

Statement of Basis

FACILITY: Absaloka Mine South Extension
PERMIT NO.: MT-0030783

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Background Information:

Westmoreland Resources, Inc. (WRI) initiated an expansion of its existing Absaloka Mine coal mining operations in the State of Montana in 2009 onto Indian country lands within the exterior boundaries of the Crow Indian Reservation. Expansion of the mining operations into Indian country required issuance of Clean Water Act, Section 402 National Pollutant Discharge Elimination System (NPDES) permit by the EPA (Environmental Protection Agency) for discharges to waters of the United States associated with the mining operations in Indian country. That permit became effective on May 1, 2009, and is set to expire at midnight on March 31, 2014. This permit reauthorizes WRI to discharge pollutants to Waters of the US from the active mining area and mine drainage from reclamation areas, brushing and grubbing areas, topsoil and stockpiling areas, and re-graded areas in accordance with the discharge locations, effluent limitations, monitoring requirements, and other conditions as prescribed in the permit.

Prior to the issuance of the previous NPDES permit, the WRI coal mine expansion was deemed as a "new source coal mine" subject to New Source Performance Standards. As such, EPA's issuance of an NPDES permit to this "new source" required compliance with the National Environmental Policy Act (NEPA) and implementing regulations. EPA served as a cooperating agency with the joint lead agencies, the Bureau of Indian Affairs and the Montana Department of Environmental Quality, for the preparation of an Environmental Impact Statement (EIS). The final EIS was published in the Federal Register on March 21, 2008, and is available as part of the Administrative Record for this permit.

Receiving Waters:

The prior issuance of this permit authorized mine drainage from the Absaloka Mine South Extension directed to 24 outfalls. Since the 2009 issuance of the permit, the outfall locations have changed, but not significantly. Both the 2009 permit and this permit reissuance allow for outfall locations to be combined or deleted or moved up to 1,000 feet to accommodate conditions in the field, but new outfalls may not added without modifying the permit. The following outfall locations reflect the locational data provided

by Westmoreland, Inc. as of February 4, 2014. Several of the outfall locations have been moved less than 1,000 feet since the 2009 issuance of the permit, and these data reflect those changes.

Outfall locations as of February 4, 2014, and subsequently authorized under this permit:

OUTFALL NO.	LATITUDE	LONGITUDE	RECEIVING WATER
1	N 45° 45' 42"	W 107° 02' 36"	MIDDLE FORK SARPY CREEK
2	N 45° 45' 24"	W 107° 02' 19"	MIDDLE FORK SARPY CREEK
3	N 45° 45' 21"	W 107° 02' 15"	MIDDLE FORK SARPY CREEK
4	N 45° 45' 15"	W 107° 02' 12"	MIDDLE FORK SARPY CREEK
5	N 45° 45' 8"	W 107° 01' 53"	MIDDLE FORK SARPY CREEK
6	N 45° 45' 3"	W 107° 02' 18"	MIDDLE FORK SARPY CREEK
7	N 45° 45' 19"	W 107° 02' 25"	MIDDLE FORK SARPY CREEK
8	N 45° 45' 27"	W 107° 02' 35"	MIDDLE FORK SARPY CREEK
9	N 45° 45' 41"	W 107° 02' 41"	MIDDLE FORK SARPY CREEK
10	N 45° 44' 50"	W 107° 03' 36"	UNNAMED EPHEMERAL TRIBUTARY TO SARPY CREEK
11	N 45° 44' 47"	W 107° 04' 01"	UNNAMED EPHEMERAL TRIBUTARY TO SARPY CREEK
12	N 45° 44' 49"	W 107° 04' 03"	UNNAMED EPHEMERAL TRIBUTARY TO SARPY CREEK
13	N 45° 44' 51"	W 107° 04' 24"	UNNAMED EPHEMERAL TRIBUTARY TO SARPY CREEK
14	N 45° 44' 52"	W 107° 04' 48"	UNNAMED EPHEMERAL TRIBUTARY TO SARPY CREEK
15	N 45° 45' 13"	W 107° 04' 12"	UNNAMED EPHEMERAL TRIBUTARY TO SARPY CREEK
16	N 45° 45' 12"	W 107° 04' 02"	UNNAMED EPHEMERAL TRIBUTARY TO SARPY CREEK
17	N 45° 45' 16"	W 107° 04' 05"	UNNAMED EPHEMERAL TRIBUTARY TO SARPY CREEK
18	N 45° 45' 25"	W 107° 04' 10"	UNNAMED EPHEMERAL TRIBUTARY TO SARPY CREEK
19	N 45° 45' 28"	W 107° 04' 24"	UNNAMED EPHEMERAL TRIBUTARY TO SARPY CREEK
20	N 45° 45' 32"	W 107° 04' 26"	UNNAMED EPHEMERAL TRIBUTARY TO SARPY CREEK
21	N 45° 45' 36"	W 107° 04' 23"	UNNAMED EPHEMERAL TRIBUTARY TO SARPY CREEK
22	N 45° 45' 38"	W 107° 04' 29"	UNNAMED EPHEMERAL TRIBUTARY TO SARPY CREEK
23	N 45° 45' 48"	W 107° 04' 45"	UNNAMED EPHEMERAL TRIBUTARY TO SARPY CREEK
24	N 45° 45' 56"	W 107° 04' 43"	UNNAMED EPHEMERAL TRIBUTARY TO SARPY CREEK

Water Quality Standards

The Crow Tribe does not have EPA-approved water quality standards applicable to Sarpy Creek and the Middle Fork of Sarpy Creek. The State of Montana has EPA-approved water quality standards that apply to State waters at the border of the Crow Indian Reservation and State land. The Crow Tribe has prepared draft Tribal standards for the portion of Sarpy Creek in Indian country. The draft Tribal standards are the same as the State standards provided for Sarpy Creek where it crosses into Montana downstream.

Water quality based effluent limits were evaluated for the discharges from the Absaloka mine expansion to satisfy water quality based permitting regulations at 40 CFR 122.44(d), and protect the designated uses, water quality criteria, and antidegradation provisions.

Clean Water Act § 401 Certification

Following a review of this permit, the Assistant Regional Administrator, in accordance with Clean Water Act § 401, will certify that the discharges of this permit will comply with the applicable provisions of the Clean Water Act Sections 301, 302, 303, 306, and 307 [U.S.C. Sections 1311, 1312, 1313, 1316, and 1317], as long as the permittee complies with all permit conditions.

Water Quality Impairments

The State of Montana listed Sarpy Creek (outside the exterior boundary of the Crow Indian Reservation) in its 2006 Integrated 303(d) List and 305(b) Water Quality Report submitted to the EPA as a Category 5 stream, which means that one or more of the beneficial uses has been assessed as being impaired or threatened, and a Total Maximum Daily Load (TMDL) is required to address the factors causing the impairment or threat. Sarpy Creek is listed as “partially supporting” aquatic life and a warm water fishery and the probable cause of impairment is high nutrient concentrations. The Montana Department of Environmental Quality listed the probable source of the nutrient impairment as agricultural and grazing practices. The water quality impairment for nutrients did not affect water quality based effluent limits in the permit as the mining activities are not likely be a source of nutrients which cause or contribute to the existing water quality impairment.

The State of Montana’s Final 2012 *Water Quality Integrated Report* defines Sarpy Creek as impaired. The development of a Total Maximum Daily Load (TMDL) with potential wasteload allocations for point source discharges has not yet begun and it is listed as a low priority for the Montana Department of Environmental Quality. The status of impairment for Sarpy Creek is as follows:

TMDL Planning Area: Middle Yellowstone Tributaries
Watershed: Lower Yellowstone
HUC: 10100001
ID305b: MT42K002_090
Description: Sarpy Creek – Crow Indian Reservation Boundary to Mouth of Yellowstone River
Pollutants: Nitrate/Nitrite (Nitrate + Nitrate as N), Total N, Total P, Total Kjehldahl Nitrogen (TKN)

Technology Based Effluent Limitations

Technology based limits for this permit were derived based on the new source performance standards for the coal mining point source category found at 40 CFR Part 434. Four different sets of technology based limits have been provided in the permit and are specific to the origin and nature of the discharge. Where each of the four types of discharges for which technology-based limits have been applied commingle, the

concentration of pollutants in the combined discharge may not exceed the most stringent limitation for that pollutant.

1. **Technology-based limits for mine drainage**, excluding mine drainage from reclamation areas, brushing and grubbing areas, topsoil stockpiling areas, and regraded areas. These effluent limits also apply to discharges of groundwater and for all dewatering discharges, regardless of whether the discharges are dewatering precipitation from precipitation events less than or greater than the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume).

Technology-based limits for mine drainage were derived based on the new source performance standards for alkaline mine drainage at 40 CFR §434.45. Limits for alkaline mine drainage are applicable where the discharge, before any treatment, has a pH equal to or greater than 6.0 and total iron concentration of less than 10mg/L. Based on data from the adjacent mining operation, and the similar geological conditions between the adjacent mining operation and the proposed expansion, it is anticipated that all discharges of mine drainage from the Absaloka Mine South Extension can be characterized as “alkaline mine drainage” as defined at 40 CFR 434 Subpart D.

NSPS EFFLUENT LIMITATIONS

Pollutant or pollutant property	Maximum for any 1 day	Average of daily values for 30 consecutive days
	Concentration in mg/l	
Iron, total	6.0	3.0
TSS	70.0	35.0
pH	(1)	(1)

1 Within the range 6.0 to 9.0 at all times.

2. **Technology-based limits for precipitation-related discharges from small precipitation events**. These effluent limits apply to discharges of mine drainage, excluding mine drainage from reclamation areas, brushing and grubbing areas, topsoil stockpiling areas, and regraded areas. These effluent limits apply to any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period less than or equal to the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) and to discharges from steep slope areas as defined in section 515(d)(4) of the Surface Mining Control and Reclamation Act of 1977, as amended.

Technology-based limits for precipitation-related discharges from small precipitation events were derived based on the effluent limitations for

precipitation events at 40 CFR§434.63(a)(2).

EFFLUENT LIMITATIONS DURING PRECIPITATION

Pollutant or pollutant property	Effluent limitations
Settleable solids	0.5 ml/l maximum not to be exceeded.
pH	6.0–9.0 at all times.

Settleable solids is that matter measured by the volumetric method specified in 40 CFR §434.64.

3. **Technology-based limits for precipitation-related discharges from large precipitation events.** These effluent limits apply to discharges of mine drainage, excluding mine drainage from reclamation areas, brushing and grubbing areas, topsoil stockpiling areas, and regraded areas. These effluent limits apply to any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period greater than the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume).

Technology-based limits for precipitation-related discharges from large precipitation events were derived based on the effluent limitations for precipitation events at 40 CFR § 434.63(d)(2).

EFFLUENT LIMITATIONS DURING PRECIPITATION

Pollutant or pollutant property	Effluent limitations
Settleable solids	0.5 ml/l maximum not to be exceeded.
pH	6.0–9.0 at all times.

4. **Technology-based effluent limits applicable to mine drainage from reclamation areas, brushing and grubbing areas, topsoil stockpiling areas, and regraded areas.** Effluent limits for these discharges were derived based on the new source performance standards for Western Alkaline Coal Mining at 40 CFR § 434.85, which require the operator to:

- 1) Submit a site-specific sediment control plan to EPA incorporating the minimum requirements of 40 CFR§434.82, and
- 2) Demonstrate that implementation of the sediment control plan will result in average annual sediment yields that will not be greater than the sediment yields from pre-mined undisturbed conditions.

Consistent with these requirements, WRI submitted a sediment control plan and modeling report to EPA. These reports and other related design documents are included as attachments in Appendix A of the permit. Westmoreland Resources, Inc. must implement and maintain all procedures, design specifications, and Best Management Practices (BMPs) in accordance with the Sediment Control Plan as a condition of this permit. Specific limitations are described in Part 1.6 of the permit and are comprised of requirements from the Sediment Control Plan and additional conditions based on professional judgment but do not supersede the requirement to comply with all of the terms of the Sediment Control Plan.

Discharge Monitoring Report Data

As part of the reissuance of an NPDES permit, a review of the available discharge data is an appropriate step to evaluating effluent limits. WRI submitted data monthly to EPA during the previous permit term. A review of the discharge monitoring data submitted to EPA from 2009 to 2014 indicated that there were no reported discharges at any of the 24 outfalls authorized under the permit. EPA staff discussed this finding with Westmoreland Resources, Inc., to determine how no discharges were possible during the five year period. From this discussion it was determined that mine operators make a significant effort to not discharge mine drainage. Prior to 2013, all active mining was taking place on the East fork of Sarpy Creek. In late 2013, mining activities crossed the drainage divide to the West fork of Sarpy Creek. The active mining pit on the East Side of Sarpy creek has accumulated water, and that water was pumped to a pond where it was pumped to trucks for use in dust suppression. Given the arid climate, water is a precious commodity in the summer. Therefore, there is a significant effort to re-use mine drainage for onsite dust suppression. It is anticipated that any future discharges will be planned discharges to draw down ponds to increase future capacity. This will allow for testing of effluent quality prior to discharging within the terms and conditions of this permit.

Annual Report Data

Per the terms of the previous permit, annual reports were submitted for each of the years that the permit was effective. From these annual reports, it was possible to determine that there were no 10-year, 24-hour storm events during the reporting period. Precipitation monitoring results indicated that there were months which exceeded the average precipitation (calculated based on data from the mine opening in 1976 until the current date), but that these were not outside the realm of normal month-to-month fluctuations.

One stormwater control measure was updated in this permit as a result of data submitted during annual reports. It was noted during the 2012 annual report that slumping in conveyance channels was causing some increased erosion. The 2013 update to this permit therefore includes the following language (*italicized*), consistent with the revised 2012 erosion and sediment control plan for the mine:

Maintenance of Sediment Control BMPs. *Sediment traps and site-specific BMPs (e.g., ponds, traps, erosion control products) shall be maintained in effective operating condition during the active mining phase. During reclamation, sediment traps and ponds*

shall be converted to small depressions designed for vegetation diversity and wildlife habitat enhancement in addition to short-term sediment capture. Control measures for site-specific control (e.g., straw dikes, rip rap) shall be removed or converted to small depressions during reclamation. Maintenance of depressions for short-term sediment capture shall be maintained until vegetation achieves good hydrologic condition, defined as 75 percent or greater ground cover, similar to pre-mining vegetative cover. *Sediment control conveyances shall be maintained in a manner to reduce sediment accumulation from ditch erosion from steep slopes. Appendix B of the (2012) revised erosion and sediment control plan defines design guidelines for drainage for mine impacted areas and includes specific restrictions on triangular and trapezoidal conveyance channel slopes which should be adhered to reduce internal ditch erosion.*

Water Quality Based Effluent Limits

The water quality effluent limits and discussion thereof remain the same for this permit reissuance. This is due to three factors:

1. The Crow Tribe does not have EPA-approved water quality standards applicable to Sarpy Creek and the Middle Fork of Sarpy Creek;
2. The status of impairment and development of a TMDL for Sarpy Creek and the Middle Fork of Sarpy Creek remain the same as when the 2009 permit was issued; and
3. Since there were no discharges from the 24 outfalls authorized during the previous issuance of this permit, there are not additional data upon which to re-evaluate the reasonable potential of specific pollutants to cause or contribute to a violation of water quality standards.

The Crow Tribe does not have EPA-approved water quality standards applicable to Sarpy Creek and the Middle Fork of Sarpy Creek. In the absence of instream standards, water quality based effluent limits were derived using application data submitted by WRI and EPA's Quality Criteria for Water (EPA 440/5-86-001, May 1, 1986). The Crow Tribe did propose Tribal standards for Sarpy Creek which have not been approved by EPA. These standards prescribe the use of EPA's Quality Criteria for developing water quality based effluent limits.

In WRI's application to discharge mine drainage, data for ten pollutants were provided which were suspected to be present or limited directly by an effluent limitations guideline, new source performance standard, or indirectly through limitations on an indicator pollutant. These ten pollutants include fluoride, nitrate-nitrite nitrogen, sulfate, aluminum, boron, iron, manganese, lead, copper, and zinc. An analysis was conducted to determine whether each of these pollutants has reasonable potential to cause an exceedance of EPA's water quality criteria consistent with the process outlined in the U.S. EPA NPDES Permit Writer's Manual (EPA 883-B-96-003, December, 1996) and the Technical Support Document for Water Quality-based Toxics Control (EPA/505/2-

90-001, March 1991). This procedure requires the permit writer to determine whether maximum concentrations in pollutants have a reasonable potential to exceed water quality criteria based on available data representing outfall pollutant concentrations and the variability of the pollutant concentrations in the data.

The draft permit was proposed for public comment, first, on May 2, 2008, and second, on July 30, 2008. In response to the May 2, 2008, proposal of the draft permit, additional data were provided from WRI during the public comment period. These data more specifically characterize the anticipated water quality from non-storm related events. Reasonable potential to exceed 30-day and acute water quality criteria were re-evaluated using the newly provided data sets. Upon re-assessment of reasonable potential with the updated data, acute and chronic limits for dissolved copper and dissolved zinc and the acute limit for lead were removed from the draft permit which was proposed on May 2, 2008. EPA re-proposed the draft permit on July 30, 2008. No comments were received on the July 30, 2008, public notice.

The results of EPA’s reasonable potential analysis, using the best available data, are as follows:

Analyte	Acute Criterion	Chronic Criterion	Max. Background	Max. Outfall	Multiplying Factor	Acute Limit	Chronic Limit
Flouride	None	None	1.9	1.91	n/a	None	None
Nitrate + Nitrite N	10	None	12.2	12.2	n/a	None	None
Sulfate	None	None	2890	1990	n/a	None	None
Aluminum	0.75	0.087	16.1	0.2	5.6	0.75	0.087
Boron	None	750	1.9	1.8	n/a	None	None
Iron	n/a	1.0	26.5	.68	3.0	None	1.0
Manganese	100	50	3.83	1.35	2.0	None	None
Lead	0.281	0.0109	0.09	0.01	1.7	None	0.0109
Zinc	0.442	0.382	0.65	0.02	3.8	None	None
Copper	0.0496	0.0292	0.03	0.01	1.7	None	None

Table Notes:

1. The multiplying factor is an indicator of the variability of the data provided and is used to determine if criteria will likely be exceeded. Where (max. outfall concentration) * (multiplying factor) > criteria, effluent limits apply
2. Data and effluent limits for all metals is provided in the dissolved fraction
2. 400mg/L CaCO₃ hardness was used to develop hardness dependent criteria for Pb/Cu/Zn
3. All data and effluent limits are provided as mg/L
4. No effluent limits were developed for fluoride and sulfate as there are no applicable water quality criteria
5. A limit for nitrate+nitrite N was not developed as there is no downstream use of drinking water
6. The boron criteria is for the long-term irrigation of sensitive crops
7. Criteria for hardness-dependent were calculated using the following formulae, where CMC = acute and CCC = chronic:

$$\text{CMC (dissolved)} = \exp\{m_A [\ln(\text{hardness})] + b_A\} \text{ (CF)}$$

$$\text{CCC (dissolved)} = \exp\{m_C [\ln(\text{hardness})] + b_C\} \text{ (CF)}$$

Chemical	m _A	b _A	m _C	b _C	Freshwater Conversion Factors (CF)	
					CMC	CCC
Copper	0.9422	-1.700	0.8545	-1.702	0.960	0.960

Chemical	m _A	b _A	m _C	b _C	Freshwater Conversion Factors (CF)	
					CMC	CCC
Lead	1.273	-1.460	1.273	-4.705	$1.46203 - [(Inhardness)(0.145712)]$	$1.46203 - [(Inhardness)(0.145712)]$
Zinc	0.8473	0.884	0.8473	0.884	0.978	0.986

Reasonable potential to exceed water quality criteria was recognized for aluminum, iron, and lead. Water quality based effluent limits have been provided for each of these pollutants and have been set as “end-of-pipe” limits for which compliance must be met at the outfall. Instream dilution of pollutant concentrations was not provided as the maximum background (i.e., receiving water) concentrations of each of these pollutants exceeds EPA’s acute and chronic water quality criteria and for extended periods during the year, no flow is present in the receiving waters.

Acute and chronic water quality based effluent limits have been set equal to criteria values as listed in EPA’s Quality Criteria for Water (EPA 440/5-86-001, May 1, 1986) for aluminum and chronic effluent limits have been set equal to criteria values for iron and lead. Acute and chronic water quality based limits for these pollutants have been applied to discharges of mine drainage as the discharge of mine drainage may be a continuous discharge which could invoke effects due to chronic exposure. Acute water quality based limits have also been applied to discharges of mine drainage from small precipitation events as the discharges from small storm events are likely to be intermittent in nature. For large storm events, no water quality based effluent limits were applied as precipitation-related discharges from events exceeding the 10-year, 24-hour event do not have reasonable potential to exceed acute water quality criteria. This is because the assumption of zero dilution otherwise applied for development of acute effluent limits in this permit is not true during the 10-year, 24-hour storm event.

Summary of Effluent Limits

Effluent limits have been set for four types of discharges. The first set of effluent limits is for all runoff from the active mining area which is not directly precipitation-related (e.g., groundwater). Two sets of limits apply to precipitation induced runoff from the active mining area – one from large storms and one from small storms. A fourth set of limits applies to runoff from pre-mining and post-mining areas. The limits for the pre- and post-mining areas are specific to runoff from reclamation areas, brushing and grubbing areas, topsoil stockpiling areas, and regraded areas. For all effluent limits specific to precipitation-related events, the operator will have the burden of proof that the discharge or increase in discharge was caused by the applicable precipitation event. Where discharges with different effluent limits commingle, the concentration of pollutants in the combined discharge may not exceed the most stringent limitation for that pollutant.

1. Effluent limits for mine drainage:

Effluent Characteristic	30-Day Average	Daily Maximum
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Total Iron, mg/L	3.0	6.0
Total Suspended Solids, mg/L	35.0	70.0
Oil and Grease, mg/L	15	10
Dissolved Aluminum, ug/L	87	750
Dissolved Iron, ug/L	1000	n/a
Dissolved Lead, ug/L	10.9	n/a
There shall be no acute toxicity in the discharge (LC ₅₀ >100%) <u>a/</u>	n/a	<u>a/</u>

The pH shall be not be less than 6.0 standard units nor greater than 9.0 standard units at any time

a/ Whole Effluent Toxicity (WET) limitations will apply to the discharge for both Pimephales promelas and Ceriodaphnia dubia. Upon three (3) consecutive successful WET tests for a given indicator species, subsequent WET tests may be continued on an annual basis for that indicator species. Should acute toxicity and/or chronic toxicity be detected in the permittee's discharge, an additional test shall be conducted within two weeks of the date when the permittee learned of the test failure. If only one species fails, retesting may be limited to this species. Should acute toxicity and/or chronic toxicity be detected in the permittee's discharge, a Toxicity Identification Evaluation – Toxicity Reduction Evaluation (TIE-TRE) shall be undertaken by the permittee to establish the cause of the toxicity, locate the source(s) of the toxicity, and develop control of or treatment of the toxicity. Failure to initiate, or conduct and adequate TIE-TRE, or delays in the conduct of such tests, shall be considered a justification for non-compliance with the whole effluent toxicity (WET) limitations contained in this Part of the permit. A TRE plan needs to be submitted to the permitting authority within 45 days after confirmation of the continuance of the effluent toxicity.

2. Effluent limits for precipitation-related discharges from small precipitation events:

Effluent Characteristic	Daily Maximum
Settleable Solids, ml/L <u>b/</u>	0.5
Dissolved Aluminum, ug/L	750

Settleable solids is that matter measured by the volumetric method specified in 40 CFR § 434.64

The pH shall be not be less than 6.0 standard units nor greater than 9.0 standard units at any time

3. Effluent limits for precipitation-related discharges from large precipitation events:

The pH shall be not be less than 6.0 standard units nor greater than 9.0 standard units at any time

4. Effluent limits for mine drainage from reclamation areas, brushing and grubbing areas, topsoil stockpiling areas, and regraded areas:

A Sediment Control Plan has been submitted by WRI to and approved by EPA along with a watershed model, which demonstrates that implementation of the Sediment

Control Plan will result in average annual sediment yields that will not be greater than the sediment yield levels from pre-mined undisturbed conditions. WRI must implement and maintain all procedures, design specifications, and Best Management Practices (BMPs) in accordance with the Sediment Control Plan as a condition of this permit. Additional limitations are provided directly in the permit and are comprised of BMP-based requirements from the Sediment Control Plan and additional conditions based on professional judgment and do not supersede the requirement to comply with all of the terms of the Sediment Control Plan.

BMP-based requirements included directly in the permit include:

- Prohibition of Off-site Sediment Ponds. Control of surface water runoff and associated sedimentation will be accomplished without the use of off-site sediment pond dams consistent with the Final Effluent Limitations Guidelines and Standards for the Western Alkaline Coal Mining Subcategory (EPA-B-01-012) and alternate sediment control regulations.
- Stream Buffer Zones. With the exception of three road and dragline crossings, a minimum distance of 100 feet from the stream channel must be maintained as undisturbed and demarcated with appropriate signs along the Middle Fork of Sarpy Creek.
- Waste, Garbage, and Floatable Debris. All areas within the Middle Sarpy Creek buffer zone shall be kept free of waste, garbage, and floatable debris. Waste, garbage, and floatable debris shall not be discharged beyond the limits of disturbance for the mine.
- Roadway Conveyances. Conveyance structures shall be constructed to route the 10-year, 24-hour storm event to sediment traps and along and under roads during mining.
- Road Crossings. Where a conveyance crosses a road, pipe should be of a suitable size to ensure that design capacity can be maintained.
- Unlined Ditch Design and Maintenance. Unlined ditches designed for conveyance shall only be used where flow velocities are anticipated to be less than 5 feet-per-second. Ditches shall be maintained sufficient to maintain the design capacity. Where ditch erosion occurs at higher flow velocities, more frequent trap maintenance to maintain adequate capacity may be required. Ditches shall be inspected periodically for blockages and erosion. Blockage shall be removed and the ditch restored to its design depth. Erosion and sedimentation that compromises the ability of the ditch to convey its design flow shall be addressed by reconstructing the ditch to its design geometry.
- Ditch Transitions. Ditch transitions from triangular to trapezoidal shall be made over a distance of 10 feet or more. If a transition is required because of an

intersecting ditch, the transition shall be made above, rather than below the intersection.

- Intersecting Ditches. Intersecting ditches serving drainage areas should merge with parallel flow lines to the extent possible to minimize erosion.
- Establishment of Sediment Traps. In smaller watersheds, which range in size from less than 10 to about 160 acres, ditching and sediment traps established to convey and contain the 2-year, 24-hour event plus annual sediment yield for 3 years shall be established prior to clearing, grubbing, and soil stockpiling. Sediment traps or other appropriate BMPs shall be used where drainage flows from disturbed to undisturbed or reclaimed areas.
- Establishment of Sediment Control Measures for Site-Specific Control. Sediment control measures such as contour scarification, straw dikes, rip rap, check dams, and erosion control products shall be used when necessary to minimize erosion and sediment transport in areas requiring site-specific erosion control.
- Maintenance of Sediment Traps. Sediment accumulations in sediment traps designed to contain the 2-year, 24-hour event plus annual sediment yield for 3 years shall be cleaned out when the design depth is reduced by more than 25%.
- Maintenance of Sediment Control BMPs. Sediment traps and site-specific BMPs (e.g., ponds, traps, erosion control products) shall be maintained in effective operating condition during the active mining phase. During reclamation, sediment traps and ponds shall be converted to small depressions designed for vegetation diversity and wildlife habitat enhancement in addition to short-term sediment capture. Control measures for site-specific control (e.g., straw dikes, rip rap) shall be removed or converted to small depressions during reclamation. Maintenance of depressions for short-term sediment capture shall be maintained until vegetation achieves good hydrologic condition, defined as 75 percent or greater ground cover, similar to pre-mining vegetative cover. Sediment control conveyances shall be maintained in a manner to reduce sediment accumulation from ditch erosion from steep slopes. Appendix B of the (2012) revised erosion and sediment control plan defines design guidelines for drainage for mine impacted areas and includes specific restrictions on triangular and trapezoidal conveyance channel slopes which should be adhered to reduce internal ditch erosion.
- Soil Salvage Areas. In soil salvage areas, drainage shall be intercepted at the soil salvage edge using a combination of ditching and traps sized to contain runoff from at least a 2-year, 24-hour runoff event and a one-year sediment yield.
- Soil Preparation on the Contour. Spoil scarification, soil placement, soil preparation and seeding shall be done on the contour provided safety of equipment operators is not compromised.

- Establishment of Vegetation. Seedbed preparation techniques that create a roughened surface to retard surface runoff and increase infiltration shall be used. Permanent vegetation cover appropriate for the site shall be established by the end of the third growing season following initial seeding.
- Minimizing Potential for Erosion During Reclamation. Slope lengths shall be reduced by constructing complex slope topography. With the exception of agricultural areas, regraded landscapes shall be left in a roughened condition to minimize compaction. Coarse textured substrates, including soils with high coarse fragment content shall be used, particularly on sites with increased erosion potential, or where establishment of woody species is desired.
- Maintenance of Depressions During Reclamation. During the reclamation process, small depressions shall be established on an opportunistic basis within the reclaimed area to enhance vegetative diversity, wildlife habitat, recharge and short-term sediment control. Small depressions will meet the following criteria:
 - Each depression on the interior of the reclaimed area will be one acre foot or less in capacity;
 - Each depression at the margin of the reclaimed area will be two acre feet or less in capacity;
 - No depression will be deeper than three feet;
 - Depressions will be soiled and revegetated; and
 - Maximum slopes will be 5:1 on the uphill (inflow) side and 3:1 on the lateral and downhill (outflow) sides.
- Reclamation of Rills and Gullies. Rills and gullies developed post-construction shall be remediated on a site-specific basis if they adversely impact the establishment of vegetation, disrupt post-mine land use and/or cause or contribute to a violation of a water quality standard. Unless otherwise permitted, any rill or gully greater than 30 inches in depth will be considered disruptive and shall be remediated.
- Spill Prevention and Response Procedures. The potential for leaks, spills, and other releases that may be exposed to stormwater shall be minimized and plans shall be developed for effective response to spills when they occur. At a minimum, this shall include:
 - Procedures for plainly labeling containers (e.g., “Used Oil,” “Spent Solvents,” “Fertilizers and Pesticides,” etc.) that could be susceptible to spillage or leakage to encourage proper handling and facilitate rapid response if spills or leaks occur;
 - Preventative measures such as barriers between material storage and traffic areas, secondary containment provisions, and procedures for material storage and handling;

- Procedures for expeditiously stopping, containing, and cleaning up leaks, spills and other releases. Measures for cleaning up hazardous material spills or leaks must be consistent with applicable Resource Conservation and Recovery Act (RCRA) regulations at 40 CFR Part 264 and 40 CFR Part 265. Employees who may cause, detect, or respond to a spill or leak must be trained in these procedures and have necessary spill response equipment available; and
- Procedures for notification of appropriate facility personnel, emergency agencies, and regulatory agencies. Where a leak, spill, or other release containing a hazardous substance or oil in an amount equal to or in excess of a reportable quantity established under either 40 CFR Part 110, 40 CFR Part 117, or 40 CFR Part 302, occurs during a 24-hour period, you must notify the National Response Center (NRC) at (800) 424-8802 or, in the Washington, DC, metropolitan area, call (202) 267-2675 in accordance with the requirements of 40 CFR Part 110, 40 CFR Part 117, and 40 CFR Part 302 as soon as you have knowledge of the discharge.

Monitoring of Precipitation

Upon the effective date of this permit, precipitation shall be monitored and recorded in each of the two drainage basins where active mining is occurring. For the purposes of this part, the two drainage basins include the Middle Fork of Sarpy Creek and Sarpy Creek. Precipitation shall be monitored and recorded using a precipitation gauge which meets the standards provided in National Weather Service (NWS) Instructional Bulletin 10-1302 (October 4, 2005). Data from monitoring of precipitation was provided as part of the annual report submittals for the mine.

Quarterly Inspections

Quarterly inspections are required to ensure that the limitations for discharges of mine drainage from reclamation areas, brushing and grubbing areas, topsoil stockpiling areas, and regraded areas are met. These quarterly inspections are designed to coincide monitoring and inspection performed by Surface Mining Control and Reclamation Act (SMCRA) inspectors. The results of these inspections and general descriptions of compliance are required to be provided to EPA in an annual report for each year of the permit term.

Discharge Monitoring (not applicable to discharges from reclamation areas, brushing and grubbing areas, topsoil stockpiling areas, and regraded areas).

At a minimum, upon the effective date of this permit, the following constituents shall be monitored at the frequency and with the type of measurement indicated; samples or measurements shall be representative of the volume and nature of the monitored discharge. If no discharge occurs during the entire monitoring period, it shall be stated on the Discharge Monitoring Report Form (EPA No. 3320-1) that no discharge or overflow occurred.

Effluent Characteristic	Frequency	Sample Type
Total Flow, gpm <u>a/</u>	Daily	Instantaneous
pH, standard units	Discharge <u>b/</u>	Grab
Total Iron, mg/L	Discharge <u>b/</u>	Grab
Total Suspended Solids, mg/L	Discharge <u>b/</u>	Grab
Oil and Grease, mg/L	Discharge <u>b/</u>	Grab
Dissolved Aluminum, ug/L	Discharge <u>b/</u>	Grab
Dissolved Iron, ug/L	Discharge <u>b/</u>	Grab
Dissolved Lead, ug/L	Discharge <u>b/</u>	Grab
Whole Effluent Toxicity, acute LC50 <u>c/</u>	Discharge <u>b/</u>	Grab

- a/ Flow measurements of effluent volume shall be made in such a manner that the permittee can affirmatively demonstrate that representative values are being obtained. The average flow rate (in gallons per minute) during the reporting period and the maximum flow rate observed (in gpm) shall be reported.
- b/ The discharge shall be monitored once at the initiation of the discharge, once during the discharge, and once at the termination of the discharge. Both the maximum and composite measurements shall be reported for each discharge event on the Discharge Monitoring Report Form (EPA No. 3320-1). For acute toxicity, a composite sample shall be used.
- c/ Whole Effluent Toxicity (WET) limitations will apply to the discharge for both Pimephales promelas and Ceriodaphnia dubia. Upon three (3) consecutive successful WET tests for a given indicator species, subsequent WET tests may be continued on an annual basis for that indicator species. Should acute toxicity and/or chronic toxicity be detected in the permittee's discharge, an additional test shall be conducted within two weeks of the date when the permittee learned of the test failure. If only one species fails, retesting may be limited to this species. Should acute toxicity and/or chronic toxicity be detected in the permittee's discharge, a Toxicity Identification Evaluation – Toxicity Reduction Evaluation (TIE-TRE) shall be undertaken by the permittee to establish the cause of the toxicity, locate the source(s) of the toxicity, and develop control of or treatment of the toxicity. Failure to initiate, or conduct and adequate TIE-TRE, or delays in the conduct of such tests, shall be considered a justification for non-compliance with the whole effluent toxicity (WET) limitations contained in this Part of the permit. A TRE plan needs to be submitted to the permitting authority within 45 days after confirmation of the continuance of the effluent toxicity.

Discharge Monitoring for Smaller Precipitation Events (not applicable to discharges from reclamation areas, brushing and grubbing areas, topsoil stockpiling areas, and regraded areas).

These monitoring requirements apply to any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period less than or equal to the 10-

year, 24-hour precipitation event (or snowmelt of equivalent volume) and to discharges from steep slope areas as defined in section 515(d)(4) of the Surface Mining Control and Reclamation Act of 1977, as amended. At a minimum, upon the effective date of this permit, the following constituents shall be monitored at the frequency and with the type of measurement indicated; samples or measurements shall be representative of the volume and nature of the monitored discharge. If no discharge occurs during the entire monitoring period, it shall be stated on the Discharge Monitoring Report Form (EPA No. 3320-1) that no discharge or overflow occurred.

Effluent Characteristic	Frequency	Sample Type
Total Flow, gpm <u>a/</u>	Daily	Instantaneous
pH, standard units	Weekly	Grab
Total Settleable Solids (ml/L) <u>b/</u>	Weekly	Grab
Dissolved Aluminum, ug/L	Weekly	Grab

a/ Flow measurements of effluent volume shall be made in such a manner that the permittee can affirmatively demonstrate that representative values are being obtained. The average flow rate (in gallons per minute) during the reporting period and the maximum flow rate observed (in gpm) shall be reported.

b/ Settleable solids is that matter measured by the volumetric method specified in 40 CFR § 434.64

Discharge Monitoring for Larger Precipitation Events (not applicable to discharges from reclamation areas, brushing and grubbing areas, topsoil stockpiling areas, and graded areas).

These monitoring requirements apply to any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period greater than the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume). At a minimum, upon the effective date of this permit, the following constituents shall be monitored at the frequency and with the type of measurement indicated; samples or measurements shall be representative of the volume and nature of the monitored discharge. If no discharge occurs during the entire monitoring period, it shall be stated on the Discharge Monitoring Report Form (EPA No. 3320-1) that no discharge or overflow occurred.

Effluent Characteristic	Frequency	Sample Type
Total Flow, gpm <u>a/</u>	Daily	Instantaneous
pH, standard units	Weekly	Grab

a/ Flow measurements of effluent volume shall be made in such a manner that the permittee can affirmatively demonstrate that representative values are being obtained. The average flow rate (in gallons per minute) during the reporting period and the maximum flow rate observed (in gpm) shall be reported.

Historical and Tribal Preservation

The reissuance of this permit does not constitute a project which is geographically or substantively outside of the scope of the *Environmental Impact Statement for the Absaloka Mine Crow Reservation South Extension Coal Lease Approval, Proposed Mine Development Plan, and Related Federal and State Permitting Actions* finalized in October of 2008. The Bureau of Indian Affairs (BIA) is the lead agency for National Historic Preservation Act (NHPA) compliance for the South Extension development plan, pursuant to NHPA implementing regulations at 36 C.F.R. Section 800.2(a)(2). In addition, BIA is the lead agency for activities pursuant to 50 C.F.R. Section 402.07 related to Endangered Species Act (ESA) consultation with the U.S. Fish and Wildlife Service regarding this project. BIA sent a letter to EPA on May 28, 2008 agreeing to act as lead agency for both the NHPA and ESA. This letter is contained in the administrative record for the NPDES permit. The administrative record for this permit is stored in the public domain EPA Region 8 Records Center and may be obtained upon request by contacting Greg Davis at 303-312-6314 or by writing or E-mailing to the address listed below:

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Public Notice

This permit was public noticed in the Billings Gazette on July 13, 2014 with subsequent notification and draft permit availability on the EPA Region 8 web site. Notification was also provided to the Montana Interested Parties list, the Office of Surface Mines, the Bureau of Indian Affairs, and the Crow Tribe. No comments were received during the public notice period.

Greg Davis
Wastewater Unit
EPA Region 8
Drafted: January 23, 2014
Modified: August 26, 2014