

## **Chapter 2**

### **ALTERNATIVES INCLUDING THE PROPOSED ACTION**

#### **2.0 INTRODUCTION**

This Chapter describes the alternatives developed to address the issues, and presents a comparison of the alternatives. Section 2.2 presents these alternatives in detail.

#### **2.1 DEVELOPMENT OF ALTERNATIVES**

Alternatives present different management options in response to the purpose and need for the Proposed Action and address the relevant issues related to the Proposed Action. The effects analysis (Chapter 4) then describes the known or potential effects that would result if the alternatives were implemented.

*Alternative A* is the No Action Alternative. In this alternative, no approvals would be issued for the POD. The existing situation would continue and no federal wells or associated infrastructure would be constructed. The POD proposed by Fidelity would be denied in its entirety and the landscape would not be further altered. This alternative is required and was included to provide the basis for comparison with the other action alternatives.

*Alternative B* is Fidelity's submitted Proposed Action. This alternative would analyze the complete implementation of Fidelity's Decker Mine East POD proposal including:

- construction, drilling, production and reclamation of federal CBNG wells
- use of existing compression and sales facilities
- CBNG produced water management using existing MPDES Permits for treated and untreated water discharge, previous approved impoundments, and beneficial uses

*Alternative C* would analyze the implementation of Fidelity's Decker Mine East POD proposal as submitted; while applying mitigating measures, not already part of the operator's proposal, as part of this alternative. The incorporation of mitigating measures identified during project review would avoid or reduce impacts to cultural, social and natural resources. Based on public comment and issues, Alternative C is the agencies' preferred alternative.

#### **2.1.1 Alternatives considered but eliminated from Detailed Analysis**

##### **Multiple Produced Water Management Options**

In this suggested alternative, produced CBNG water would be managed using means other than those proposed by Fidelity. Potential water management methods include, but are not limited to, injection, infiltration impoundments, evaporation ponds, land application and irrigation. Any produced water management plans and permits would need to be approved by BLM or the appropriate agency in consultation with affected surface owners. This alternative was eliminated from detailed analysis because the projected volumes of produced water from the project can be managed using existing MPDES Permits for discharge of treated and untreated water and used for beneficial purposes, such as livestock water and industrial purposes, as proposed by Fidelity. The analysis in this EA shows no unresolved conflicts resulting from the proposed water management approach. Therefore, analysis of multiple produced water management alternatives is not necessary to address impacts to water resources.

#### **2.2 DESCRIPTION OF THE ALTERNATIVES**

A comparison of the major components for the three alternatives is found in Table 2.5-1. A detailed description of each alternative follows.

##### **2.2.1 Alternative A—No Action**

There would be no BLM approved Decker Mine East POD actions. None of the federal wells and associated infrastructure, in the POD, would be constructed, drilled, completed, produced and reclaimed. This alternative would not affect the existing situation, producing fee and state wells and existing infrastructure. The entire federal portion of the Fidelity Decker Mine East POD project would be denied.

### **2.2.2 Alternative B—Fidelity’s Proposed Action; Decker Mine East POD, Federal Well & Infrastructure Development and Existing Water Management Options**

Fidelity’s proposed the Decker Mine East POD project area includes Master Drilling and Surface Use Plans, Water Management Plans, Cultural Resource Inventory Plans, Wildlife Monitoring and Protection Plans, Noxious Weed Management Plans, and other supporting information. The POD describes the project and best management practices designed to implement the project.

The analysis of the Decker Mine East project area, within Alternative B, includes the development and production of federal wells and infrastructure (14 federal wells, see Appendix A). Map 1.3-3 shows the Decker Mine East project boundary, existing and proposed well locations, access roads, pipelines for water and gas, overhead and underground power lines, produced water management options, and metering/compressor facilities.

Fidelity’s Proposed Action; Decker Mine East POD wells & infrastructure, existing sales and compression, and existing water management options include: BLM would approve the drilling, completing, production and reclamation of 14 federal wells. BLM would approve constructing associated infrastructure of access roads, flowlines, power lines, reclaiming disturbed areas, produced water management and the use of meter and compressor facilities. BLM would issue right-of-way (ROW) MTM98478 to Fidelity for “off-lease” facilities (a buried power line and buried gas and water line) for well 44-1891, on federal surface in the NW¼SW¼, Section 17, T. 9 S., R. 41 E., P.M.M. These 14 wells would be drilled and completed in the Dietz, Monarch, Carney and Wall coal zones. The average production life of the project wells is expected to be 10 to 20 years with final reclamation to be completed 2 to 3 years after plugging of the wells. Components of the proposed projects are listed in Chapter 2, Table 2.5-1.

#### Agreements

Fidelity Exploration and Production Company certifies that they have obtained Surface Damage Agreements from all parties directly affected by the Decker Mine East project. This includes the surface estate owners on whose land operations will take place.

Fidelity Exploration and Production Company certifies that they have obtained Water Well Mitigation Agreements from all parties directly affected by the Decker Mine East project. This includes owners of all wells or springs within one mile of Fidelity’s proposed operations. These agreements also include measure to remedy methane-related impacts and baseline and periodic monitoring.

#### Drilling

Fourteen CBNG federal wells would be drilled on 14 well sites (see Appendix A), with an approximate well density in the project area of two wells per 160 acres (2 wells, multiple coal seam completion, per 160 acres). A single vertical well would be drilled through the Carney, Monarch and Dietz coal seams. Anticipated depth of the wells would be from approximately 550 to 1,100 feet deep. The drilling and construction period is anticipated to begin fall, 2008.

A commingled well (monobore) is designed and completed to produce gas and water from two or more coal beds from a single well bore. Each well would be drilled by truck-mounted water well rigs using air and/or water, supplemented as needed by bentonite, polymer, and cedar fiber, and then drilled 40 to 50 feet below the bottom of the deepest target coal bed with steel casing cemented in place from the ground surface to total depth. Casing would be sized to accommodate a downhole pump capable to lift water at that depth and would typically be 7 inch in diameter. A cement bond log would be run to confirm proper cementing of the casing and to identify depth intervals of each potentially producing coal zone. The casing would then be perforated in each of the potentially producing coal zones. An acid/water solution would be pumped into the casing to break down residual drilling muds and cement in each perforated coal zone. Hydraulic stimulation would then be performed to further break down drilling muds and other fine-grained materials in the well bore. CBNG produced water would be trucked to drilling locations and between 8,000 and 16,000 gallons would be needed per well to support these completion activities. A production pump would be installed in the well, typically just above the lower producing coal, and initial production pumping would begin. CBNG production would occur by pumping groundwater from the coal seams,

thereby reducing hydrostatic pressure and causing the methane to become desorbed from the coal surface and flow to the wells. All wells capable of commercial production would be completed and produced and the associated infrastructure would be constructed and installed.

Drilling wastes including cuttings, water, native mud, and bentonite would be placed in the mud pit. Upon successful completion, the well would be shut-in pending installation of new gas gathering and processing facilities. The drilling rig would be released from the location and removed. The mud pit would be closed and reclaimed. Fluids, muds, and synthetic liners would be removed and properly disposed of within 90 days of completion of drilling. Residual fluids and muds would be allowed to dry before backfilling the pit and recontouring the ground surface. The pit would not be cut or trenched. The backfilled pit would be covered with a minimum of three feet of soil. Closed and reclaimed pits would be inspected periodically to determine if significant subsidence has occurred. If subsidence is noted, additional backfilling and recontouring would be performed.

#### Access

Vehicles would access the well sites by existing improved roads, two track trails or across undisturbed rangeland along a designated route. Access to federal wells would use approximately 0.1 miles of existing (all private surface), 6.44 miles of proposed (.4 miles federal surface and 4.7 miles private surface), two track roads and around 2.14 miles of existing (all private surface), less than 6.44 miles of proposed (all private surface), improved roads, including spot upgrades. Pipeline corridors would also be used as temporary roads for access to well sites. Additional culverts or low water crossings would be installed at ephemeral drainage crossings, if needed. Gravel or scoria needed for surfacing material would come from a pit owned and operated by Fidelity and permitted by Montana and Wyoming DEQ's.

The road and pipeline routes for the Decker Mine East project area are proposed as agreed to by the appropriate private surface owner or surface management agency (BLM). Location, design and construction of all new roads would be in accordance with the BLM Manual Section 9113 concerning road construction standards on projects subject to federal jurisdiction. Where possible, roads would serve as a common corridor for the gas, electric, and water. The project map (1.3-2) shows the project boundary, existing and proposed wells, access roads, pipelines (water and gas), power lines, and the central gathering/metering/water processing facilities in the project area. An approximately a 30 foot wide corridor of disturbance would be expected along the combined access, gas and water lines. An approximately 16 foot wide corridor of disturbance would be expected along the "access only" routes. These corridors would be disturbed by construction activities, and would be expected to be reclaimed within 1 year after a specific activity has been completed. The improved access routes would be reclaimed 2 to 3 years following the end of gas production.

Dust control measures would be applied on unpaved roads to minimize fugitive dust during construction and operations. Following well completion and production facility installation, travel to wells would normally be limited to one or two visits weekly. A light truck or utility vehicle would be used to check operations, read meters and provide infrastructure service. Service trips would be rescheduled during periods of wet weather that could cause damage to access routes. Routine road maintenance would occur on a year-round basis or as ground and site conditions permit. Existing roads would be maintained in the same or better condition as existed prior to the start of operations.

#### Well Sites

The 14 federal CBNG wells would be located at 14 sites, with one well drilled at each site. The 14 federal well sites would be split, with 13 locations on private surface/federal mineral and 1 location on BLM administered surface/federal mineral lease. Approximately one-third of an acre at each well site would be disturbed by vehicle traffic, drilling and completion operations, reserve pits and temporary storage of equipment. The well sites would not require construction of a well pad; however, blading may be needed to provide a level surface for the drill rig.

The Decker Mine East project area surface facilities would consist of a wellhead and an insulated, fiberglass well head cover (approximately 5 feet square by 4 feet tall) and an electrical panel all enclosed in

a three rail, welded fence (approximately 16 feet x 12 feet). The fenced area would be graveled while the area outside the fence would be reclaimed after installation of production equipment. Well production data would be collected from instrumentation located in a meter house near each well (approximately 6 feet x 12 feet x 6 feet). The well and meter houses would be painted a color to blend with the surrounding area. Following this interim reclamation, approximately ¼ acre or less per well site will remain disturbed during the production phase of the wells. Final reclamation would be 2 to 3 years following the end of gas production.

#### Power Lines

Overhead electricity would be brought into the project area by approximately 13 miles of existing lines along the Otter Creek Road and those constructed for the Decker Mine East POD private and state development. These lines would generally be located along access roads or on ROWs across open land. Approximately 0.81 miles of overhead line and 6 power drops are proposed for the project, 5 power drops are located on private surface and one power drop is located on BLM administered land. Electrical junction boxes would be installed where needed by the electric utility company and would be painted to blend with the surrounding environment.

Buried electrical lines would tie into the aerial power lines at a service tap or drop which typically would serve three well sites. Buried power lines would be installed parallel to access roads, in the common corridor. There would be approximately 7.4 miles of proposed buried electrical line (0.39 miles federal surface, 188 feet of which would be authorized by a ROW; 7.01 miles private surface) for this project.

Approximately a 10 foot wide corridor of disturbance would be expected along both the overhead and buried power lines. These corridors would be disturbed by construction activities, and would be expected to be reclaimed within 1 year after a specific activity has been completed. Final reclamation would be 2 to 3 years following the end of gas production.

#### Flowlines

A 4 inch plastic flowline to carry gas would be buried from each meter house to a battery/compressor site. One 4 inch plastic flowline would be buried, carrying produced water from each well site to a central collection point or surface discharge point. Approximately 14.56 miles (0.4 miles federal surface, 2,205 feet of which would be authorized by a ROW; 14.16 miles private surface) of these combined flowlines would be installed in the common corridor.

All 8 to 12 inch steel gas pipelines required to carry gas from each compressor site to the Symons Central Compressor Station have previously been installed by the Decker Mine East private and state development.

A 30 foot wide corridor of disturbance would be expected along the combined gas and water line routes. A 10 foot wide corridor of disturbance would be expected along the water or gas only routes. These corridors would be disturbed by construction activities, and would be expected to be reclaimed within one year after a specific activity has been completed. Final reclamation would be 2 to 3 years following the end of gas production.

#### Produced Water Management

CBNG produced water would be transported through buried plastic flowlines from each well site to the following water management options: (1) beneficially used for industrial uses (dust suppression) in the Spring Creek and Decker Coal Mines; (2) beneficially used by Fidelity for CBNG drilling, construction, and dust suppression; (3) beneficially used by livestock and wildlife; (4) treated via ion exchange and discharged to the Tongue River using Fidelity's existing MPDES discharge permit for treated water (MT0030724); and (5) untreated discharged to the Tongue River using Fidelity's existing MPDES direct discharge permit (MT0030457).

Beneficial use by the mines (1) is estimated to consume 205 to 455 gpm of water depending on the season. Next, treated discharge (4) would occur at a rate of 1,430 gpm. The use of treated discharges also requires the use of lined impoundments 34E-3490 and 12-3490 for incidental storage and bypass for treatment, plant

maintenance, and final water preparation prior to discharge. Finally, the direct discharge permit (MT0030457) (5) would be used to manage the remainder of the water, ensuring that the volume discharged is less than the permitted limits of 2,500 gpm from November through February, 2,375 gpm from March through June, and 1,600 gpm from July through October.

Beneficial use by Fidelity for drilling, construction and dust suppression (2) and the watering of livestock and wildlife (3) would occur; however, since this usage is variable, it is conservatively not included in the water balance forecast.

The Decker Mine East discharge points into the Tongue River are located in or near the main channel. There are two types of outfalls associated with this project. Under the direct discharge permit most outfall structures (001, 002, 003, 005, 007, 009, 010, 011, 012, 013, and 014) consist of a riprap pad surrounding the discharge pipe with a narrow riprap lined trench sloping into the channel area to prevent eroding the channel bank. Four outfalls under the direct discharge permit (004, 006, 008, and 016) have been modified to include an instream diffuser that extends the width of the streambed under low flow conditions, allowing these discharges to meet the definition of instantaneous mixing at the point of discharge. Treated water is discharged from one location, which is the same location that had been designated as 015 for the direct permit. This treated discharge is also via a diffuser.

Under the terms of MPDES permit MT0030457 a maximum of 1,600 gpm of untreated water can be discharged to the Tongue River from July-October; 2,500 gpm can be discharged from November to February, and 2,375 gpm can be discharged from March to June. The cumulative water balance for this alternative indicates that the maximum rate of untreated discharge will be 2,372 gpm during December of 2009. All discharges would comply with the requirements of the MPDES permit developed by the MDEQ.

Under the terms of MPDES permit MT0030724, a maximum of 1,700 gpm of treated water can be discharged to the Tongue River. From November 1 through March 1 the average monthly SAR and SC of the discharged water needs to be less than 5.0 and 1,500  $\mu\text{S}/\text{cm}$  respectively. From March 2 through October 31 the average monthly SAR and SC of the discharged water needs to be less than 3.0 and 1,000  $\mu\text{S}/\text{cm}$  respectively. There are also conditions in the permit which limit the levels of suspended solids and total nitrogen by season. The cumulative water balance indicates that this facility is anticipated to operate at 1,430 gpm, except for the summers of 2009 and 2010. During these summers the treated discharge would be at the permitted limit of 1,700 gpm.

The treatment facility is located 2.5 miles south-southeast of Decker Montana, Big Horn County; T. 9. S, R. 40 E., SE $\frac{1}{4}$ SE $\frac{1}{4}$ , Section 34. The facility covers an area of approximately 280 feet x 360 feet (2.2 acres), and is located on the south side of Badger Creek. Fidelity is using an ion exchange system for water treatment. Prior to entering the treatment system water is held at lined impoundment 34E-3490, which provides for a steady supply of water to the plant, and provides storage capacity in case plant maintenance is required. The treatment system replaces positively charged cations in the CBNG produced water (e.g. sodium, calcium and magnesium) with hydrogen ions obtained from hydrochloric acid (HCl). The addition of these hydrogen ions causes the treated water to have a low pH. This low pH is managed by post-treatment air stripping and/or the addition of a lime solution, or other suitable base to reduce the acidity. Lime also serves as a source of calcium which decreases SAR. This process typically removes 95% or more of the total salts from the water. Following treatment the water is held in lined pond 12-3490 so that the water can equilibrate with the atmosphere which allows pH to stabilize and precipitates to form prior to discharge to the Tongue River. In accordance with the MPDES permit, treated water may be blended with untreated water prior to discharge so long as the water quality requirements of the MPDES permit are met, and the untreated water does not exceed 23% of the total from November 1 through March 1 or 14% of the total from March 2 through October 31. All discharges would comply with the requirements of the MPDES permit developed by the MDEQ.

The ion exchange water treatment process which Fidelity is using causes a concentrated low pH Na-Cl type brine to be generated (~1% of the feed volume). This brine is neutralized on site with lime to maintain a pH above 6. This brine is currently transported by Kissack Water and Oil Services, Inc., a licensed waste

hauler, and is disposed of at Kissack's Kuehne injection well (operated under UIC permit #01-109), and Kissack's Hamm #1 injection well (operated under UIC permit #01-036). Both of these wells are permitted as Class I injection wells. Fidelity has also received approval from the MBOGC to convert an exploratory oil well in T. 9 S., R. 39 E., Sec 11 (Consolidated Coal 32 11-9-39; API# 25-003-22377) to a Class IID injection well. This well would inject into the Shannon Sandstone between 5,600 and 5,700 feet (~1.1 miles) below ground surface. The EPA has noted that so long as the corrosivity of the brine is neutralized "...it meets the regulatory definition of a Class II waste under 40 CFR 144.6(b)(1), and therefore, is considered suitable for injection in a Class II disposal injection well" (EPA, 2007). Fidelity still needs to sample the water in the Shannon to determine if the TDS of the injection zone is less than 10,000 ppm. If the TDS is less than 10,000 ppm an aquifer exemption will be needed prior to injection into this zone. Provided that the TDS of the Shannon is greater than 10,000 ppm, or that an aquifer exemption is obtained, and that the injection zone is sufficiently permeable, it is anticipated that Fidelity will use this well in the future to dispose of a mixture of neutralized brine and untreated CBNG production water.

Reservoir 34E-3490 is a lined impoundment located in a natural off drainage depression in T. 9 S., R. 40 E., SW $\frac{1}{4}$ SE $\frac{1}{4}$ , Section 34. 34E-3490 provides for approximately 13 acre-feet of storage. Reservoir 12-3490 is a lined impoundment located in a flat area located off drainage in T. 9 S., R. 40 E., SW $\frac{1}{4}$ NW $\frac{1}{4}$ , Section 34. 12-3490 provides for approximately 7 acre-feet of storage. Both 12-3490 and 34-3490 have been approved by MBOGC, and are lined with a 20-mil polyethylene liner with an 8-ounce geotextile underlayment. 12-inch anchor trenches are used to secure the liners. Monitoring of these impoundments is conducted in accordance with the requirements identified by MDEQ in MPDES permit MT0030724. These monitoring plans were developed to "ensure the natural quality of the ground water is not impaired by the infiltration of the CBNG produced water" (MPDES permit MT0030724, page 16).

#### Battery/Compressor Sites

Gas from the Decker Mine East wells would be transported from each meter house to existing field battery/compressor sites. The batteries/compressor sites include the Holmes 29 (MAQP #3335), formerly named Ranchoholme 29) and Decker 17 (MAQP #4066) batteries, and the existing sales battery, Symons Central Compressor Station (MAQP #3250).

Each battery would serve about 40 to 75 wells. Approximately two acres at each site has been disturbed by vehicle traffic, production operations, and temporary storage of equipment; enclosed by a barbed wire fence. One or two meter houses and up to four compressors are located at each battery. Meter houses and compressor buildings are painted to blend in with the surrounding area, and access roads to batteries and central facilities are surfaced with gravel. Final reclamation would be completed 2 to 3 years following the end of gas production.

#### Right-of-Way

ROW MTM98478, which is proposed to be issued to Fidelity for their Decker Mine East POD across federal, BLM administered land in the NW $\frac{1}{4}$ SW $\frac{1}{4}$ , Section 17, T. 9 S., R. 41 E., P.M.M., Big Horn County, Montana, would be for a buried poly gas line, buried poly water line, and 3-phase 0.48 kV buried power line and would be a total of 2,205 feet long and 50 feet wide, consisting of approximately 2.53 acres, more or less, with a total disturbed area of approximately 0.55 acre. The 2,205 feet of 4-inch gas line and 4-inch water line would be installed in a trench 18 to 36-inch wide and 5 to 8 feet deep, with the total disturbance approximately 10 feet in width consisting of approximately 0.51 acre. The 188 feet of buried 0.48 kV power line would be plowed in 24 inches deep in a trench 4 inches wide with the total disturbance approximately 10 feet in width consisting of approximately 0.04 acre, alongside and 10 feet from the pipeline trench to the drop on the overhead power line. When the project is completed the underground pipelines would be cleaned, disconnected, and then abandoned in place and the underground electric line would be disconnected and also abandoned in place to avoid additional disturbance. The standard stipulations for cultural and/or paleontological resource protection and toxic substances would be made a part of the ROW grant, as would the standard stipulations that all activities associated with the ROW would be conducted within the authorized limits of the grant. The applicant would be responsible for weed control on disturbed areas within the limits of the ROW. There would be no construction or routine maintenance when the soils are too wet. Only the minimum amount of vegetation would be removed, the topsoil would

be conserved, and the appropriate seed mix would be used for reclamation. The stipulation to suspend or limit operations during periods of extreme fire would be in effect. The holder would coordinate with the parties holding authorized rights on the adjacent and affected lands. Prior to termination the holder would contact the authorized officer for a pre-termination conference. Fidelity would construct, operate, and maintain the pipelines and power line within this ROW in strict conformity with their ROW application and Decker Mine East POD, which will be made a part of the grant. Any relocation, additional construction, or use that is not in accordance with the approved plan of development and ROW grant shall not be initiated without the prior written approval of the authorized officer. The right-of-way would be granted under Section 28 of the Mineral Leasing Act of 1920, as amended (MLA) and subject to the terms and conditions in 43 CFR 2880. The right-of-way would be subject to cost recovery and rental and it would be issued for a term of twenty years and be renewable. The ROW would be subject to the stipulations in Appendix D. No temporary work areas would be required. The right-of-way would be monitored for construction, use, and reclamation.

#### Reclamation

Surface disturbances would be reclaimed according to the surface use agreements, BLM requirements, and MDEQ storm water construction permits and storm water pollution prevention plans. Reclamation would occur in areas where surface disturbing activities have been completed or concurrent with other operations in the project area. Typically, disturbed areas not needed for production operations or during final reclamation, would include: removal of facilities, cleaning and abandonment of pipe and power lines, re-contoured to resemble the surrounding terrain, stored topsoil spread over the re-contoured area, necessary erosion control measures installed, disturbed areas seeded with certified weed-seed free mix, agreed upon with the surface owner and completed within one year after a specific activity has been completed. Seeding typically would occur in the fall of each year, after September 15. However, if spring seeding is selected, it will be completed by May 15. Soil fertility evaluations would be conducted and soil amendments added to assist in timely germination and re-establishment of vegetation, as needed. Finally, casing would be cut off 4 feet below ground surface with a metal plate affixed to the top providing operator's name, well number, location, and federal lease number. Final reclamation would be completed approximately 2 to 3 years following the end of gas production.

A detailed description of design features, construction practices, water management strategies and reclamation measures associated with Alternative B, can be found in the Master Surface Use Plan, Drilling Plan and Water Management Plan in the Decker Mine East POD and its individual APDs.

#### **2.2.3 Alternative C—Fidelity's Proposed Action; Decker Mine East POD, Federal Well & Infrastructure Development and Existing Water Management Options, with Additional Mitigation: Agency's Preferred Alternative**

The analysis of the Decker Mine East project area, within Alternative C, includes the development and production of federal wells and infrastructure (14 federal wells, see Appendix A). Map 1.3-3 shows the Decker Mine East project boundary, existing and proposed well locations, access roads, pipelines for water and gas, overhead and underground power lines, produced water management options, and metering/compressor facilities.

Fidelity's Proposed Action; Decker Mine East POD wells & infrastructure, existing sales and compression, and existing water management options, with additional mitigation include: BLM would approve the drilling, completing, production and reclamation of 14 federal wells. BLM would approve constructing associated infrastructure of access roads, flowlines, power lines, reclaiming disturbed areas, produced water management and the use of meter and compressor facilities. BLM would issue ROW MTM98478 to Fidelity for "off-lease" facilities (a buried powerline and buried gas and water line) for well 44-1891, on federal surface in the NW¼SW¼, Section 17, T. 9 S., R. 41 E., P.M.M., as described in Alternative B. These 14 wells would be drilled and completed in the Dietz, Monarch, Carney and Wall coal zones. The average production life of the project wells is expected to be 10-20 years with final reclamation to be completed 2 to 3 years after plugging of the wells. Components of the proposed projects are listed in Chapter 2,

### Agreements

Surface Damage and Water Well Mitigation Agreements would be managed in the same manner as described in Alternative B.

### Drilling

Drilling operations would be managed in the same manner as described in Alternative B.

### Access

Access would be managed in the same manner as described in Alternative B.

### Well Sites

Well sites would be managed in the same manner as described in Alternative B.

### Power Lines

Power lines would be managed in the same manner as described in Alternative B.

### Flowlines

Flowlines would be managed in the same manner as described in Alternative B.

### Produced Water Management

Produced water would be managed in the same manner as described in Alternative B.

### Battery/Compressor Sites

The Battery/Compressor Sites would be managed in the same manner as described in Alternative B.

### Right-of-way

The ROW would be the same as in Alternative B.

### Reclamation

Reclamation would be managed in the same manner as described in Alternatives B.

### Field Inspections

The Decker Mine East POD was modified as a result of the interdisciplinary review and field visits. During field “on-site” visits, each of the proposed federal locations and areas of proposed surface disturbance were inspected to ensure that potential impacts to natural resources would be minimized. The specific changes identified for these areas were as follows:

- Corridor, access and wells 22-1891, 23-1891, were moved to avoid sharp tail grouse NSO.
- Corridor, access, and well 13-1791 were moved to mitigate erosion concerns and resource concerns.
- Corridor for water, underground power, power drop and gas line to location 33-1791 were rerouted to follow the Bitter Creek gas line running to Decker 17 compressor. Access road was rerouted to run from location 33-1791 to 42-1791 to mitigate erosion concerns, lesson disturbance, and resource concerns.
- Overhead power to location 23-1891 was relocated to avoid sharptail grouse NSO.
- Leafy spurge was identified on location 44-1891 requiring treatment strategies and management.

### Additional Mitigating Measures

The following additional mitigating measures are part of Alternative C and would be included as Conditions of Approval with approved permits (see Appendix G for the entire, Alternative C, Additional Mitigating Measures– the stipulations for ROW MTM98478 can be found in Appendix D). These mitigating measures would apply to the federal wells, facilities associated with federal leases and facilities completed for the development and production of federal wells. As a result of inspections or monitoring, BLM can impose necessary mitigation measures not previously identified or rescind mitigation measures that are not necessary.



1. The operator shall notify BLM (406-233-2800) at least 48 hours before beginning construction activities associated with the sites listed below. BLM shall immediately notify the Northern Cheyenne Tribe about construction activities. The company shall have its consulting archaeologist or an archaeologist holding a valid BLM Cultural Resources Permit at the sites listed below during construction. The operator shall provide the opportunity to the Northern Cheyenne Tribe for a qualified cultural resources specialist to monitor construction in the locations listed below for the Federal portion of the Decker Mine East Area. The results of monitoring shall be reported in writing by the Consulting Archaeologist and Tribe to BLM within 14 days after completion of monitoring activities.

The purpose of the monitoring is to identify any cultural resources that may be discovered by construction activities. The archaeologist or cultural resources specialist may temporarily halt construction within 300 feet (100 meters) of the find until it can be evaluated by a BLM Cultural Resources Specialist. The operator shall immediately notify BLM (406-233-2800) upon the discovery of cultural resources. The BLM authorized officer shall respond to the operator within the five working days as per Condition of Approval No. 5. The same conditions in Condition of Approval No. 5 would apply for buried cultural resources encountered during monitoring. Required Monitoring Decker Mine East Project Area:

2. Construction and drilling timing restriction for grouse: No construction and drilling activities from March 1 to June 15 in grouse nesting habitat within two miles of an active lek would apply for the following wells, unless BLM grants an exception (see Appendix K):
  - Decker Mine East Project Area: Timing restrictions would apply for all wells.
3. Construction and drilling timing restriction for raptor nests active within the past two years: Construction and drilling activities are prohibited within 0.5 miles of a nest from March 1 to August 1, on the following wells, unless BLM grants an exception (see Appendix K):
  - Decker Mine East Project Area: 33-1791, 24-1791, 13-1791, 44-1891, 22-0791
4. Leafy spurge was identified on location 44-1891 requiring treatment strategies and management. Treatment prior to construction and undercarriage washing of construction equipment is required.
5. No Surface Occupancy for coal lease – In order to drill wells a modification shall be submitted to the BLM for the No Surface Occupancy stipulation. This lease stipulation does not apply to the operation and maintenance of production facilities. If modification is approved by authorized officer it will be determined that portions of Decker Mine's existing or planned operations have been completed or not needed. Those wells and infrastructure that modification would be needed for, include:
  - 23-1891, 44-1891, 43-1891, 14-1891, 13-1791, 24-1791, 44-1791, and 33-1791
6. The reserve pit must be lined with an impermeable liner. An impermeable liner is any liner having permeability less than  $10^{-7}$  cm/sec. The liner must be installed so that it will not leak and must be chemically compatible with all substances that may be put in the pit. Liners made of any man-made synthetic material must be of sufficient strength and thickness to withstand normal installation and pit use. In gravelly or rocky soils, a suitable bedding material such as sand must be used prior to installing the liner.
7. In order to ensure compliance with Onshore Order #7 the following mitigating measures would apply:
  - Water from federal wells cannot be discharged into lined impoundments unless the appropriate State permits are in place.
  - The operator will comply with the groundwater monitoring plan requirements for lined impoundments established by the MDEQ in the MPDES permits.

- Water from federal wells will not be discharged to surface waters unless a valid MPDES permit is in place for that discharge.
- Residual brine, which results from the treatment of water from Federal wells will not be moved off site and injected until a Sundry Notice and a copy of the applicable UIC permit(s) are submitted to, and approved by, the BLM.
- Residual brine which results from the treatment of water from Federal wells will not be discharged into an on-site lined pit for solidification unless the appropriate state permits are in place and a Sundry Notice, including a copy of the applicable MBOGC permit(s), and all applicable informational requirements under Onshore Order #7, are submitted to, and approved by, the BLM.

A detailed description of design features, construction practices, water management strategies and reclamation measures associated with Alternative C, can be found in the Master Surface Use Plan, Drilling Plan and Water Management Plan in the Decker Mine East POD and its individual APDs.

## **2.3 CUMULATIVE ACTIONS**

The MT FEIS analyzed long-term cumulative effects of CBNG activity throughout the region and disclosed the general types of effects to be considered in more detail during the review of site-specific CBNG proposals, such as the Fidelity's Decker Mine East POD. Cumulative effects are the result of impacts from other past, present, or reasonably foreseeable future actions that would overlap in time and locale with the direct effects of the proposed action or alternatives, thus resulting in "cumulative effects" distinctly different (greater or less) than the direct effects. The actions listed below have been considered as potential contributors (relevant) to cumulative effects with the proposed project. A specific cumulative effects analysis for each resource is presented in Chapter 4 by Alternative.

### **2.3.1 Relevant Past and Present Actions**

#### Tongue River Reservoir

The Tongue River Reservoir, located within a few miles of the project area, was constructed between 1937 and 1940, modified in 1999, and is approximately 79,000 acre feet in size. The reservoir is about 12 miles long and 1 mile wide, with an average depth of 20 feet; covering around 3,600 acres. The Tongue River Reservoir is a major recreation site for fishing and boating in Southeast Montana; however the reservoir serves as flood protection and irrigation storage. The impact of the Tongue River Reservoir, as well as its location in proximity to the Decker Mine East POD, may cause cumulative effects to social/economic, wildlife, ground and surface water, cultural, recreation/visuals, and aquatic resources. See Chapter 4, Environmental Consequences, for cumulative effects relating to each resource.

#### Coal Mines

The Decker Mine is a surface coal mine owned jointly by the Kiewit Company and Kennecott Energy Company and operated by Decker Coal Company, a Kiewit subsidiary. The East Decker Mine is located immediately west of the Decker Mine East project area and the Decker West Mine is located across the Tongue River. The mining method consists of open pit strip mining. Overburden and interburden are removed by draglines, shovels and trucks, front-end loaders and trucks or dozers. The permitted mine operations area is approximately 11,400 surface acres. The average annual coal production is 10 million short tons. The activities of the Decker Coal Mine, as well as its location in proximity to the POD project area, may cause cumulative effects to social/economics, aquatics, wildlife, surface and ground water, recreation/visuals, oil and gas, cultural, coal, and air resources. See Chapter 4, Environmental Consequences, for cumulative effects relating to each resource.

The Spring Creek Mine is a surface coal mine owned and operated by Spring Creek Coal Company. The mine is located directly north of the Decker West Mine. The mining method consists of open pit strip mining. Overburden and interburden are removed by draglines, shovels and trucks, front-end loaders and trucks or dozers. The permitted mine operations area is approximately 7,000 surface acres. The average annual coal production is 15.75 million short tons. The activities of the Spring Creek Mine, as well as its location in proximity to the POD project area, may cause cumulative effects to social/economics, wildlife,

oil and gas, coal, recreation/visuals, cultural and air resources. See Chapter 4, Environmental Consequences, for cumulative effects relating to each resource.

#### Railroad

The Decker area railroad line was constructed to support the coal shipping activities of the Decker and Spring Creek Coal mines. The rail line runs from the Spring Creek Coal mine south until it intersects the main rail line located in Sheridan, Wyoming. The rail line is located within a few miles of the Decker Mine East project boundary. The Spring Creek Coal Mine has approximately 7 miles of the rail line within their mine permit boundary. Spring Creek ships around 15.75 million short tons of coal per year, on approximately three trains a day or 1,000 per year. The Decker Coal Mine has 7.9 miles of rail within the permit boundary on two rail line loops. Decker ships around 5 million tons of coal per year, on approximately 450 to 500 trains a year. Additionally, there are 2.5 miles of rail not incorporated into either of the coal mine permit boundaries; bring the approximate total of rail in the area to 17.5 miles. The activities of the Decker area railroad, as well as its location in proximity to the POD project area, may cause cumulative effects to social/economics, wildlife, weeds, cultural and air resources. See Chapter 4, Environmental Consequences, for cumulative effects relating to each resource.

#### CBNG Development

Montana: According to BLM's Miles City Field Office and the MBOGC records and websites, on June 9, 2008, approximately 1,611 CBNG wells have been drilled in Montana. Status of these wells includes drilling, shut-in, producing and plugged/abandoned. Currently 856 CBNG wells in Montana are considered to be in production. This development is found near the Decker, Montana area; primarily in the Tongue River and Hanging Woman drainages.

At this time, Montana's approved/producing CBNG wells are operated by Fidelity Exploration & Production Company and Pinnacle Gas Resources, Inc. These wells are located either in the CX Field, operated by Fidelity, adjacent to the CX Field or near the Hanging Woman drainage, operated by Pinnacle. CBNG projects (PODs) in Montana include the Tongue River, Badger Hills & Amendment Fee/State, Dry Creek, Fidelity Coal Creek & Amendment Fee/State, Pinnacle Coal Creek Field, Deer Creek North & Amendment Fee/State, Pond Creek Fee/State, East Decker Mine Fee/State, Dietz Fee/State, Forks Ranch Fee/State, Pinnacle Deer Creek Fee, Castle Rock-Stevens Fee/State, Hellers Peak Fee/State, and Waddle Creek Fee/State. The CBNG wells are completed in the Smith, Dietz 1, Dietz 2, Dietz 3, Monarch, Carney, Wall and Flowers-Goodale coal seams; either as a single well per coal seam or commingled with several coal seams. The activities of the CBNG development and its location in proximity to the Decker Mine East project area may cause potential cumulative effects to social/economic, wildlife, ground and surface water, air, cultural, weeds, recreation/visuals, coal, oil and gas and aquatic resources. See Chapter 4, Environmental Consequences, for cumulative effects relating to each resource.

Wyoming: According to the BLM's Buffalo Field Office and the WOGCC website, on June 9, 2008, approximately 3,089 CBNG wells are producing in Wyoming's Upper Tongue River Basin. Wyoming's CBNG well's, used for this analysis, were derived from the following Townships: T. 57 N., R. 78-85 W. & T. 58 N., R. 78-85 W. The Wyoming CBNG development and production, in proximity to the Decker Mine East project area may cause potential cumulative effects to social/economic, wildlife, surface water, air, cultural, weeds, oil and gas and aquatic resources. See Chapter 4, Environmental Consequences, for cumulative effects relating to each resource.

#### Livestock Grazing

Throughout the Decker Mine East project area and the overall Tongue River drainage, over 100 years of livestock grazing has had a fundamental effect on rangeland and riparian ecology. Large herds of cattle, horses and sheep have historically trailed through the area and grazed season-long. Ecological effects have occurred through overgrazing along riparian areas, sensitive upland habitats and key wildlife areas. Recent effects have occurred through fencing and the establishment of pasture rotations, as well as livestock water developments permitting grazing in areas typically too arid for livestock use. Livestock grazing in proximity to the Decker Mine East project area may cause potential cumulative effects to social/economic,

wildlife, surface water, cultural, weeds, soils, vegetation and aquatic resources. See Chapter 4, Environmental Consequences, for cumulative effects relating to each resource.

**2.3.2 Reasonably Foreseeable Future Actions**

The BLM 1985 Powder River RMP/EIS as amended by the MT FEIS contains Reasonably Foreseeable Development and Reasonable Foreseeable Future Actions scenarios. The scenarios prepared for the amendment estimated that approximately 26,000 federal CBNG wells would be drilled throughout the life of the plan (page MIN-29). The 14 proposed wells analyzed in this document are part of the 26,000 wells predicted in the MT FEIS. Additionally, the MT FEIS predicts that an additional 200 conventional oil and gas wells would be drilled in Big Horn County in the next 20 years.

Future CBNG drill sites would most likely be in proximity to established production, or would offset dry holes to improve interpretation of structural geology. Additional wells could be drilled and produced within the Montana and Wyoming’s portions of the Powder River Basin. At this time, the following PODs in Montana and Wyoming have been proposed or are close to submission and would be considered relevant in a cumulative effects analysis:

Montana (entire State) - Badger Hills Amendment Federal, Coal Creek Amendment Federal, Black Eagle Butte Fee/State, Deer Creek North Federal, Corral Creek, Pond Creek Federal, Forks Ranch Federal

Wyoming (T. 57 N., R. 78-85 W. & T. 58 N., R. 78-85 W.) - Quarter Circle 9 Beta, Water Gap, Peterson Ext., Badger Creek Add, Cabin Creek phase IV, Cabin Creek phase V, Dow 2, Sales 14, Cabin Creek phase VIII, Cabin Creek phase VI

These PODs would account for approximately 160 APD’s in Montana and 400 APD’s in Wyoming. The Montana and Wyoming CBNG expansion and the location in proximity to the Decker Mine East project area may cause potential cumulative effects to social/economic, wildlife, ground and surface water, air, cultural, weeds, recreation/visuals, coal, oil and gas and aquatic resources. See Chapter 4, Environmental Consequences, for cumulative effects relating to each resource.

It is also reasonably foreseeable that some wells would be plugged and abandoned, and that associated sites would be reclaimed. Based on the predicted 10 percent ratio of future well abandonment to future drilling, (MT FEIS page MIN-29), one of the proposed Fidelity Decker Mine East wells would be dry holes within 20 years, and would count toward the total of 2,600 anticipated dry holes Montana-wide over the same time period.

**2.3.2-1 Future rate of CBNG drilling**

<b><u>RFD/RFFA area</u></b>	<b><u>Number of wells predicted in the next 20 years</u></b>	<b><u>Number of wells drilled to date</u></b>
Statewide	26,000 wells	1611
County (BH, RB) area*	3,500-9,800 wells	1443

\*BH = Big Horn, RB = Rosebud

**Spring Creek Coal Mine Expansion**

On March 7, 2005, the BLM received an application to lease the Federal coal adjacent to the Spring Creek Coal Company (SCC) mine. This expansion project is located between the West Decker and Spring Creek Mines. The tracts, which herein will be referred to as the Lease by Application (LBA) tracts, was assigned case number MTM94378. The LBA tract includes approximately 1,207.5 acres with an estimated 151.3 million tons of in-place coal and an estimated 121.4 million tons of recoverable Federal coal. The Spring Creek Coal Mine Expansion and its location in proximity to the Decker Mine East project area may cause potential cumulative effects to social/economics, wildlife, recreation/visuals, oil and gas, coal, cultural and air resources. See Chapter 4, Environmental Consequences, for cumulative effects relating to each resource.

### Tongue River Railroad

On October 9, 2007, the Surface Transportation Board issued a decision regarding the Final Supplemental Environmental Impact Statement for the Tongue River Railroad Company's (TRRC) to allow rail line construction and operation in Rosebud and Big Horn Counties, Montana. The document analyzed the 17.3 mile "Western Alignment" route, which had been preceded by two related applications that were considered and approved by the Board in 1986 and 1996, respectively. The Western Alignment is an alternative route for the southernmost portion of the 41-mile Ashland to Decker alignment; known as the Four Mile Creek Alternative. The Western Alignment bypasses the Four Mile Creek alignment, which is generally located from the Birney Road (Hwy 566) and the Tongue River Canyon junction, running west to Hwy 314, then south to the Decker Mine. The Western Alignment would continue south along the Tongue River on the ridge, but paralleling the river and ending around the Spring Creek Mine area. At this time no construction operations have begun. The Decker Mine East project area is within approximately 5 miles of the southern sections on the proposed TRRC Four Mile Creek and Western Alignment routes. The Tongue River Railroad approved Western Alignment route and its location in proximity to the Decker Mine East project area may cause cumulative effects to social/economic, wildlife, surface water, air, cultural, recreation/visuals, weeds and aquatic resources. See Chapter 4, Environmental Consequences, for cumulative effects relating to each resource.

### **2.3.3 Potential Future Actions**

The following potential future actions are assumed and too vague to be considered in this document's cumulative effects analysis. These actions will not escape a NEPA analysis; rather when they are proposed or known by the BLM, then they will be considered in a cumulative effects analysis. This would include the following actions:

- Wolf Mountain Coal, Inc.
- St. Mary's CBNG PODs/APDs
- Otter Creek Coal Tract Development
- Fidelity Exploration and Development CBNG PODs/APDs
- Pinnacle Gas Resources, Inc., CBNG PODs/APDs
- Crow Tribe CBNG Mineral Development
- Montana & Wyoming CBNG PODs currently not proposed
- Young's Creek Coal Mine

### **2.4 PREFERRED ALTERNATIVE IDENTIFICATION**

The BLM has identified *Alternative C—Fidelity's Proposed Action; Decker Mine East POD, Federal Well & Infrastructure Development and Existing Water Management Options, with Additional Mitigation*, as its Preferred Alternative.

### **2.5 COMPARISON OF ALTERNATIVES**

Table 2.5-1 compares the major components of the three alternatives.

**Table 2.5-1 Fidelity Decker Mine East Project Area - Comparison of Alternatives**

<b>Project Component</b>	<b>Alternative A No Action</b>	<b>Alternative B Proposed Action</b>	<b>Alternative C Preferred Alternative</b>
	No approvals would be issued for the POD, the existing situation would continue and no federal wells or associated infrastructure would be constructed. The POD proposed by Fidelity would be denied in their entirety and the landscape would not be further altered.	Fidelity's Proposed Action implementation; including Decker Mine East POD, Federal Well & Infrastructure Development and Existing Water Management Options.	Fidelity's Proposed Action implementation; including Decker Mine East POD, Federal Well & Infrastructure Development and Existing Water Management Options, with Mitigating measures not already part of the operator's proposal.
<b>Well Drilling Activities:</b>			
Number and land status of CBNG wells in the Decker Mine East Project Area	No approval would be received for any of the 14 proposed applications to drill.	<ul style="list-style-type: none"> <li>• 14 new federal wells on 14 locations, 4.6 acres</li> </ul>	Same as Alternative B.
Drilling Actions	No drilling actions	<ul style="list-style-type: none"> <li>• 14 federal CBNG wells drilled to depths of 496 feet to 1,029feet</li> <li>• A single vertical well would be drilled into the Wall, Carney, Monarch and Dietz coal seams</li> <li>• Air and/or fresh water (including coal seam water) used in drilling</li> <li>• Steel casing cemented from ground surface to approximately 40 to 50 feet below the base of the lowest coal seam</li> <li>• Anticipated drilling period of 3 days per well</li> </ul>	Same as Alternative B.

<b>Project Component</b>	<b>Alternative A No Action</b>	<b>Alternative B Proposed Action</b>	<b>Alternative C Preferred Alternative</b>
Disposal of wastes	No waste would be generated.	<ul style="list-style-type: none"> <li>• 14 federal CBNG wells at 14 locations with two 15'L x 6'W x 15'D feet reserve pits</li> <li>• Reserve pits fenced</li> <li>• Fluids in the pits removed and/or used for well drilling</li> <li>• Wastes contained onsite and disposed of at the Sheridan landfill</li> <li>• Chemical "porta-potties" used</li> </ul>	Same as Alternative B.
<b><i>Production Support Facilities:</i></b>			
Field Battery Sites and Sales Battery Site (compressor sites)	No new construction.  Existing Batteries: <ul style="list-style-type: none"> <li>• Decker #17 Battery, Ranchholmes #29 Battery</li> </ul> 1 Existing Sales Battery: <ul style="list-style-type: none"> <li>• Symons Central Compressor Station</li> </ul>	Existing Batteries: <ul style="list-style-type: none"> <li>• Decker #17 Battery, Ranchholmes #29 Symons Central Compressor Station</li> </ul>	Same as Alternative B.
Gas & Water Pipelines	No new construction.	<ul style="list-style-type: none"> <li>• 14.56 miles flowline (0.39 miles federal surface, 14.16 miles private surface)</li> <li>• No flowline is outside the common corridor</li> </ul>	Same as Alternative B.

Electric Lines	No new construction.	<ul style="list-style-type: none"> <li>• 2.09 miles new overhead (all private surface outside corridors)</li> <li>• 7 power drops</li> <li>• 4.5 miles existing overhead (private surface)</li> <li>• 1 mile of existing overhead (BLM surface)</li> <li>• 7.4 miles of underground (0.39 miles federal surface; 7.01 miles private surface)</li> <li>• No underground powerline is outside the common corridor</li> </ul>	Same as Alternative B.
<b>Access:</b>			
Road construction and use	Road use would reflect the current situation.	<ul style="list-style-type: none"> <li>• Existing two-track: 2.14 miles (all private surface)</li> <li>• Proposed two-track: 6.44 miles (all private surface)</li> <li>• Existing improved road/spot upgrades: 2 miles (all private surface)</li> <li>• Proposed improved road/spot upgrades: 1.4 miles (private surface)</li> <li>• Proposed improved road/spot upgrade: 0.39 miles (BLM surface)</li> </ul>	Same as Alternative B.
<b>Produced Water Management:</b>			
Maximum discharge of untreated water to the Tongue River via MPDES Permit # MT-0030457 (1,600-2,500 gpm permitted)	1,482 gpm	2,372 gpm	Same as Alternative B.
Maximum discharge of treated water to the Tongue River via MPDES Permit # MT-0030724 (1,700 gpm permitted)	1,430 gpm	1,700 gpm	Same as Alternative B.



<b>Project Component</b>	<b>Alternative A No Action</b>	<b>Alternative B Proposed Action</b>	<b>Alternative C Preferred Alternative</b>
Additional Approved and/or Existing Water Management Options	<ul style="list-style-type: none"> <li>• Beneficial use in the Spring Creek and Decker Coal Mines</li> <li>• Beneficial use for CBNG drilling, construction, and dust suppression</li> <li>• Beneficial use by livestock and wildlife</li> </ul>	Same as Alternative A.	Same as Alternative A.
<b>Reclamation:</b>			
Reclamation Measures	No action would require no reclamation.	<ul style="list-style-type: none"> <li>• Reclamation activities conducted in accordance with the surface owner agreements, the BLM specifications, MDEQ storm water construction permits and storm water pollution prevention plans.</li> <li>• Disturbed areas seeded with a certified seed mix agreed to by the BLM and/or the surface owner.</li> </ul>	Same as Alternative B.

<b>Project Component</b>	<b>Alternative A No Action</b>	<b>Alternative B Proposed Action</b>	<b>Alternative C Preferred Alternative</b>
Reclamation Timeframes	No action would require reclamation.	<ul style="list-style-type: none"> <li>• Reclamation in areas where surface disturbing activities have been completed or completed concurrently while other operations are occurring in the project area.</li> <li>• Reclamation within 1 year after a specific activity has been completed.</li> <li>• Seeding in the fall of each year, after September 15, however, if spring seeding is selected will be completed by May 15.</li> <li>• Final reclamation completed approximately 2 to 3 years following the end of gas production.</li> </ul>	Same as Alternative B.
<b><i>Monitoring Plans:</i></b>			
Air Quality	None required.	Per MDEQ requirements for testing to demonstrate compliance with emission limits and Annual Emission Inventories.	Same as Alternative B.
Wildlife	None required.	Implementation of the Wildlife Monitoring and Mitigation Plan.	Same as Alternative B.
Soils	None required.	Sites would be monitored during various stages of development and reclamation to ensure erosion and impacts are limited.	Same as Alternative B.

<b>Project Component</b>	<b>Alternative A No Action</b>	<b>Alternative B Proposed Action</b>	<b>Alternative C Preferred Alternative</b>
Noxious Weeds	None required	Implementation of the Noxious Weed Control Plan.	<ul style="list-style-type: none"> <li>• Same as Alternative B.</li> <li>• Sites will be monitored for weed infestations within the project area, reported and treated once identified.</li> <li>• Wash stations will be set up and used by all equipment entering and leaving infestation areas.</li> </ul>
Surface Water Quality	Per MDEQ MPDES requirements	Same as Alternative A.	Same as Alternative A.
Groundwater Levels	Per MBOGC Order 151-2008	Same as Alternative A.	Same as Alternative A.