our world. This is a step in the wrong direction and it is time to stand up for what is necessary for the future, not just immediate financial gain. Do what is right!

Charles Fligel

3240 S Montana St Butte, MT 59701

charles.fligel@gmail.com (406) 565-9583

P-81 { It is time to stop building new dirty energy infrastructure, to stop subsidizing an industry that has been known for decades to be affecting global climate, to stop using taxpayers' money to block the transition to clean energy. That means no leases, licenses, sales, rights-a-way, permits, or subsidies of any kind for dirty energy development on public lands, state lands, county lands, municipal lands. This is no way affects private companies continuing current operations or operating in the private arena.

Anne Millbrooke

280 W Kagy Blvd D-248 Bozeman, MT 59715

anne27m@yahoo.com (406) 599-1096

P-82 { It is not a good idea to expand coal mines when so many coal companies are filing for bankruptcy.

Gary Webber

419 S Frontage Rd W Alberton, MT 59820

doctorg@montana.com (406) 722-4915

Response P-79: Thank you for your comment. Comment noted.

Response P-80: Thank you for your comment. Please see Responses to WELC-10 and P-5.

Response P-81: Thank you for your comment. Please see Responses to NPRC-6 and WELC-6.

Response P-82: Thank you for your comment. Please see Response NPRC-4.

P-83 { It is insanity to go down the dead end path of coal. Cant you support clean wind a nd solar for us, for our children.
 Tana Patterson
 1712 Lewis Ave Billings, MT 59102
 tananmontana@hotmail.com (406) 245-1037

Response P-83: Thank you for your comment. Please see Responses to NPRC-3 and NPRC-6.

P-84 { It is inconceivable to me and to many Montanans that the effects of this mine expansion on air quality and climate change were not evaluated. According to the Montana Constitution we are guaranteed a clean and healthy environment. This expansion violates that basic right. The DEQ should work for the people's future and the Constitutional rights, not the out of state owners of the mine.
 Linda Semones
 404 S Church Ave Bozeman, MT 59715
 lindasemones@hotmail.com (406) 587-1516

Response P-84: Thank you for your comment. Please see Response to NPRC-6 and P-34.

P-85 { It is imperative we rethink this decision. Not only for us but for future generations.
 Michelle Gagne
 77677 Gallatin Rd Bozeman, MT 59718
 michelle_christine07@yahoo.com (817) 845-2264

Response P-85: Thank you for your comment. Please see Response NPRC-6.

P-86 { It is clear that coal, because if its filth, expense and adverse infringement on the earth's atmosphere, is becoming obsolete. Montana's future would be better served through emphasis on renewable energy.
 Sam & Ruth Neff
 1045 4th St Whitefish, MT 59937
 samn@earlham.edu (406) 862-1629

Response P-86: Thank you for your comment. Please see Response NPRC-6.

P-87 { It is beyond belief that expanding the Spring Creek Mine to access 75 million tons of coal will not impact climate change. We must recognize the reality that reliance on fossil fuels must end or we will create climate chaos and threaten our lives and our children's and grandchildren along with all the other life on earth. Living plants and animals are not capable of adapting to the rapid change in climate that fossil fuel use is causing we must stop now.

Response P-87: Thank you for your comment. Please see Responses NPRC-6 and P-1.

Nike Stevens
 15300 Horse Creek Rd Bozeman, MT 59715
 stevenswildlife@earthlink.net (406) 686-4283

P-88 { It's time to take climate change seriously! Rather than expand fossil fuel use why not put money into safe renewable energy sources? Our planet can't survive much more damage-therefore neither can we!

Kristine Kelly Coburn
 516 Leslie Ave Helena, MT 59601
 kkcoburn@bresnan.net (406) 461-9310

P-89 { It's time for Montana to put coal in the rear view mirror. Don't destroy our children's future by pushing a fuel that leads directly to global warming and exacerbates the climate crisis. Keep it in the ground.

Todd Tanner
 178 Wolf Creek Ranch Dr Bigfork, MT 59911
 todd.tanner@mac.com (406) 837-6261

P-90 { I say no to coal mine, our environment is more important

Will Michel
 1008 5th street w. Polson, MT 59860
 willmichel15@gmail.com (406) 210-7168

P-91 { I love Montana and chose to raise my family here because of its quality of life - blue ribbon trout streams, access to public lands, and clean air. Please move forward instead of stepping backwards and endangering all of us, including workers, with dirty coal. Thank you.

Katherine Ketschek
 PO Box 160282 Big Sky, MT 59716
 kate@revolutionhousemedia.com (603) 828-1050

Response P-88: Thank you for your comment. Please see Response NPRC-6.

Response P-89: Thank you for your comment. Please see Responses to NPRC-3 and NPRC-6.

Response P-90: Thank you for your comment. Please see Response NPRC-6.

Response P-91: Thank you for your comment. Comment noted.

P-92 { I know it a can be hard to change our perspectives and change. But it's no longer a choice. We have drastically impacted our planet - we need to first resolve to stop as much of that impact as possible and then do what we can to fix the problems we've made.

Expanding coal mining operations doesn't accomplish either of those goals. It would mean being willfu blind to our current situation and choosing to make it worse just for profit. If it's really profit we want, i time to look towards other energy industries. Coal is failing - we can make more money elsewhere whil also choosing energy sources that aren't nearly as damaging to our planet.

This EIS is false. And dangerous. Please reject it - do not believe that expanding coal mining will have effect on the ecosystem and climate changes.

Lacey England
 PO Box 1963 Bozeman, MT 59771
 laceymay99@gmail.com (509) 901-7701

Response P-92: Potential impacts to the ecosystem from the No Action and Proposed Action alternatives are shown on Table 2.5-2, Comparison of Effects by Alternative and Resource. Also see Responses NPRC-6, WELC-6, and P-1.

P-93 { If a country like Scotland has solar panels on a large percentage of the homes, Montana can surely start using solar power. Stop letting industry/lobbyists make decisions and do what?s best for the country. You say going solar will put miners out of work? Then train them to install solar.

Kathleen Scott
 1636 Whitefish Ave Whitefish, MT 59937
 badkittybikes@yahoo.com (800) 336-1977

Response P-93: The EIS does not claim that solar will put miners out of work. Please also see Response WELC-6.

P-94 { I don't want mining expansion! Especially at the cost of environmental health

James Pahre
 12977 Cottonwood Rd Bozeman, MT 59718
 jpahre@aol.com (406) 585-8208

Response P-94: Thank you for your comment. Comment noted.

P-95 { I assume you don't care about your grandchildren and their childrens health, but I certainly do. Stop trying to kill the planet.

Frank Willett
 3 Deer Trace Trl Fishtail, MT 59028
 fishtailfrank@nemont.net (406) 328-6645

Response P-95: Thank you for your comment. Comment noted.

 P-96 { I am a 77 year old Grandmother who moved to Montana in 2011, to make my home in this State which is filled with so much natural beauty and the plants and animals who inhabit it. Over this last year I have become more and more convinced that we as a species are well into the ultimate destruction of this most beautiful of planets. Please, please to not expand coal mining at the Spring Creek mine. Do the right thing for Montana, Montanans, and the environment and all of its wildlife and plants near the present mine and do not expand the mine!! Thank you.
 Veronica Cavell
 2950 Aspenway Dr Helena, MT 59601
 veronicacavell@yahoo.com (406) 443-3521

Response P-96: Thank you for your comment. Wildlife and vegetation are discussed in Section 3.12 (Wildlife) and Section 3.10 (Vegetation and Reclamation) in the EIS.

 P-97 { I'm new to Montana, please keep the environment clean. Go to renewable energy sources.
 Cheryl Hickman
 4314 Expressway Apt 21 Missoula, MT 59808
 cheryl121152@yahoo.com (443) 799-0321

Response P-97: Thank you for your comment. Please see Response NPRC-6.

 P-98 { I'm a farmer. The simple fact is, the climate crisis will disrupt farming, threatening our food system. Unless we stop using coal, future generations will starve.
 Wade Sikorski
 19 Wicklow Ln Baker, MT 59313
 wds@midrivers.com (406) 775-6378

Response P-98: Thank you for your comment. Please see Response NPRC-6.

 P-99 { How can you ignore climate change...shameful. Look in new directions for energy.
 Desiree Cygan
 PO Box 407 White Sulphur Springs, MT 59645
 jehazimo@live.com (815) 670-3936

Response P-99: Thank you for your comment. Please see Response NPRC-6.

 P-100 { How can you ignore all the evidence about the impact of coal on the climate?
 Mary Stranahan

Response P-100: Thank you for your comment. Please see Response NPRC-6.

72730 Heart View Ln Arlee, MT 59821
 mary@goodworksventures.com (406) 531-7975

 P-101 { Good grief, can't you see the writing on the wall; climate change is here and MT DEQ must acknowledge it by not permitting harmful projects that threaten public and environmental health. Just say NO.
 Gail Richardson
 5263 Cimmeron Dr Bozeman, MT 59715
 envirogail@q.com (406) 585-7206

Response P-101: Please see Responses to NPRC-3 and NPRC-6.

 P-102 { Furthermore, the price of coal has been declining as industries switch to better alternatives. This trend will only continue, as coal has too many negative impacts on human health as well as damaging our climate. On the other hand, Montana's towns rely on hunting, fishing and people's enjoyment of beautiful landscapes. The expected short term benefit to the local economy from the proposed mine expansion can not possibly make up for all of the long term damage that it will cause in the end.
 June Mohler
 540 Elkhorn Ln Butte, MT 59701
 pterygophora@earthlink.net (406) 494-4235

Response P-102: Thank you for your comment. Please see Responses WELC-6 and P-1.

 P-103 { Expanding extraction of a diminishing resource at the expense of constitutionally protected clean air and water makes absolutely no sense. Coal companies are frantically pursuing bankruptcies, stiffing thousands of creditors, and victimizing their own employees.
 I thought the people at DEQ were smarter than this.
 Fred Brewer
 416 Eldora Dr Butte, MT 59701
 fbrewer@brewerassoc.com (406) 494-3715

Response P-103: Thank you for your comment. Air quality and water are discussed in Section 3.4 (Air) and Section 3.11 (Water) in the EIS. Please see Response NPRC-4.

 P-104 { Everywhere in the world the move is to renewables. Expanding a dying industry makes no sense.
 William Hamilton

Response P-104: Thank you for your comment. Please see Response NPRC-6.

PO Box 4675 Butte, MT 59702
 william.hamilton13@gmail.com (307) 699-2200

P-105 { Enough is enough don't you think.

Thomas Robinson
 1319 Sherwood St Apt B Missoula, MT 59802
 twrobinson5@hotmail.com (406) 549-3226

Response P-105: Thank you for your comment. Comment noted.

P-106 { Do it for the kids sake

Thompson Smith
 3850 Ashley lake road. Saint Ignatius, MT 59824
 fro@blackfoot.net (406) 261-8903

Response P-106: Thank you for your comment. Comment noted.

P-107 { Didn't you see all the rallies happening around the world yesterday. We don't need and want any more coal mines - especially in Montana !!!!

Beverly Fox
 1423 Stuart St Helena, MT 59601
 beverlyfox@mt.net (406) 443-3581

Response P-107: Thank you for your comment. Please see Response NPRC-6.

P-108 { DEQ is defying Article IX, Section 1 of the Montana Constitution which mandates both protection and improvement of the environment for future generations. Allowing for any expansion of coal mining is a blatant disregard to this statute.

Lisa Sukut
 515 E Montana St Livingston, MT 59047
 lisas@mtlib.org (406) 222-2598

Response P-108: Thank you for your comment. Please see Responses to NPRC-6 and P-1.

P-109 { DEQ has an obligation under our constitution to ensure a healthy environment for MT-- not to cause more harm. Without a full study of the climate change impacts of this coal mine, DEQ is ignoring this threat to

Response P-109: Thank you for your comment. Please see Response to NPRC-6.

P-109
cont. { the rights of all MT citizens. The time is now to make a full investigation and make hard choices if needed. Back to the process DEQ - complete your required study of the climate impacts of this mine.
Barbara Rusmore
1429 S Grand Ave Bozeman, MT 59715
brusmore@gmail.com (406) 582-1209

P-110 { DEQ, Are you totally corrupted or just severely intellectually challenged?
The last thing our economically backward state needs is more environmental/cultural resources damage from coal mining. I sit here hundreds of miles from the coal sources in a low income/elderly/minority loaded public housing block near the BNSF coal & oil cars and have serious pulmonary problems from fumes and particulate and can't afford to move...how many Montanans need to die before you pay attention?!?
Darrel Armstrong
PO Box 691 Missoula, MT 59806
ares.gen7@gmail.com (406) 207-6239

P-111 { Denial and obfuscation should not substitute for science.
Jeffrey Smith
105 Channel Dr Missoula, MT 59804
yswolfhowl@gmail.com (406) 880-8320

P-112 { Continuing to permit coal production is akin to prescribing cigarettes to a patient with lung cancer. The climate crises that will continue to unfold in our midst demands that we take more prudent action than green-lighting the proposed expansion of the Spring Creek Mine.
Anya Tyson
202 S Tracy Ave Bozeman, MT 59715
anyamtyson@gmail.com (719) 231-2450

P-113 { Continuing the process of extracting, shipping, and burning environment destroying fossil fuels must stop now!! Dilution is NOT the solution to pollution, as we have already diluted ourselves into the toxic

Response P-110: Thank you for your comment. One cultural resource site (Site 24BH3392) would be disturbed by the Proposed Action and a mitigation plan for this site was approved in 2012 (Section 3.13.4.2 in the EIS). The mitigation work would be completed prior to any disturbance. Please see Response NPRC-5.
Please also see Section 3.9.3.3 of the EIS for a discussion on potential impacts to health from coal transportation by rail.

Response P-111: Thank you for your comment. Comment noted.

Response P-112: Thank you for your comment. Please see Response NPRC-6.

Response P-113: Thank you for your comment. Comment noted.

P-113 { cesspool of air, water, and land that is becoming not capable of sustaining life. We only have this one planet, STOP destroying it NOW!!
 cont. Keith Blaylock
 535 Creston Hatchery Rd Kalispell, MT 59901
 kblay211@gmail.com (406) 755-5555

P-114 { Coal must not expand if we are going to keep our planet inhabitable for our children, wildlife and biodiversity. Plants, animals, birds, fish and crops are depending on us to do the right thing.
 Maryetta Bauer
 36997 Haack Rd Polson, MT 59860
 maryettab@icloud.com (406) 249-5806

P-115 { Coal is the past. Do not let Montana invest in an archaic energy source that is killing our planet and our future!
 Elizabeth Stears
 311 Parkhill Dr. Billings, MT 59101
 lizzystears@gmail.com (307) 752-5017

P-116 { Coal is so outdated now as a fuel source I find it puzzling why you would consider the Spring Creek Mine expansion at this time. The expansion would contribute to the climate change problem in a big way. When we are at a critical time in our history, why would you even consider a project so outdated and dangerous to our country? No more coal mining!
 Sharon Goss
 3307 Stonewall Ln Billings, MT 59102
 mtkidz50@gmail.com (541) 884-0255

P-117 { Coal is no longer a viable energy source for all of the above reasons. Set up wind farms out there! Or solar sites! Trying to breathe life into this industry is preposterous!
 sheila zohrer

Response P-114: Thank you for your comment. Vegetation and wildlife are discussed in Section 3.10 (Vegetation and Reclamation) and Section 3.12 (Wildlife) in the EIS.

Response P-115: Thank you for your comment. Please see Response NPRC-6.

Response P-116: Thank you for your comment. Please see Responses to NPRC-3 and NPRC-6.

Response P-117: Thank you for your comment. Please see Responses to NPRC-3 and NPRC-6.

155 Marken Lane Bigfork, MT 59911
sheilazohrer@yahoo.com (406) 837-0798

P-118 { Coal is killing our children and grandchildren for profit.How can you allow this.

Erik Rodriguez

PO Box 772 Boulder, MT 59632

erik109238@yahoo.com (406) 283-1905

Response P-118: Thank you for your comment. See Response NPRC-6.

P-119 { Coal is a step backwards for Montanans! We want people to have reliable jobs, not jobs that will disappear when the coal or oil runs out. We want clean air and water, not mining destruction and pollution! We know that the environmental and social costs of expanding coal extraction are too great to be justifiable. We challenge you to demonstrate otherwise.

Amelia Liberatore

435 S 2nd St W Missoula, MT 59801

amelialiberatore@gmail.com (406) 207-6827

Response P-119: Thank you for your comment. Please see Sections 3.4 (Air) and 3.11 (Water) Sections in the EIS. See Responses to NPRC-6, P-1 and P-5.

P-120 { Coal is an energy solution whose tome has come and gone. We have to keep carbon in the ground. DEQ's duty is to all montanans not just the extractive resources industry.

Christopher Clark

PO Box 1531 Seeley Lake, MT 59937

cclark@clarkappraisal.us (406) 862-1661

Response P-120: Thank you for your comment. Please see Responses to NPRC-3 and NPRC-6.

P-121 { Coal is a dying energy source. Please do a complete environmental impact statement.

Geri Unbehend

1927 Oriole Dr Missoula, MT 59808

akagu@aol.com (407) 544-2595

Response P-121: Please see Response NPRC-6. DEQ published a draft environmental impact statement in August 2019. The 30-day comment period on the draft EIS started August 27, 2019 and ended September 26, 2019.

P-122 { Coal's time is up. It does not create many jobs and creates environmental messes for the taxpayers to clean up both in terms of land degradation and climate change. Don't make it worse.
Tom Arvidson
2025 Mullan Rd Apt 203 Missoula, MT 59808
tomarvidson00@gmail.com (406) 253-2811

Response P-122: Thank you for your comment. Please see Responses to NPRC-6 and P-1.

P-123 { Carbon emissions are destroying Montana as well as the rest of our planet! Please take this into account as well as the loss of habitat for many game animals! We do not need a mine expansion!!
Scott Merrell
PO Box 2153 Thompson Falls, MT 59873
ssmdeep@hotmail.com (360) 480-0251

Response P-123: Thank you for your comment. Please see Section 3.12.3.4 in the EIS for information about Big Game (game animals). Please also see Response P-23.

P-124 { Burning coal is so detrimental to the environment. Even if we were to ship it to China....we would have the problems of coal dust from all the trains, and then the prevailing winds would push the toxics from burning in China towards us and would increase global air pollution, but would also acidify the ocean....where the coral reefs and connected ecosystems are already under strain. Burning fossil fuel is so seriously wrong for the earth, and we are agreeing to it to enrich just a few, while poisoning our earth, animals, and people. PLEASE don't expand coal mining and burning. Our lives and future lives are already in jeopardy!
Sandi Nichols
PO Box 626 Butte, MT 59703
sandrika.n@hotmail.com (406) 565-5454

Response P-124: Thank you for your comment. Please see Responses to NPRC-5, NPRC-6, P-1, and P-34.

P-125 { As someone who lives in Butte, where the largest Superfund site is located, it's incredibly important to me that we examine all potential environmental impact and the effect it will have on climate change. Montana cannot afford another disaster, and it's imperative that all potential issues be examined before approval. Clearly that has not happened in this case.
Jamie Upham
104 Shawna Ln Butte, MT 59701
jamieupham@gmail.com (830) 446-1063

Response P-125: Thank you for your comment. Please see Response NPRC-6.

P-126 { As a State we need to invest in sustainable green energy. Denying the inevitability of coal going the way of the dinosaurs is not sustainable, smart, or a good use of our resources.

Shannon Hensler
9982 Barns Ct Lolo, MT 59847
shannon_hensler@yahoo.com (406) 546-6205

Response P-126: Thank you for your comment. Please see Responses to WELC-6 and P-1.

P-127 { Are you kidding me?! ?No effect on climate change?!? You?d have to be a COMPLETE moron to really believe that expanding the coal mine wouldn?t have any effect on climate change. Of course it does! We?re on the brink of mass extinction. If big names companies don?t get their act together we?re all in deep shit. It?s bad business doing things that are soon to be outdated anyway. Make the change. Go green Create millions of job opportunities. Keep making money for you, keep people safe and healthy. Save the planet, save everyone. The world will keep spinning. I urge you to please listen.

Breanna Bilile
15 Atel Rd Arlee, MT 59821
breannabilile@yahoo.com (406) 314-3105

Response P-127: Thank you for your comment. Please see Responses NPRC-6, WELC-6, and P-1.

P-128 { Additional coal mining is the wrong thing, wrong for Montana land, water, ranches and wildlife, wring for the climate, wrong for Earth. I strongly oppose expansion of the Spring Creek Mine. A totally wrong idea. Invest in solar panels and windmills!

Marya Grathwohl
1134 N 22nd St Apt 7 Billings, MT 59101
earthope@vcn.com (307) 751-9161

Response P-128: Thank you for your comment. Please see Responses to NPRC-6 and WELC-6.

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121 E River Rd Emigrant, MT 59027
paulvphotography@yahoo.com (800) 211-3535

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Claire Trauth

3958 Kootenai Ct Stevensville, MT 59870

clairetrauth@gmail.com (406) 375-5399

Subject: FW: Fwd: Comment on proposed expansion of the Spring Creek coal mine

----- Original Message -----

From: Charlene Woodcock
Received: Mon Sep 23 2019 21:57:33 GMT-0600 (Mountain Daylight Time)
To: Governor Bullock; Governor Bullock; Governor Bullock
Subject: Fwd: Comment on proposed expansion of the Spring Creek coal mine

Dear Governor Bullock,

Please find my comment to the DEQ below. I find it disturbing that the DEQ Public Policy Director position is vacant. I hope you can fill it with a person of integrity, committed to the good of present and future residents of Montana, not to coal corporation profits.

Thank you.

Charlene M. woodcock

Begin forwarded message:

From: Charlene Woodcock <charlene@woodynet.net>
Subject: Comment on proposed expansion of the Spring Creek coal mine
Date: September 23, 2019 at 8:51:26 PM PDT
To: DEQCommunicationsTeam@mt.gov

To the Montana Department of Environmental Quality:

At a time when we know the mining, transport, and burning of coal is exacerbating climate change, it is outrageously irresponsible for the DEQ to even consider approving the proposed TR1 expansion of the Spring Creek coal mine. It is a dereliction of your duty, and a violation of Montanans' constitutional right to a clean and healthful environment, to ignore the climate impacts that will result from the expansion of the Spring Creek Mine in the environmental impact statement.

The impacts from climate change in Montana are severe and well documented. Glacier Park's glaciers are fast melting away. The Montana Climate Assessment is already compiled and readily available to DEQ by the Montana Institute on Ecosystems Climate Assessment.

The DEQ needs to set aside the current draft environmental impact statement, conduct an actual environmental review that considers climate change, and reject the expansion of the Spring Creek mine.

Sincerely,

Charlene M. Woodcock
2504 Langohr Street
Bozeman MT 59715

8. Charlene Woodcock

Response Woodcock-1: Thank you for your comment. Please see Response NPRC-6.

Woodcock-1

9/25/2019

Department of Environmental Quality
 Attn.: Jen Lane, Director's Office
 PO Box 200901
 Helena, MT 59620

RE: Comments on Spring Creek draft EIS

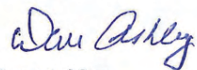
I understand that DEQ is considering letting Spring Creek (either Cloud Peak or Navajo Transitional Energy Company) mine an additional 72 million tons of coal.

DA-1 { Attached is a chart showing CO 2 levels over the last 400,000 years. Please note that beginning in about 1950 CO 2 levels began rising and are now literally 'off the charts'. It's fine to chat about deer and elk habitat in an EIS but to ignore coal's contributions to climate change is to ignore the elephant in the room. The moral thing to do is to leave this coal in the ground.

DA-2 { Has DEQ done due diligence regarding the company the state is dealing with on this permit application? I notice that: "Navajo Transitional Energy Company LLC is a single member LLC, organized under the laws of the Navajo Nation." Questions. 1) Are our environmental laws enforceable against a sovereign out of state nation? 2) Has DEQ analyzed the laws of the Navajo Nation regarding its relationship with states like Montana? 3) If the \$2.43 per ton federal Indian Coal Production Tax Credit were to disappear, would that jeopardize the security behind any promises made by this entity? 4) Does Montana have responsibilities (like the IRS) regarding the ultimate beneficiary of the tax credit? Would the credit go to NTEC or a third party beneficiary? If so, I'd suggest that Montana be privy to any agreements between NTEC and related financial institutions. (IRS Form 8835 attached)

Please rule against this permit application. It's the right course of action from an environmental quality perspective. If the department rules in favor of the application, please make sure all performance bonds and financial requirements and promises are 'in the bank' prior to approval.

Thank you.



Dave Ashley
 625 2nd St
 Helena, MT 59601
 dashley1@gmail.com

9. David Ashley

Response DA-1: Thank you for your comment. Please see Response NPRC-6.

Response DA-2: Please see Response WELC-2

