

**APPENDIX A**

**IDENTIFICATION AND DESCRIPTION OF  
APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS**

**ANACONDA SMELTER SUPERFUND SITE,  
REGIONAL WATER, WASTE, AND SOILS OPERABLE UNIT  
September 2010**

## **INTRODUCTION**

Federal regulations provide that all ARARs are "frozen" as of the date of the ROD unless EPA determines that new standards are "necessary to ensure that the remedy is protective of human health and the environment." 40 CFR 300.430(f)(1)(ii)(B)(1). Such a protectiveness determination was made by EPA and DEQ for the ARWW&S OU, where it was determined that the ground water and surface water performance standards in the ROD were not consistent with the revised arsenic standard, and not protective.

EPA's rationale for freezing ARARs as of the date of the ROD is to prevent "continually changing remedies to accommodate new or modified requirements," which would "adversely affect the operation of the CERCLA program, [and] would be inconsistent with Congress' mandate to expeditiously clean up sites..." 55 Fed.Reg. 8666, 8757 (1990). Federal regulations require that changes in applicable or relevant and appropriate requirements do not apply to remedies already documented and/or implemented unless those changes cause a reconsideration of the protectiveness of the original remedy. Further, ARARs effective at the time of a ROD amendment, but not at the time of the original ROD, apply only to remedial components that are newly described in the ROD amendment. Assuming there is no question as to protectiveness, the newly promulgated standards do not apply to the original ROD. See 40 C.F.R. § 300.430(f)(1)(ii)(B).

Each component of the ROD Amendment was previously described in the 1998 ROD. Rather than describe a new component, the principal effects of this ROD Amendment are to 1) expand areas over which technologies described in the original ROD will be applied, or 2) apply technologies described in the original ROD to additional areas.

EPA and DEQ have reviewed both the original list of ARARs set forth in Appendix A to the 1998 ROD, and its current revisions. After reviewing the ARARs, EPA and DEQ have determined that, except for the contaminant specific ground water and surface water standards listed in Table 1, there is no change to any ARAR that would call into question the protectiveness of the original remedy. The updates are set forth in Part 2 below. Part 1 of this Appendix A of this ROD Amendment sets forth the ARARs as presented in Appendix A to the 1998 ROD.

**APPENDIX A, PART 1**

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## **INTRODUCTION**

Section 121(d) of CERCLA, 42 U.S.C. § 9621(d), the National Oil and Hazardous Substances Pollution Contingency Plan (the “NCP”), 40 CFR Part 300 (1990), and guidance and policy issued by the Environmental Protection Agency (EPA) require that remedial actions under CERCLA comply with substantive provisions of applicable or relevant and appropriate standards, requirements, criteria, or limitations (ARARs) from State of Montana and federal environmental laws and State facility siting laws during and at the completion of the remedial action. These requirements are threshold standards that any selected remedy must meet, unless an ARAR waiver is invoked.

This document identifies final ARARs for the activities to be conducted under the Anaconda Regional Water, Waste, and Soils Operable Unit (ARWW&S OU) remedial action. The following ARARs or groups of related ARARs are each identified by a statutory or regulatory citation, followed by a brief explanation of the ARAR and how and to what extent the ARAR is expected to apply to the activities to be conducted under this remedial action.

Substantive provisions of the requirements listed below are identified as ARARs pursuant to 40 CFR § 300.400. ARARs that are within the scope of this remedial action must be attained during and at the completion of the remedial action.<sup>1</sup> No permits are anticipated for the remedial action for the ARWW&S OU in accordance with Section 121(e) of CERCLA.

### **TYPES OF ARARs**

ARARs are either “applicable” or “relevant and appropriate.” Both types of requirements are mandatory under CERCLA and the NCP.<sup>2</sup> Applicable requirements are those cleanup standards, standards of control, and other substantive requirements, criteria or limitations promulgated under federal environmental or state environmental and facility siting laws that specifically address a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance found at a CERCLA site. Only those state standards that are identified by a state in a timely manner and that are more stringent than federal requirements may be applicable.<sup>3</sup>

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<sup>1</sup> 40 CFR Section 300.435(b)(2); Preamble to the National Oil and Hazardous Substances Pollution Contingency Plan, 55 Fed. Reg. 8755-8757 (March 8, 1990).

<sup>2</sup> CERCLA § 121(d)(2)(A), 42 U.S.C. § 9621(d)(2)(a). See also, 40 CFR § 300.430(f)(1)(i)(A).

<sup>3</sup> 40 CFR § 300.5.

Relevant and appropriate requirements are those cleanup standards, standards of control, and other substantive requirements, criteria or limitations promulgated under federal environmental or state environmental or facility siting laws that, while not “applicable” to hazardous substances, pollutants, contaminants, remedial actions, locations, or other circumstances at a CERCLA site, address problems or situations sufficiently similar to those encountered at the CERCLA site that their use is well suited to the particular site. Only those state standards that are identified in a timely manner and are more stringent than federal requirements may be relevant and appropriate.<sup>4</sup>

The determination that a requirement is relevant and appropriate is a two-step process: (1) determination if a requirement is relevant and (2) determination if a requirement is appropriate. In general, this involves a comparison of a number of site-specific factors, including an examination of the purpose of the requirement and the purpose of the proposed CERCLA action; the medium and substances regulated by the requirement and the proposed requirement; the actions or activities regulated by the requirement and the remedial action; and the potential use of resources addressed in the requirement and the remedial action. When the analysis results in a determination that a requirement is both relevant and appropriate, such a requirement must be complied with to the same degree as if it were applicable.<sup>5</sup>

ARARs are contaminant, location, or action specific. Contaminant specific requirements address chemical or physical characteristics of compounds or substances on sites. These values establish acceptable amounts or concentrations of chemicals which may be found in or discharged to the ambient environment.

Location specific requirements are restrictions placed upon the concentrations of hazardous substances or the conduct of cleanup activities because they are in specific locations. Location specific ARARs relate to the geographical or physical positions of sites, rather than to the nature of contaminants at sites.

Action specific requirements are usually technology based or activity based requirements or limitations on actions taken with respect to hazardous substances, pollutants or contaminants. A given cleanup activity will trigger an action specific requirement. Such requirements do not themselves determine the cleanup alternative, but define how chosen cleanup methods should be performed.

Many requirements listed as ARARs are promulgated as identical or near identical requirements in both federal and state law, usually pursuant to delegated environmental programs administered by EPA and the state. The Preamble to the NCP provides that such a situation results in citation to the state provision and treatment of the provision as a federal requirement.

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<sup>4</sup> 40 CFR § 300.5.

<sup>5</sup> CERCLA Compliance with Other Laws Manual, Vol. I, OSWER Directive 9234.1-01, August 8, 1988, p. 1-11.

Also contained in this list are policies, guidance or other sources of information which are “to be considered” in the selection of the remedy and implementation of the record of decision (ROD). Although not enforceable requirements, these documents are important sources of information which EPA and the State of Montana Department of Environmental Quality (MDEQ) may consider during selection of the remedy, especially in regard to the evaluation of public health and environmental risks; or which will be referred to, as appropriate, in selecting and developing cleanup actions.<sup>6</sup>

This Appendix constitutes EPA's and MDEQ's formal identification and detailed description of ARARs for the implementation of the remedial action at the Anaconda Smelter NPL Site, Anaconda Regional Water, Waste & Soils Operable Unit. Final ARARs will be set forth as performance standards for any and all remedial design or remedial action work plans.

## **I. CONTAMINANT SPECIFIC ARARs**

### **A. Federal and State Groundwater ARARs.**

Groundwater ARARs are must be met throughout the ARWW&S OU. Compliance with groundwater ARARs in waste management areas will generally be measured at the edge of each area.

#### **i. State of Montana requirements.**

##### **a. ARM § 17.30.1002 and -1003 (all applicable).**

ARM § 17.30.1002 provides that groundwater is classified I through IV based on its present and future most beneficial uses, and states that groundwater is to be classified according to actual quality or use, whichever places the groundwater in a higher class. Class I is the highest quality class; class IV the lowest. Based upon its specific conductance, groundwater throughout the entire ARWW&S OU is considered Class I groundwater.

ARM § 17.30.1003 sets the standards for the different classes of groundwater. Concentrations of dissolved substances in Class I or II groundwater may not exceed the human health standards listed in department Circular WQB-7.<sup>7</sup> These levels are listed below for the primary contaminants of concern. Levels that are more stringent than the MCL or MCLG identified in the federal portion of the ARARs are set out in boldface type.

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<sup>6</sup> 40 CFR Section 300.400(g)(3); 40 CFR Section 300.415(i); Preamble to the NCP, 55 Fed. Reg. 8744-8746 (March 8, 1990).

<sup>7</sup> Montana Department of Environmental Quality, Water Quality Division, Circular WQB-7, Montana Numeric Water Quality Standards (December 3, 1995).



<u>Contaminant</u>	<u>WQB-7 Standard*</u>
Arsenic	18 µg/L
Beryllium	4 µg/L
Cadmium	5 µg/L
Copper	1,000 µg/L
Lead	15 µg/L
Zinc	5,000 µg/L

\*WQB-7 standards for metals and arsenic in ground water are based on the dissolved portion of the sample.

ARM § 17.30.1003 requires that concentrations of other dissolved or suspended substances must not exceed levels that render the waters harmful, detrimental or injurious to public health. Maximum allowable concentrations of these substances also must not exceed acute or chronic problem levels that would adversely affect existing or designated beneficial uses of groundwater of that classification.

**b. ARM § 17.30.1011 (applicable).**

This section provides that any groundwater whose existing quality is higher than the standard for its classification must be maintained at that high quality in accordance with MCA § 75-5-303.

An additional concern with respect to ARARs for groundwater is the impact of groundwater upon surface water. If significant loadings of contaminants from groundwater sources to Warm Springs Creek, Mill Creek and Willow Creek contribute to the inability of the stream to meet B-1 class standards, then alternatives to alleviate such groundwater loading must be evaluated and, if appropriate, implemented. Groundwater in certain areas may have to be remediated to levels more stringent than the groundwater classification standards in order to achieve the standards for affected surface water. See Compliance with Federal Water Quality Criteria, OSWER Publication 9234.2-09/FS (June 1990) (“Where the ground water flows naturally into the surface water, the ground-water remediation should be designed so that the receiving surface-water body will be able to meet any ambient water-quality standards (such as State WQSs or FWQC) that may be ARARs for the surface water.”)

**ii. Federal requirements.**

**Safe Drinking Water Act, 42 U.S.C. § 300f, et seq., National Primary and Secondary Drinking Water Regulations, 40 CFR Parts 141 and 142 (relevant and appropriate).** The National Primary and Secondary Drinking Water Regulations (40 CFR Parts 141 and 143) establish maximum contaminant levels (MCLs) for chemicals in drinking water distributed in public water systems. These are enforceable in Montana under the Public Water Safety Act, MCA § 75-6-101, et seq., and ARM § 17.30.204. Safe Drinking Water Act MCLs are not applicable to the ARWW&S remedial action because the contaminated portions of the aquifers found within the ARWW&S OU are currently not a source for public water supplies. There is no known public use of groundwater underlying or coming into contact with contaminants from the

ARWW&S OU. These standards may be applicable in the future should EPA detect an exceedance at a public water outlet.

These drinking water standards are relevant and appropriate, however, because groundwater in the area is a potential source of drinking water. Since Warm Springs Creek, Mill Creek and Willow Creek are potential sources of drinking water, these standards are relevant and appropriate for these surface waters as well.

The determination that the drinking water standards are relevant and appropriate for portions of the ARWW&S OU remedial action is fully supported by the regulations and guidance. The Preamble to the NCP clearly states that the MCLs are relevant and appropriate for groundwater that is a current or potential source of drinking water. See 55 Fed. Reg. 8750, March 8, 1990, and 40 CFR § 300.430(e)(2)(i)(B). MCLs developed under the Safe Drinking Water Act generally are ARARs for current or potential drinking water sources. See, EPA Guidance On Remedial Action For Contaminated Groundwater at Superfund Sites, OSWER Dir. #9283.1-2, December 1988.

In addition, maximum contaminant level goals (MCLGs) may also be relevant and appropriate in certain site-specific situations. See 55 Fed. Reg. 8750-8752. MCLGs are health-based goals which are established at levels at which no known or anticipated adverse effects on the health of persons occur and which allow an adequate margin of safety. According to the NCP, MCLGs that are set at levels above zero must be attained by remedial actions for ground or surface waters that are current or potential sources of drinking water, where the MCLGs are relevant and appropriate under the circumstances of the release. Where the MCLG for a contaminant has been set at a level of zero, the MCL promulgated for that contaminant must be attained by the remedial actions.

The MCLGs and MCLs for contaminants of concern are:

<u>Contaminant</u>	<u>MCL (mg/L) MCLG (mg/L)</u>	
Arsenic	0.05 <sup>*</sup>	none
Beryllium	none <sup>**</sup>	.004 <sup>***</sup>
Cadmium	.005 <sup>*</sup>	.005 <sup>***</sup>
Copper	1.3 <sup>***</sup>	1.3 <sup>***</sup>
Lead	.015 <sup>****</sup>	0 <sup>***</sup>

\* 40 CFR § 141.62(b)

\*\* 40 CFR § 141.51(c) no MCL, does specify BAT to be applied

\*\*\* 40 CFR § 141.51(b)

\*\*\*\* 40 CFR § 141.80(b)-this is an action level, not a true MCL

**B. Federal and State Surface Water ARARs.**

**1. State of Montana Surface Water Quality Requirements, Montana Water Quality Act, MCA § 75-5-101, et seq., and implementing regulations (applicable). General.**

The Clean Water Act, 33 U.S.C. § 1251, et seq., provides the authority for each state to adopt water quality standards (40 CFR Part 131) designed to protect beneficial uses of each water body and requires each state to designate uses for each water body. The Montana Water Quality Act, MCA § 75-5-101, et seq., establishes requirements for restoring and maintaining the quality of surface and groundwaters. The State has the authority to adopt water quality standards designed to protect beneficial uses of each water body and to designate uses for each water body. Montana's regulations classify State waters according to quality, place restrictions on the discharge of pollutants to State waters, and prohibit degradation of State waters. Pursuant to this authority and the criteria established by Montana surface water quality regulations, ARM § 17.30.601, et seq., Montana has established the Water-Use Classification system. Under ARM § 17.30.607, tributaries to Clark Fork River, including Warms Springs Creek, Mill Creek, Willow Creek, Lost Creek, and the Mill Willow Bypass have been classified "B-1." Ditches and certain other bodies of surface water must also meet these requirements.<sup>8</sup> Certain of the B-1 standards, codified at ARM § 17.30.623, as well as Montana's nondegradation requirements, are presented below.

**a. ARM § 17.30.623 (applicable).** Waters classified B-1 are, after conventional treatment, suitable for drinking, culinary and food processing purposes. These waters are also suitable for bathing, swimming and recreation, growth and propagation of salmonid fishes and associated aquatic life, waterfowl and furbearers, and use for agricultural and industrial purposes. This section provides also that concentrations of carcinogenic, bioconcentrating, toxic or harmful parameters which would remain in water after conventional water treatment may not exceed standards set forth in department circular WQB-7. WQB-7 provides that "whenever both Aquatic Life Standards and Human Health Standards exist for the same analyte, the more restrictive of these values will be used as the numeric Surface Water Quality Standard." For the primary Contaminants of Concern the Circular WQB-7 standards are listed below.

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<sup>8</sup> As provided under ARM § 17.30.602(25), "surface waters' means any waters on the earth's surface, including but not limited to, streams, lakes, ponds, and reservoirs; and irrigation and drainage systems discharging directly into a stream, lake, pond, reservoir or other surface water. Water bodies used solely for treating, transporting or impounding pollutants shall not be considered surface water."

<u>Contaminant</u>	<u>WQB-7 Standard</u>
Arsenic	18 µg/L
Cadmium	1.1 µg/L*
Copper	12 µg/L*
Iron	300 µg/L
Lead	3.2 µg/L*
Zinc	110 µg/L*

\*Chronic Aquatic Life Standard based on 100 mg/L hardness.

The B-1 classification standards at ARM § 17.30.623 also include the following criteria: 1) dissolved oxygen concentration must not be reduced below the levels given in department circular WQB-7; 2) hydrogen ion concentration (pH) must be maintained within the range of 6.5 to 8.5; 3) the maximum allowable increase above naturally occurring turbidity is 5 nephelometric turbidity units; 4) temperature increases must be kept within prescribed limits; 5) no increases above naturally occurring concentrations of sediment, settleable solids, oils, floating solids, which will or are likely to create a nuisance or render the waters harmful, detrimental, or injurious to public health, recreation, safety, welfare, livestock, wild animals, birds, fish or other wildlife are allowed; 5) True color must be kept within specified limits.

**b. ARM § 17.30.637 (applicable).** Provides that surface waters must be free of substances attributable to industrial practices or other discharges that will: (a) settle to form objectionable sludge deposits or emulsions beneath the surface of the water or upon adjoining shorelines; (b) create floating debris, scum, a visible oil film (or be present in concentrations at or in excess of 10 milligrams per liter) or globules of grease or other floating materials; (c) produce odors, colors or other conditions which create a nuisance or render undesirable tastes to fish flesh or make fish inedible; (d) create concentrations or combinations of materials which are toxic or harmful to human, animal, plant or aquatic life; (e) create conditions which produce undesirable aquatic life.

ARM § 17.30.637 also states that no waste may be discharged and no activities conducted which, either along or in combination with other waste activities, will cause violation of surface water quality standards; provided a short term exemption from a surface water quality standard may be authorized by the department under certain conditions.

**c. ARM § 17.30.705 (applicable).** Existing and anticipated uses of surface water and water quality necessary to support those uses must be maintained and protected.

**2. Federal Surface Water Quality Requirements, Clean Water Act, 33 U.S.C. §§ 1251, et seq. (applicable).** As provided under Section 303 of the Clean Water Act, 33 U.S.C. § 1313, the State of Montana has promulgated water quality standards. See the discussion above under State surface water quality requirements.

**C. Federal and State Air Quality ARARs.**

**1. National Ambient Air Quality Standards, 40 CFR § 50.6 (PM-10); 40 CFR § 50.12 (lead) (applicable).** These provisions establish standards for PM-10 and lead emissions to air. (Corresponding state standards are found at ARM § 17.8.222 (lead) and ARM § 17.8.223 (PM-10).)

**2. Montana Ambient Air Quality Regulations, ARM §§ 17.8.206, -.222, -.220, and -.223 (applicable).**

**a. ARM § 17.8.206.** This provision establishes sampling, data collection and analytical requirements to ensure compliance with ambient air quality standards.

**b. ARM § 17.8.222.** Lead emissions to ambient air shall not exceed a ninety (90) day average of 1.5 micrograms per cubic liter of air.

**c. ARM § 17.8.220.** Settled particulate matter shall not exceed a thirty (30) day average of 10 grams per square meter.

**d. ARM § 17.8.223.** PM-10 concentrations in ambient air shall not exceed a 24 hour average of 150 micrograms per cubic meter of air and an annual average of 50 micrograms per cubic meter of air.

**II. LOCATION SPECIFIC REQUIREMENTS**

The statutes and regulations set forth below relate to solid waste, floodplains, floodways, streambeds, and the preservation of certain cultural, historic, natural or other national resources located in certain areas which may be adversely affected by the ARWW&S OU remedial action.

**A. National Historic Preservation Act, 16 U.S.C. § 470, 40 CFR § 6.301(b), 36 CFR Part 800 (NHPA) (applicable).** This statute and implementing regulations require Federal agencies to take into account the effect of this response action upon any district, site, building, structure, or object that is included in or eligible for the Register of Historic Places. Compliance with NHPA requirements will be attained through the Regional Historic Preservation Plan as implemented pursuant to agreements entered into with EPA and Anaconda/Deer Lodge.

**B. Archaeological and Historic Preservation Act, 16 U.S.C. § 469, 40 CFR 6.301(c) (applicable).** This statute and implementing regulations establish requirements for the evaluation and preservation of historical and archaeological data, which may be destroyed through alteration of terrain as a result of a Federal construction project or a federally licensed activity or program. This requires EPA or the PRP to survey the site for covered scientific, prehistorical or archaeological artifacts. The results of this survey will be reflected in the Administrative Record. Preservation of appropriate data concerning the artifacts is hereby identified as an ARAR requirement, to be completed during the implementation of the remedial action.

C. **Historic Sites, Buildings and Antiquities Act, 16 U.S.C. § 461, et seq., 40 CFR § 6.310(a) (applicable)**. This statute and implementing regulations require federal agencies to consider the existence and location of land marks on the National Registry of National Landmarks and to avoid undesirable impacts on such landmarks.

D. **Fish and Wildlife Coordination Act, 16 U.S.C. §§ 1531, et seq., 40 CFR § 6.302(g) (applicable)**. This statute and implementing regulations require that Federal agencies or federally funded projects ensure that any modification of any stream or other water body affected by any action authorized or funded by the Federal agency provides for adequate protection of fish and wildlife resources. Compliance with this ARAR requires EPA to consult with the U.S. Fish and Wildlife Service and the Montana Department of Fish, Wildlife, and Parks. Further consultation will occur during remedial design and remedial action.

E. **Endangered Species Act, 16 U.S.C. § 1531, 40 CFR § 6.302(h), 50 CFR Parts 17 and 402 (applicable)**. This statute and implementing regulations provide that federal activities not jeopardize the continued existence of any threatened or endangered species. As part of on-going site investigations, ARCO completed a report, **Wetlands and Threatened/Endangered Species Inventory with Determination of Effective Wetland Area (May 1994)**, which noted that the following threatened or endangered animal species are present in the Anaconda area: bald eagles and peregrine falcons. Additionally, the Montana Natural Heritage Program data base indicates that Preble's shrew has been observed on site. The remedy selection process, including the Feasibility Study, should identify whether the proposed remedial actions will impact threatened and/or endangered species and/or their habitat, and what avoidance or mitigative measures are necessary in Section 1.0, Statutory Determinations, of the Decision Summary of the ROD.

F. **Floodplain Management, 40 CFR § 6.302(b), and Executive Order No. 11988 (applicable)**. These require that actions be taken to avoid, to the extent possible, adverse effects associated with direct or indirect development of a floodplain, or to minimize adverse impacts if no practicable alternative exists.

G. **Protection of Wetlands, 40 CFR Part 6, Appendix A, Executive Order No. 11990 (applicable)**. This ARAR requires Federal agencies and the PRP to avoid, to the extent possible, the adverse impacts associated with the destruction or loss of wetlands and to avoid support of new construction in wetlands if a practicable alternative exists. Wetlands are defined as those areas that are inundated or saturated by groundwater or surface water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Compliance with this ARAR will be achieved through consultation with the U.S. Fish and Wildlife Service and the U.S. Corp of Engineers, to determine the existence and category of wetlands present at the site, and any avoidance or mitigation and replacement which may be necessary. As part of on-going site investigations, ARCO completed a report, **Wetlands and Threatened/Endangered Species Inventory with Determination of Effective Wetland Area (May 1994)**. A total of 10,714 acres were positively identified as jurisdictional wetlands and 164 acres of aquatic habitat were identified. .

H. **Montana Floodplain and Floodway Management Act and Regulations, MCA § 76-5-401, et seq., ARM § 36.15.601, et seq. (applicable)**. The Floodplain and Floodway

Management Act and regulations specify types of uses and structures that are allowed or prohibited in the designated 100-year floodway<sup>9</sup> and floodplain.<sup>10</sup> Since the ARWW&S OU lies partially within the 100-year floodplain of Warm Springs Creek, these standards are applicable to all actions within this floodplain area.

i) Allowed uses

The law recognizes certain uses as allowable in the floodway and a broader range of uses as allowed in the floodplain. Residential use is among the possible allowed uses expressly recognized in both the floodway and floodplain. "Residential uses such as lawns, gardens, parking areas, and play areas," as well as certain agricultural, industrial-commercial, recreational and other uses are permissible within the designated floodway, provided they do not require structures other than portable structures, fill or permanent storage of materials or equipment. MCA § 76-5-401; ARM § 36.15.601 (Applicable). In addition, in the flood fringe (i.e., within the floodplain but outside the floodway), residential, commercial, industrial, and other structures may be permitted subject to certain conditions relating to placement of fill, roads, floodproofing, etc. MCA § 76-5-402; ARM § 36.15.701 (Applicable). Domestic water supply wells may be permitted, even within the floodway, provided the well casing is watertight to a depth of 25 feet and the well meets certain conditions for floodproofing, sealing, and positive drainage away from the well head. ARM § 36.15.602(6).

ii) Prohibited uses

Uses prohibited anywhere in either the floodway or the floodplain are:

1. solid and hazardous waste disposal; and
2. storage of toxic, flammable, hazardous, or explosive materials.

ARM §§ 36.15.605(2) and 36.15.703 (Applicable); see also ARM § 36.15.602(5)(b) (Applicable).

In the floodway, additional prohibitions apply, including prohibition of:

1. a building for living purposes or place of assembly or permanent use by human beings;

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<sup>9</sup> The "floodway" is the channel of a watercourse or drainway and those portions of the floodplain adjoining the channel which are reasonably required to carry and discharge the floodwater of the watercourse or drainway. ARM § 36.15.101(13).

<sup>10</sup> The "floodplain" is the area adjoining the watercourse or drainway which would be covered by the floodwater of a base (100-year) flood except for sheetflood areas that receive less than one foot of water per occurrence. The floodplain consists of the floodway and flood fringe.

2. any structure or excavation that will cause water to be diverted from the established floodway, cause erosion, obstruct the natural flow of water, or reduce the carrying capacity of the floodway; and
3. the construction or permanent storage of an object subject to flotation or movement during flood level periods.

MCA § 76-5-402 (Applicable).

iii) Applicable considerations in use of floodplain or floodway

Applicable regulations also specify factors that must be considered in allowing diversions of the stream, changes in place of diversion of the stream, flood control works, new construction or alteration of artificial obstructions, or any other nonconforming use within the floodplain or floodway. Many of these requirements are set forth as factors that must be considered in determining whether a permit can be issued for certain obstructions or uses. While permit requirements are not directly applicable to remedial actions conducted entirely on site, the substantive criteria used to determine whether a proposed obstruction or use is permissible within the floodway or floodplain are applicable standards. Factors which must be considered in addressing any obstruction or use within the floodway or floodplain include:

1. the danger to life and property from backwater or diverted flow caused by the obstruction or use;
2. the danger that the obstruction or use will be swept downstream to the injury of others;
3. the availability of alternate locations;
4. the construction or alteration of the obstruction or use in such a manner as to lessen the danger;
5. the permanence of the obstruction or use; and
6. the anticipated development in the foreseeable future of the area which may be affected by the obstruction or use.

See MCA § 76-5-406; ARM § 36.15.216 (Applicable, substantive provisions only). Conditions or restrictions that generally apply to specific activities within the floodway or floodplain are:

1. the proposed activity, construction, or use cannot increase the upstream elevation of the 100-year flood a significant amount (½ foot or as otherwise determined by the permit issuing authority) or significantly increase flood velocities, ARM § 36.15.604 (Applicable, substantive provisions only); and
2. the proposed activity, construction, or use must be designed and constructed to minimize potential erosion.



For the substantive conditions and restrictions applicable to specific obstructions or uses, see the following applicable regulations:

Excavation of material from pits or pools - ARM § 36.15.602(1).

Water diversions or changes in place of diversion - ARM § 36.15.603.

Flood control works (levees, floodwalls, and riprap must comply with specified safety standards) - ARM § 36.15.606.

Roads, streets, highways and rail lines (must be designed to minimize increases in flood heights) - ARM § 36.15.701(3)(c).

Structures and facilities for liquid or solid waste treatment and disposal (must be floodproofed to ensure that no pollutants enter flood waters and may be allowed and approved only in accordance with MDEQ regulations, which include certain additional prohibitions on such disposal) - ARM § 36.15.701(3)(d).

Residential structures -ARM § 36.15.702(1).

Commercial or industrial structures - ARM § 36.15.702(2).

**I. Montana Natural Streambed and Land Preservation Act and Regulations, MCA § 75-7-101 and ARM §§ 36.2.404, 405, and 406 (applicable).** Applicable if this remedial action alters or affects a streambed or its banks. The adverse effects of any such action must be minimized.

MCA §§ 87-5-502 and 504 (Applicable -- substantive provisions only) provide that a state agency or subdivision shall not construct, modify, operate, maintain or fail to maintain any construction project or hydraulic project which may or will obstruct, damage, diminish, destroy, change, modify, or vary the natural existing shape and form of any stream or its banks or tributaries in a manner that will adversely affect any fish or game habitat. The requirement that any such project must eliminate or diminish any adverse effect on fish or game habitat is applicable to the state in approving remedial actions to be conducted. The Natural Streambed and Land Preservation Act of 1975, MCA § 75-7-101, et seq., (Applicable -- substantive provisions only) includes similar requirements and is applicable to private parties as well as government agencies.

ARM § 36.2.404 (Applicable) establishes minimum standards which would be applicable if a remedial action alters or affects a streambed, including any channel change, new diversion, riprap or other stream bank protection project, jetty, new dam or reservoir or other commercial, industrial or residential development. No such project may be approved unless reasonable efforts will be made consistent with the purpose of the project to minimize the amount of stream channel alteration, insure that the project will be as permanent a solution as possible and will create a reasonably permanent and stable situation, insure that the project will pass anticipated water flows without creating harmful erosion upstream or downstream, minimize turbidity, effects on fish and aquatic habitat, and adverse effects on the natural beauty of the area and insure that streambed gravels will not be used in the project unless there is no reasonable

alternative. Soils erosion and sedimentation must be kept to a minimum. Such projects must also protect the use of water for any useful or beneficial purpose. See MCA § 75-7-102.

While the administrative/procedural requirements, including the consent and approval requirements, set forth in these statutes and regulations are not ARARs, the party designing and implementing the remedial action for the ARWW&S OU is encouraged to continue to consult with the Montana Department of Fish, Wildlife and Parks, and any conservation district or board of county commissioners (or consolidated city/county government) as provided in the referenced statutes, to assist in the evaluation of factors discussed above.

**J. Migratory Bird Treaty Act, 16 U.S.C. §§ 703, et seq. (applicable).** This requirement establishes a federal responsibility for the protection of the international migratory bird resource and requires continued consultation with the USFWS during remedial design and remedial construction to ensure that the cleanup of the site does not unnecessarily impact migratory birds. Specific mitigative measures may be identified for compliance with this requirement.

**K. Bald Eagle Protection Act, 16 U.S.C. §§ 668, et seq. (applicable).** This requirement establishes a federal responsibility for protection of bald and golden eagles, and requires continued consultation with the USFWS during remedial design and remedial construction to ensure that any cleanup of the site does not unnecessarily adversely affect the bald and golden eagles. Specific mitigative measures may be identified for compliance with this requirement.

**L. Resource Conservation and Recovery Act and regulations, 40 CFR § 264.18 (a) and (b) (relevant and appropriate).** Regulations promulgated under the Solid Waste Management, MCA § 75-10-201, et seq., specify requirements that apply to the location of any solid waste management facility.

**M. Montana Solid Waste Management Act and regulations, MCA § 75-10-201, et seq., ARM § 17.50.505 (applicable).** Sets forth requirements applying to the location of any solid waste management facility. Among other things, the location must have sufficient acreage, must not be within a 100-year floodplain, must be located so as to prevent pollution of ground, surface, and private and public water supply systems, and must allow for reclamation of the land.

**N. American Indian Religious Freedom Act, 42 U.S.C. § 1996, et seq. (applicable).** This Act establishes a federal responsibility to protect and preserve the inherent right of American Indians to believe, express and exercise the traditional religions of American Indians. This right includes, but is not limited to, access to sites, use and possession of sacred objects, and the freedom to worship through ceremonials and traditional rites. The Act requires Federal agencies to protect Indian religious freedom by refraining from interfering with access, possession and use of religious objects, and by consulting with Indian organizations regarding proposed actions affecting their religious freedom.

**O. Native American Graves and Repatriation Act, 25 U.S.C. § 3001, et seq. (applicable).** The Act prioritizes ownership or control over Native American cultural items, including human remains, funerary objects and sacred objects, excavated or discovered on Federal or tribal lands. Federal agencies and museums that have possession or control over Native American human remains and associated funerary objects are required under the Act to compile an inventory of such items and, to the extent possible, identify their geographical and cultural affiliation. Once

the cultural affiliation of such objects is established, the Federal agency or museum must expeditiously return such items, upon request by a lineal descendent of the individual Native American or tribe identified.

### **III. ACTION SPECIFIC REQUIREMENTS**

#### **A. Federal and State Water Requirements.**

**1. Clean Water Act Point Source Discharges requirements, 33 U.S.C. § 1342 (applicable).** Section 402 of the Clean Water Act, 33 U.S.C. § 1342, *et seq.*, authorizes the issuance of permits for the “discharge” of any “pollutant.” This includes storm water discharges associated with “industrial activity.” *See*, 40 CFR § 122.1(b)(2)(iv). “Industrial activity includes inactive mining operations that discharge storm water contaminated by contact with or that has come into contact with any overburden, raw material, intermediate products, finished products, byproducts or waste products located on the site of such operations, *see*, 40 CFR § 122.26(b)(14)(iii); landfills, land application sites, and open dumps that receive or have received any industrial wastes including those subject to regulation under RCRA subtitle D, *see*, 40 CFR § 122.26(b)(14)(v); and construction activity including clearing, grading, and excavation activities, *see*, 40 CFR § 122.26(b)(14)(x). Because the State of Montana has been delegated the authority to implement the Clean Water Act, these requirements are enforced in Montana through the Montana Pollutant Discharge Elimination System (MPDES). The MPDES requirements are set forth below.

**a. Substantive MPDES Permit Requirements, ARM §§ 17.30.1342-1344 (applicable).**

These set forth the substantive requirements applicable to all MPDES and NPDES permits. The substantive requirements, including the requirement to properly operate and maintain all facilities and systems of treatment and control are applicable requirements.

**b. Technology-Based Treatment, ARM §§ 17.30.1203 and 1344 (applicable).** Provisions of 40 CFR Part 125 for criteria and standards for the imposition of technology-based treatment requirements are adopted and incorporated in MDEQ permits. Although the permit requirement would not apply to on-site discharges, the substantive requirements of Part 125 are applicable, *i.e.*, for toxic and nonconventional pollutants treatment must apply the best available technology economically achievable (BAT); for conventional pollutants, application of the best conventional pollutant control technology (BCT) is required. Where effluent limitations are not specified for the particular industry or industrial category at issue, BCT/BAT technology-based treatment requirements are determined on a case by case basis using best professional judgment (BPJ). *See* CERCLA Compliance with Other Laws Manual, Vol. I, August 1988, p. 3-4 and 3-7.

**2. Additional State of Montana requirements.**

**a. Water Quality Statute and Regulations (all applicable).**

**i. Causing of Pollution, MCA § 75-5-605.** This section of the Montana Water Quality Act prohibits the causing of pollution of any state waters. Pollution is defined as contamination or other alteration of physical, chemical, or biological properties of state waters which exceeds that permitted by the water quality standards. Also, it is unlawful to place or caused to be placed any wastes where they will cause pollution of any state waters. Any permitted placement of waste is

not placement if the agency's permitting authority contains provisions for review of the placement of materials to ensure it will not cause pollution to state waters.

**ii. Nondegradation, MCA § 75-5-303.** This provision states that existing uses of state waters and the level of water quality necessary to protect the uses must be maintained and protected. Under MCA § 75-5-317, changes in existing water quality resulting from an emergency or remedial activity that is designed to protect the public health or the environment and is approved, authorized, or required by the department are considered nonsignificant activities, and are not subject to the nondegradation rules promulgated pursuant to MCA § 75-5-303.

**(a). ARM § 17.30.705.** This provides that for any surface water, existing and anticipated uses and the water quality necessary to protect these uses must be maintained and protected unless degradation is allowed under the nondegradation rules at ARM § 17.30.708.

**(b). ARM § 17.30.1011.** This provides that any groundwater whose existing quality is higher than the standard for its classification must be maintained at that high quality unless degradation may be allowed under the principles established in MCA § 75-5-303, and the nondegradation rules at ARM § 17.30.701, et seq.

**iv. Stormwater Runoff.**

**(a). ARM § 17.24.633.** All surface drainage from a disturbed area must be treated by the best technology currently available.

**(b). General Permits.** Under ARM § 17.30.601, et seq., and ARM § 17.30.1301, et seq., including ARM § 17.30.1332, the Water Quality Division has issued general storm water permits for certain activities. The substantive requirements of the following permits are applicable for the following activities: (a) for construction activities: General Discharge Permit for Storm Water Associated with Construction Activity, Permit No. MTR100000 (May 19, 1997); (b) for mining activities: General Discharge Permit for Storm Water Associated with Mining and with Oil and Gas Activities, Permit No. MTR300000 (September 10, 1997).<sup>11</sup> (c) for industrial activities: General Discharge Permit for Storm Water Associated with Industrial Activity, Permit No. MTR000000 (October 26, 1994).<sup>12</sup>

Generally, the permits require the permittee to implement Best Management Practices (BMP) and to take all reasonable steps to minimize or prevent any discharge which has a reasonable likelihood of adversely affecting human health or the environment. However, if there is evidence indicating potential or realized impacts on water quality due to any storm water discharge associated with the activity, an individual MPDES permit or alternative general permit may be required.

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<sup>11</sup> This permit covers point source discharges of storm water from mining and milling activities (including active, inactive, and abandoned mine and mill sites) including activities with Standard Industrial Code 14 (metal mining).

<sup>12</sup> Industrial activities are defined as all industries defined in 40 CFR §§ 122, 123, and 124, excluding construction, mining, oil & gas extraction activities and storm water discharges subject to effluent limitations guidelines. This includes wood treatment operations, as well as the production of slag.

v. **Surface Water, ARM § 17.30.637.** Prohibits discharges containing substances that will: (a) settle to form objectionable sludge deposits or emulsions beneath the surface of the water or upon adjoining shorelines; (b) create floating debris, scum, a visible oil film (or be present in concentrations at or in excess of 10 milligrams per liter) or globules of grease or other floating materials; (c) produce odors, colors or other conditions which create a nuisance or render undesirable tastes to fish flesh or make fish inedible; (d) create concentrations or combinations of materials which are toxic or harmful to human, animal, plant or aquatic life; or (e) create conditions which produce undesirable aquatic life.

**B. Federal and State RCRA Subtitle C Requirements, 42 U.S.C. Section 6921, et seq. (relevant and appropriate for solid wastes, applicable for hazardous wastes).** The presentation of RCRA Subtitle C requirements in this section assumes that there will be many solid wastes at the ARWW&S OU, and that some of these may be left in place in “waste management areas” as a result of this remedial action. Because of the similarity of these waste management areas to the RCRA “waste management unit,” certain discrete portions of the RCRA Subtitle C implementing regulations will be relevant and appropriate for the ARWW&S remedial action. Also, although it is unlikely that hazardous wastes still exist at the ARWW&S OU (these should have been addressed the Arbiter/Beryllium removal and Flue Dust remedial actions) this possibility has not yet been eliminated. Therefore, RCRA Subtitle C and implementing regulations are hereby designated as applicable for any hazardous wastes that are actively “managed” as part of the ARWW&S OU remedial action or that were “placed” or “disposed” after 1980. These RCRA C requirements are also applicable for continued operation and maintenance of the Arbiter/Beryllium waste repository. Also, should hazardous wastes be discovered as part of any remedial design or remedial action activity taken in connection with this ROD, EPA reserves the right to identify RCRA Subtitle C requirements in more detail at a later date. All federal RCRA Subtitle C requirements set forth below are incorporated by reference as State of Montana requirements as provided for under ARM § 17.54.112(6) unless mentioned otherwise below.

**1. 40 CFR Part 264 Subpart F. General Facility Standards.** This is potentially relevant and appropriate for solid wastes at this OU. Any waste management unit or similar area would be required to comply with the following requirements. These are not final cleanup standards for the ARWW&S OU.

a. **40 CFR § 264.92, .93. and .94.** Prescribes groundwater protection standards.

b. **40 CFR § 264.97.** Prescribes general groundwater monitoring requirements.

e. **40 CFR § 264.98.** Prescribes requirements for monitoring and detecting indicator parameters.

**2. Closure requirements.**

a. **40 CFR § 264.111.** This provides that the owner or operator of a hazardous waste management facility must close the facility in a way that minimizes the need for further maintenance, and controls or eliminates the leaching or escape of hazardous waste or its constituents, leachate, or runoff to the extent necessary to protect human health and the environment.

b. **40 CFR § 264.117.** This provision incorporates monitoring requirements in Part 264, including those mentioned at Part 264.97 and Part 264.303. It governs the length of the post-closure care period, permits a lengthened security period, and prohibits any use of the property which would disturb the integrity of the management facility.

c. **40 CFR § 264.310.** This specifies requirements for caps, maintenance, and monitoring after closure.

3. **40 CFR § 264.301.** Prescribes design and operating requirements for landfills.

a. **40 CFR § 264.301(a).** This provides for a single liner and leachate collection and removal system.

b. **40 CFR § 264.301(f).** This requires a run-on control system.

c. **40 CFR § 264.301(g).** This requires a run-off management system.

d. **40 CFR § 264.301(h).** This requires prudent management of facilities for collection and holding of run-on and run-off.

e. **40 CFR § 264.301(i).** This requires that wind dispersal of particulate matter be controlled.

C. **Federal and State RCRA Subtitle D and Solid Waste Requirements (applicable).** 40 CFR Part 257 establishes criteria under Subtitle D of the Resource Conservation and Recovery Act for use in determining which solid waste disposal facilities and practices pose a reasonable probability of adverse effects on health or the environment. See 40 CFR § 257.1(a). This part comes into play whenever there is a “disposal” of any solid or hazardous waste from a “facility.” “Disposal” is defined as “the discharge, deposit, injection, dumping, spilling, leaking, or placing of any solid waste or hazardous waste into or on any land or water so that such solid waste or hazardous waste or any constituent thereof may enter the environment or be emitted into the air or discharged into any waters, including ground waters.” See 40 CFR § 257.2. “Facility” means “any land and appurtenances thereto used for the disposal of solid wastes.” Solid waste requirements are listed herein because there may be disposal of solid wastes as a result of this remedial action.

1. **Federal Requirements - 40 CFR § 257.** Criteria for Classification of Solid Waste Disposal Facilities and Practices. The activities to be performed for the ARWW&S OU remedial action are expected to comply with the following requirements.

a. **40 CFR § 257.3-1.** Washout of solid waste in facilities in a floodplain posing a hazard to human life, wildlife, or land or water resources shall not occur.

b. **40 CFR § 257.3-2.** Facilities shall not contribute to the taking of endangered species or the endangering of critical habitat of endangered species.

c. **40 CFR § 257.3-3.** A facility shall not cause a discharge of pollutants, dredged or fill material, into waters of the United States in violation of sections 402 and 404 of the Clean Water Act, as amended, and shall not cause non-point source pollution, in violation of applicable legal requirements implementing an area wide or statewide water quality management plan that has been approved by the Administrator under Section 208 of the Clean Water Act, as amended.

d. **40 CFR § 257.3-4.** A facility shall not contaminate an underground source of drinking water beyond the solid waste boundary or beyond an alternative boundary specified in accordance with this section.

e. **40 CFR § 257.3-8(d).** Access to a facility shall be controlled so as to prevent exposure of the public to potential health and safety hazards at the site.

## 2. **State of Montana Solid Waste Requirements (applicable).**

a. **ARM § 17.50.505(1) and (2).** Sets forth standards that all solid waste disposal sites must meet, including the requirements that (1) Class II landfills must confine solid waste and leachate to the disposal facility. If there is the potential for leachate migration, it must be demonstrated that leachate will only migrate to underlying formations which have no hydraulic continuity with any state waters; (2) adequate separation of group II wastes from underlying or adjacent water must be provided; and (3) no new disposal units or lateral expansions may be located in wetlands. ARM § 17.50.505 also specifies general soil and hydrogeological requirements pertaining to the location of any solid waste management facility.

b. **ARM § 17.50.506.** Specifies design requirements for landfills. Landfills must either be designed to ensure that MCLs are not exceeded or the landfill must contain a composite liner and leachate collection system which comply with specified criteria.

c. **ARM § 17.50.510.** Sets forth general operational and maintenance and design requirements for solid waste facilities using land filling methods. Specific operational and maintenance requirements specified in ARM § 17.50.510 that are applicable are run-on and run-off control systems requirements, requirements that sites be fenced to prevent unauthorized access, and prohibitions of point source and nonpoint source discharges which would violate Clean Water Act requirements.

d. **MCA § 75-10-121 and ARM § 17.50.523.** For solid wastes, MCA § 75-10-212 prohibits dumping or leaving any debris or refuse upon or within 200 yards of any highway, road, street, or alley of the State or other public property, or on privately owned property where hunting, fishing, or other recreation is permitted. ARM § 17.50.523 specifies that solid waste must be transported in such a manner as to prevent its discharge, dumping, spilling or leaking from the transport vehicle.

e. **MCA § 75-10-206.** Provides for a variance from solid waste requirements where such variance would not result in a danger to public health or safety. EPA invokes the variance with respect to some or all of the solid waste provisions listed above and finds that variance from these requirements will not result in danger to public health or safety.

f. **ARM § 17.50.530.** Sets forth the closure requirements for landfills. Class II landfills must meet the following criteria: (1) install a final cover that is designed to minimize infiltration and erosion; (2) design and construct the final cover system to minimize infiltration through the closed unit by the use of an infiltration layer that contains a minimum 18 inches of earthen material and has a permeability less than or equal to the permeability of any bottom liner, barrier layer, or natural subsoils or a permeability no greater than  $1 \times 10^{-5}$  cm/sec, whichever is less; (3) minimize erosion of the final cover by the use of a seed bed layer that contains a minimum of six inches of earthen material that is capable of sustaining native plant growth and protecting the infiltration layer from frost effects and rooting damage; (4) revegetate the final cover with native plant growth within one year of placement of the final cover.

g. **ARM § 17.50.531.** Sets forth post closure care requirements for Class II landfills. Post closure care must be conducted for a period sufficient to protect human health and the environment. Post closure care requires maintenance of the integrity of the integrity and effectiveness of any final cover, including making repairs to the cover as necessary to correct the effects of settlement, subsidence, erosion, or other events, and preventing run-on and run-off from eroding or otherwise damaging the cover and comply with the groundwater monitoring requirements found at ARM Title 17, chapter 50, subchapter 7.

D. **Surface Mining Control and Reclamation Act, 30 U.S.C. §§ 1201-1326 (relevant and appropriate).** This Act and implementing regulations found at 30 CFR Parts 784 and 816 establish provisions designed to protect the environment from the effects of surface coal mining operations, and to a lesser extent non-coal mining. These requirements are relevant and appropriate to the covering of discrete areas of contamination. The regulations require that revegetation be used to stabilize soil covers over reclaimed areas. They also require that revegetation be done according to a plan which specifies schedules, species which are diverse and effective, planting methods, mulching techniques, irrigation if appropriate, and appropriate soil testing. Reclamation performance standards are currently relevant and appropriate to mining waste sites.

E. **Montana Strip and Underground Mine Reclamation Act, MCA § 82-4-201, et seq., (all relevant and appropriate) and Montana Metal Mining Reclamation Act, MCA § 82-4-301, et seq., (relevant and appropriate).** Certain discrete portions of the following statutory or regulatory provisions are relevant and appropriate requirements.

1. **MCA § 82-4-231.** Requires operators to reclaim and revegetate affected lands using most modern technology available. Operators must grade, backfill, topsoil, reduce high walls, stabilize subsidence, control water, minimize erosion, subsidence, land slides, and water pollution.

2. **MCA § 82-4-233.** Operators must plant vegetation that will yield a diverse, effective, and permanent vegetative cover of the same seasonal variety native to the area and capable of self-regeneration.

3. **MCA § 82-4-336 (Montana Metal Mine Reclamation Act).** Disturbed areas must be reclaimed to utility and stability comparable to areas adjacent.



4. **ARM § 17.24.501(3)(a) and (d) and (4)**. Backfill must be placed so as to minimize sedimentation, erosion, and leaching of acid or toxic materials into waters, unless otherwise approved.
5. **ARM § 17.24.501(A)(1)a and (2)**. Final graded slopes will be 5:1 unless otherwise approved. If steeper, slopes must have a long term static safety factor of 1:3, not to exceed the angle of repose unless the existing grade of the area is steeper, in which case the existing grade meets this requirement. Disturbed areas must be blended with undisturbed ground to provide a smooth transition in topography.
6. **ARM § 17.24.514**. Final grading will be done along the existing contour in order to minimize subsequent erosion and instability, unless otherwise approved.
7. **ARM § 17.24.519**. Pertinent areas of the ARWW&S OU where excavation will occur will be regraded to minimize settlement.
8. **ARM § 17.24.631(1), (2), (3)(a) and (b)**. Disturbances to the prevailing hydrologic balance will be minimized. Changes in water quality and quantity, in the depth to groundwater and in the location of surface water drainage channels will be minimized, to the extent consistent with the selected remedial alternatives. Other pollution minimization devices must be used if appropriate, including stabilizing disturbed areas through land shaping, diverting runoff, planting quickly germinating and growing stands of temporary vegetation, regulating channel velocity of water, lining drainage channels with rock or vegetation, mulching, and control of acid-forming, and toxic-forming waste materials.
9. **ARM § 17.24.633**. Surface drainage from a disturbed area must be treated by the best technology currently available (BTCA). Treatment must continue until the area is stabilized.
10. **ARM § 17.24.634**. Disturbed drainages will be restored to the approximate pre-disturbance configuration, to the extent consistent with the selected remedial alternatives. Drainage design must emphasize channel and floodplain dimensions that approximate the pre-mining configuration and that will blend with the undisturbed drainage above and below the area to be reclaimed. The average stream gradient must be maintained with a concave longitudinal profile. This regulation provides specific requirements for designing the reclaimed drainage to: (1) meander naturally; (2) remain in dynamic equilibrium with the system; (3) improve unstable premining conditions; (4) provide for floods; and (5) establish a premining diversity of aquatic habitats and riparian vegetation.
11. **ARM §§ 17.24.635 through 17.24.637**. Set forth requirements for temporary and permanent diversions.
12. **ARM § 17.24.638**. Sediment control measures must be implemented during operations.
13. **ARM § 17.24.639**. Sets forth requirements for construction and maintenance of sedimentation ponds.

14. **ARM § 17.24.640.** Discharges from sedimentation ponds, permanent and temporary impoundments, must be controlled to reduce erosion and enlargement of stream channels, and to minimize disturbance of the hydrologic balance.
15. **ARM § 17.24.641.** Practices to prevent drainage from acid or toxic forming spoil material into ground and surface water will be employed.
16. **ARM §§ 17.24.643 through 17.24.646.** Provisions for groundwater protection, groundwater recharge protection, and groundwater and surface water monitoring.
17. **ARM §§ 17.24.701 and 702.** Requirements for redistributing and stockpiling of soil for reclamation. Also, outline practices to prevent compaction, slippage, erosion, and deterioration of biological properties of soil will be employed.
18. **ARM § 17.24.703.** When using materials other than, or along with, soil for final surfacing in reclamation, the operator must demonstrate that the material (1) is at least as capable as the soil of supporting the approved vegetation and subsequent land use, and (2) the medium must be the best available in the area to support vegetation. Such substitutes must be used in a manner consistent with the requirements for redistribution of soil in ARM § 17.24.701 and 702.
19. **ARM § 17.24.711.** Requires that a diverse, effective and permanent vegetative cover of the same seasonal variety and utility as the vegetation native to the area of land to be affected must be established. This provision would not be relevant and appropriate in certain instances, for example, where there is dedicated development.
20. **ARM § 17.24.713.** Seeding and planting of disturbed areas must be conducted during the first appropriate period for favorable planting after final seedbed preparation but may not be more than 90 days after soil has been replaced.
21. **ARM § 17.24.714.** Mulch or cover crop or both must be used until adequate permanent cover can be established.
22. **ARM § 17.24.716.** Establishes method of revegetation.
23. **ARM § 17.24.718.** Requires soil amendments, irrigation, management, fencing, or other measures, if necessary to establish a diverse and permanent vegetative cover.
24. **ARM § 17.24.721.** Specifies that rills or gullies deeper than nine inches must be stabilized. In some instances shallower rills and gullies must be stabilized.
25. **ARM § 17.24.723.** States that operators shall conduct approved periodic measurements of vegetation, soils, water, and wildlife during the period of liability.
26. **ARM § 17.24.724.** Specifies that revegetation success must be measured by approved unmined reference areas. There shall be at least one reference area for each plant community type. Required management for these reference areas is set forth.
27. **ARM § 17.24.726.** Sets the required methods for measuring productivity.

28. **ARM § 17.24.728.** Sets requirements for measurements of the permanence of vegetation on reclaimed areas.
29. **ARM §§ 17.24.730 and 17.24.731.** Provide that the revegetated area must furnish palatable forage in comparable quantity and quality during the same grazing period as the reference area. If toxicity to plants or animals is suspected, comparative chemical analyses may be required.
30. **ARM § 17.24.733.** Provides additional requirements and measurement standards for trees, shrubs and half-shrubs.
31. **ARM § 17.24.751.** Measures to prevent degradation of fish and wildlife habitat will be employed.
32. **ARM § 17.24.761.** This specifies fugitive dust control measures which will be employed during excavation and construction activities to minimize the emission of fugitive dust in the ARWW&S OU. These provisions are addressed below in Section III.C.
33. **ARM § 17.24.824.** Post-mining land use must be judged on the highest and best use that can be achieved and is compatible with surrounding areas.

**F. Air Requirements (all applicable).**

1. **ARM § 17.8.308(2), (3), and (4).** Airborne particulate matter. There shall be no production, handling, transportation, or storage of any material, use of any street, road, or parking lot, or operation of a construction site or demolition project unless reasonable precautions are taken to control emissions of airborne particles. Emissions shall not exhibit an opacity exceeding 20% or greater averaged over 6 consecutive minutes.
2. **ARM § 17.8.304(2).** Visible Air Contaminants. Emissions into the outdoor atmosphere shall not exhibit an opacity of 20% or greater averaged over 6 consecutive minutes.
3. **ARM § 17.8.315(1).** Nuisance or odor bearing gases. Gases, vapors and dusts will be controlled such that no public nuisance is caused within the ARWW&S OU.
4. **ARM § 17.24.761(2)(a), (e), (h), (j), and (k).** Fugitive dust control measures such as 1) watering, stabilization, or paving of roads, 2) vehicle speed restrictions, 3) stabilization of surface areas adjoining roads, 4) restriction of travel on other than authorized roads, 5) enclosing, covering, watering, or otherwise treating loaded haul truck, 6) minimizing area of disturbed land, and 7) revegetation, must be planned and implemented, if any such measure or measures are appropriate for this remedial action.

**G. Air Quality Requirements (applicable).**

Remedial activities will comply with the following requirements to ensure that existing air quality will not be adversely affected by the ARWW&S OU remedial action.

1. **ARM § 17.8.222.** The concentration of lead in ambient air shall not exceed a 90 day average of 1.5 micrograms per cubic meter of air.
2. **ARM § 17.8.220.** Settled particulate matter shall not exceed a 30 day average of 10 grams per square meter.
3. **ARM § 17.8.823.** The concentration of PM-10 in ambient air shall not exceed a 24 hour average of 150 micrograms per cubic meter of air and an annual average of 50 micrograms per cubic meter of air.

**H. Noxious Weeds, MCA § 7-22-2101(7)(a) and ARM § 4.5.201, et seq.** MCA § 7-22-2101(7)(a) defines "noxious weeds" as any exotic plant species established or that may be introduced in the state which may render land unfit for agriculture, forestry, livestock, wildlife, or other beneficial uses or that may harm native plant communities and that is designated: (i) as a statewide noxious weed by rule of the department; or (ii) as a district noxious weed by a board, following public notice of intent and a public hearing. Designated noxious weeds are listed in ARM § 4.5.201 through 4.5.204 and must be managed consistent with weed management criteria developed under MCA § 7-22-2109(2)(b).

#### **IV. TO BE CONSIDERED DOCUMENTS (TBCs).**

The use of documents identified as TBCs is addressed in the Introduction, above. A list of TBC documents is included in the Preamble to the NCP, 55 Fed. Reg. 8765 (March 8, 1990). Those documents, plus any additional similar or related documents issued since that time, will be considered by EPA and MDEQ during the conduct of the RI/FS, during remedy selection, and during remedy implementation.

#### **V. OTHER LAWS (NON-EXCLUSIVE LIST).**

CERCLA defines as ARARs only federal environmental and state environmental and siting laws. Remedial design, implementation, and operation and maintenance must nevertheless comply with all other applicable laws, both state and federal, if the remediation work is done by parties other than the federal government or its contractors.

The following "other laws" are included here to provide a reminder of other legally applicable requirements for actions being conducted at the reservoir sediments operable unit. They do not purport to be an exhaustive list of such legal requirements, but are included because they set out related concerns that must be addressed and, in some cases, may require some advance planning. They are not included as ARARs because they are not "environmental or facility siting laws." As applicable laws other than ARARs, they are not subject to ARAR waiver provisions.

Section 121(e) of CERCLA exempts removal or remedial actions conducted entirely on-site from federal, state, or local permits. This exemption is not limited to environmental or facility siting laws, but applies to other permit requirements as well.

##### **a) Other Federal Laws.**

**1. Occupational Safety and Health Regulations.** The federal Occupational Safety and Health Act regulations found at 29 CFR § 1910 are applicable to worker protection during conduct of RI/FS or remedial activities.

**b) Other State Laws.**

**1. Groundwater Act.** MCA § 85-2-505, precludes the wasting of groundwater. Any well producing waters that contaminate other waters must be plugged or capped, and wells must be constructed and maintained so as to prevent waste, contamination, or pollution of groundwater.

**2. Public Water Supply Regulations.** If remedial action at the site requires any reconstruction or modification of any public water supply line or sewer line, the construction standards specified in ARM § 17.38.101(3) must be observed.

**3. Groundwater Act.** MCA § 85-2-516 states that within 60 days after any well is completed a well log report must be filed by the driller with the DNRC and the appropriate county clerk and recorder.

**4. Water Rights.** MCA § 85-2-101 declares that all waters within the state are the state's property, and may be appropriated for beneficial uses. The wise use of water resources is encouraged for the maximum benefit to the people and with minimum degradation of natural aquatic ecosystems.

Parts 3 and 4 of Title 85, MCA, set out requirements for obtaining water rights and appropriating and utilizing water. All requirements of these parts are laws which must be complied with in any action using or affecting waters of the state. Some of the specific requirements are set forth below.

MCA § 85-2-301 provides that a person may only appropriate water for a beneficial use.

MCA § 85-2-302 specifies that a person may not appropriate water or commence construction of diversion, impoundment, withdrawal or distribution works therefor except by applying for and receiving a permit from the Montana Department of Natural Resources and Conservation. While the permit itself may not be required under federal law, appropriate notification and submission of an application should be performed and a permit should be applied for in order to establish a priority date in the prior appropriation system. A 1991 amendment imposes a fee of \$1.00 per acre foot for appropriations of ground water, effective until July 1, 1993.

MCA § 85-2-306 specifies the conditions on which groundwater may be appropriated, and, at a minimum, requires notice of completion and appropriation within 60 days of well completion.

MCA § 85-2-311 specifies the criteria which must be met in order to appropriate water and includes requirements that:

1. there are unappropriated waters in the source of supply;
2. the proposed use of water is a beneficial use; and

3. the proposed use will not interfere unreasonably with other planned uses or developments.

MCA § 85-2-402 specifies that an appropriator may not change an appropriated right except as provided in this section with the approval of the DNRC.

MCA § 85-2-412 provides that where a person has diverted all of the water of a stream by virtue of prior appropriation and there is a surplus of water, over and above what is actually and necessarily used, such surplus must be returned to the stream.

**5. Occupational Health Act, MCA § 50-70-101, et seq.** ARM § 17.74.101 addresses occupational noise. In accordance with this section, no worker shall be exposed to noise levels in excess of the levels specified in this regulation. This regulation is applicable only to limited categories of workers and for most workers the similar federal standard in 29 CFR § 1910.95 applies.

ARM § 17.74.102 addresses occupational air contaminants. The purpose of this rule is to establish maximum threshold limit values for air contaminants under which it is believed that nearly all workers may be repeatedly exposed day after day without adverse health effects. In accordance with this rule, no worker shall be exposed to air contaminant levels in excess of the threshold limit values listed in the regulation.

This regulation is applicable only to limited categories of workers and for most workers the similar federal standard in 29 CFR § 1910.1000 applies.

**6. Montana Safety Act.** MCA §§ 50-71-201, 202 and 203 state that every employer must provide and maintain a safe place of employment, provide and require use of safety devices and safeguards, and ensure that operations and processes are reasonably adequate to render the place of employment safe. The employer must also do every other thing reasonably necessary to protect the life and safety of its employees. Employees are prohibited from refusing to use or interfering with the use of safety devices.

**7. Employee and Community Hazardous Chemical Information Act.** MCA §§ 50-78-201, 202, and 204 state that each employer must post notice of employee rights, maintain at the work place a list of chemical names of each chemical in the work place, and indicate the work area where the chemical is stored or used. Employees must be informed of the chemicals at the work place and trained in the proper handling of the chemicals.

**APPENDIX A, Part 2**

**Update of Identification and Description of Applicable or Relevant and Appropriate  
Requirements for Record of Decision, Anaconda Smelter Superfund Site, Regional  
Water, Waste, and Soils Operable Unit, September 1998**



**I. CONTAMINANT SPECIFIC ARARs**

Changes to federal and State contaminant specific surface and ground water ARARs are summarized in Table 1, produced at Section 5 of the ROD, and reproduced below. This table supersedes the tables presented at pages A-4, A-5, and A-7 of the Identification of ARARs, Appendix A, to the 1998 ROD.

Table 1

Revised Remedial Action Goals/Performance Standards for Water Quality					
Anaconda Regional Water, Waste & Soils Operable Unit					
Record of Decision Amendment, September 2010					
	Surface Water			Groundwater	
	State <sup>(1)</sup>			State <sup>(1)</sup>	Federal <sup>(2)</sup>
Compound	Aquatic Life - Acute (ug/L)	Aquatic Life - Chronic (ug/L)	Human Health Standard (ug/L)	Human Health Standard (ug/L)	MCL, MCLG, or Action Level (ug/L)
Arsenic	340	150	10 <sup>a</sup>	10 <sup>a</sup>	10 <sup>a</sup>
Beryllium	None	None	4	4	4
Cadmium	2.13	0.27	5	5	5
Copper	14	9.33	1,000	1,000	1300 <sup>c</sup>
Iron	None	1,000	300	300 <sup>b</sup>	N/A
Lead	81.65	3.18	15	15	15 <sup>c</sup>
Zinc	120	110	2000	2000	N/A

Shaded cells indicate standards changed from the 1998 ROD. See discussion in Appendix A, Introduction.

Note: Hardness-dependent values (cadmium, copper, lead, and zinc) are adjusted for a hardness of 100 mg/L as CaCO<sub>3</sub>.  
a - This standard is waived for surface water and ground water within TI Zones as identified in the 2010 ARWW&S OU ROD Amendment.

b – Not identified in 1998 ROD. Based on Secondary Maximum Contaminant Level.

c - Indicates value is an action level as defined under the copper and lead rule.

1. Montana Numeric Water Quality Standards - Circular DEQ-7. August 2010.

<http://deq.mt.gov/wqinfo/Standards/default.mcp>x

2. National Primary Drinking Water Regulations; U.S. Environmental Protection Agency;  
<http://www.epa.gov/safewater/contaminants/index.html>; for MCLs, see 40 C.F.R. Parts 141 and 142.

**A. Revisions to Federal and State Groundwater ARARs.**

**i. State of Montana requirements.**

**a. ARM § 17.30.1002 and -1003 (all applicable).**

The Montana Water Quality Act, MCA § 75-5-101, et seq., and its implementing regulations establish requirements for restoring and maintaining the quality of surface and ground waters. Both the statute and its implementing regulations have had revisions since 1998, including the groundwater standards described here.

ARM 17.30.1002 and 17.30.1003 have been repealed and replaced by ARM 17.30.1005 and ARM 17.30.1006, set forth below. In addition, all State ground and surface water quality regulations now reference DEQ-7, rather than WQB-7 as set forth in the 1998 ROD. DEQ-7 was last updated in August 2010. Like ARM 17.30.1002 and 17.30.1003, ARM 17.30.1005 and ARM 17.30.1006 require that concentrations of dissolved substances in Class I or II groundwater not exceed the human health standards listed in DEQ-7. State standards for ground water are set forth in Table 3-1, above.

ARM 17.30.1005 explains the applicability and basis for the groundwater standards in ARM 17.30.1006, which establish the maximum allowable changes in groundwater quality and may limit discharges to groundwater.

ARM 17.30.1006 provides that groundwater is classified into Classes I through IV based on its specific conductance and establishes the applicable ground water quality standards with respect to each groundwater classification.

Concentrations of dissolved substances in Class I or II groundwater may not exceed the human health standards listed in department Circular DEQ-7.<sup>13</sup> These levels are listed for the primary contaminants of concern in Table 4-1 of the Decision Summary.

Response actions must meet the DEQ-7 standards for all contaminants at the site. In addition, for Class I and Class II ground water, no increase of a parameter may cause a violation of MCA § 75-5-303 (nondegradation).

ARM 17.30.1006 requires that concentrations of other dissolved or suspended substances must not exceed levels that render the waters harmful, detrimental or injurious to public health. Maximum allowable concentrations of these substances also must not exceed acute or chronic problem levels that would adversely affect existing or designated beneficial uses of groundwater of that classification.

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<sup>13</sup> Montana Department of Environmental Quality, Water Quality Division, Circular DEQ-7, Montana Numeric Water Quality Standards (August 2010).

ii. **Federal Requirements (relevant and appropriate).**

The Safe Drinking Water Act, 42 U.S.C. § 300f, et seq., and National Primary and Secondary Drinking Water Regulations, 40 CFR Parts 141 and 142 set forth maximum contaminant levels for drinking water. These have been revised and are set forth in the column for federal MCLs in the groundwater section of Table 3-1, above. These standards would be relevant and appropriate or potentially applicable as described at page A-4 of Appendix A to the original ROD, were it not for the State standards, which control..

B. **Revisions to Federal and State Surface Water ARARs.**

1. **State of Montana Surface Water Quality Requirements, Montana Water Quality Act, MCA § 75-5-101, et seq., and implementing regulations (applicable).**

The Montana Water Quality Act and its implementing regulations have been revised since 1998, including the surface water standards described here. ARM 17.30.623 has been revised, one change being the elimination of the language “after conventional water treatment” which previously qualified “concentrations of carcinogenic, bioconcentrating, toxic, radioactive, nutrient, or harmful parameters may not exceed the applicable standards set forth in department Circular DEQ-7.” ARM 17.30.637 has also been revised, one change being the elimination of language allowing for short term exemptions. ARM 17.30.705 has also been revised, however the regulation continues to require that existing and anticipated uses of surface water and water quality necessary to support those uses be maintained and protected.

2. **Federal Surface Water Quality Requirements, Clean Water Act, 33 U.S.C. §§ 1251, et seq. (applicable).** As provided under Section 303 of the Clean Water Act, 33 U.S.C. § 1313, the State of Montana has promulgated water quality standards. See the discussion above under State surface water quality requirements. Federal water quality criteria have changed since 1998, as shown in the columns in Table 3-1 for Federal Criteria Maximum Concentrations, and Criterion Continuous Concentrations, but these have been adopted by the State.

C. Revisions to **Federal and State Air Standards.**

1. **National Ambient Air Quality Standards, 40 CFR § 50.6 (PM-10); 40 CFR § 50.12 (lead) (applicable).** These provisions establish standards for PM-10 and lead emissions to air. (Corresponding state standards are found at ARM § 17.8.222 (lead) and ARM § 17.8.223 (PM-10).) The federal lead standard has been revised and is now set at 0.15 ug/m<sup>3</sup>.

2. The State air standards are unchanged.

II. **LOCATION SPECIFIC REQUIREMENTS**

1. **Federal location specific requirements (all applicable).** All federal location specific requirements at pages A-8 through A-9 and A-13 through A-14 are unchanged. Implementing regulations at 36 C.F.R. Part 800 which implement the National Historic Preservation Act, 16

U.S.C. § 470, and at 50 C.F.R. Parts 17 and 402, which implement the Endangered Species Act, 16 U.S.C. § 1531, have been revised. These revisions do not significantly change the application of these requirements. A number of the federal location specific requirements reference 40 C.F.R. Part 6. This has been significantly revised but the application of the provisions for which it has been referenced have not been significantly changed.

**2. Montana Natural Streambed and Land Preservation Act and Regulations, MCA § 75-7-101 and ARM §§ 36.2.404, 405, and 406 (applicable).** The Montana Natural Streambed and Land Preservation Act and regulations are applicable to remedial action that alters or affects a streambed or its banks. ARM 36.2.404 was repealed and replaced with ARM 36.2.410, with similar requirements.

ARM 36.2.410 establishes minimum standards which would be applicable if a response action alters or affects a streambed, including any channel change, new diversion, riprap or other streambank protection project, jetty, new dam or reservoir or other commercial, industrial or residential development. Projects must be designed and constructed using methods that minimize adverse impacts to the stream (both upstream and downstream) and future disturbances to the stream. All disturbed areas must be managed during construction and reclaimed after construction to minimize erosion. Temporary structures used during construction must be designed to handle high flows reasonably anticipated during the construction period. Temporary structures must be completely removed from the stream channel at the conclusion of construction, and the area must be restored to a natural or stable condition. Channel alterations must be designed to retain original stream length or otherwise provide hydrologic stability. Streambank vegetation must be protected except where removal of such vegetation is necessary for the completion of the project. When removal of vegetation is necessary, it must be kept to a minimum. Riprap, rock, and other material used in a project must be of adequate size, shape, and density and must be properly placed to protect the streambank from erosion. The placement of road fill material in a stream, the placement of debris or other materials in a stream where it can erode or float into the stream, projects that permanently prevent fish migration, operation of construction equipment in a stream, and excavation of streambed gravels are prohibited unless specifically authorized by the district. Such projects must also protect the use of water for any useful or beneficial purpose. See MCA § 75-7-102.

**3. Montana Solid Waste Management Act and regulations, MCA § 75-10-201, et seq., ARM § 17.50.505 (applicable).** The Montana Solid Waste Management Act and regulations set forth requirements applying to any solid waste management facility. Both the statute and its implementing regulations have had revisions since 1998, with significant repeals, revisions, and replacements of the solid waste regulations. ARM 17.50.505, now repealed, contained landfill location requirements; these are now found in Chapter 50, Subchapter 10.<sup>14</sup> Certain of the location specific requirements are set forth below.

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<sup>14</sup> Consult the Montana Administrative Register for a discussion of the repeals, revisions and replacements of the solid waste regulations. 2009 MAR pp. 164, 244-245 (February 26, 2009), 2010 MAR p. 317 (February 11, 2010).

ARM 17.50.1004, Floodplains. A facility located within the 100-year floodplain may not restrict the flow of the 100-year flood, reduce the temporary water storage capacity of the floodplain, or result in washout of solid waste that poses a hazard to human health or the environment.

ARM 17.50.1005, Wetlands. A facility may not be located in a wetland, unless there is an adequate demonstration of no practicable alternative and that the location will not cause an environmental impact.

ARM 17.50.1006, Fault Areas. A facility cannot be located within 200 feet (60 meters) of a fault that has had displacement in Holocene time without an adequate demonstration of the structural integrity and protection of human health and the environment.

ARM 17.50.1007 and ARM 17.50.1008, Seismic Areas and Unstable Areas. A facility may not be located in a seismic impact zone or an unstable area without an adequate demonstration by a Montana licensed engineer.

ARM 17.50.1009, Location Restrictions. Sets forth requirements applying to the location of any solid waste facility. Among other things, the location must have sufficient a amount of land, including adequate separation of wastes from underlying groundwater or adjacent surface water; be located in a manner that does not allow the discharge of pollutants in excess of state standards; and be located to allow for closure, post-closure care, and planned uses. The location may not cause or contribute to the taking of any endangered or threatened species of plants, fish, or wildlife, or result in the destruction or adverse modification of the critical habitat of endangered or threatened species. A Class III landfill may not restrict the flow of the 100-year flood, reduce the temporary water storage capacity of the floodplain, or result in washout of solid waste so as to pose a hazard to human health, wildlife, or land or water resources.

### **III. ACTION SPECIFIC REQUIREMENTS**

#### **A. Federal and State Water Requirements.**

##### **1. Clean Water Act Point Source Discharges requirements, 33 U.S.C. § 1342 (applicable).**

Because the State of Montana has been delegated authority to implement the Clean Water Act, these requirements are enforced in Montana through the Montana Pollutant Discharge Elimination System (MPDES). Revisions to the MPDES requirements are set forth below.

##### **2. Additional State of Montana requirements.**

###### **a. Water Quality Statute and Regulations (all applicable).**

The Montana Water Quality Act has had revisions since 1998, including the surface water requirements described here. MCA § 75-5-605 has changed, as the definition of pollution in the

act, incorporated into MCA § 75-5-605, expanded to also include the discharge, seepage, drainage of any substance into state waters that will likely create a nuisance or render the waters harmful, detrimental or injurious to public health, recreation, safety, welfare, livestock or wild animals.

**b. Stormwater Runoff.**

**General Permits.** Each of the general stormwater permits have been revised since the issuance of 1998 ROD. For construction activities: General Discharge Permit for Storm Water Associated with Construction Activity, Permit No. MTR100000 (April 16, 2007) for mining activities: General Discharge Permit for Storm Water Associated with Mining and with Oil and Gas Activities, Permit No. MTR300000 (January 1, 2008) for industrial activities: General Discharge Permit for Storm Water Associated with Industrial Activity, Permit No. MTR000000 (October 1, 2006).

**B. Federal and State RCRA Subtitle C Requirements, 42 U.S.C. Section 6921, et seq. (applicable through the authorized State RCRA program for hazardous wastes, relevant and appropriate for solid wastes).**

Since the issuance of the 1998 ROD, the State hazardous waste regulations have moved from ARM title 54 to ARM title 53. The State regulation which incorporates the federal RCRA Subtitle C requirements by reference is now ARM 17.53.105. Both federal and State regulations have had minor revisions since 1998 which do not significantly affect their application here.

**C. Federal and State RCRA Subtitle D and Solid Waste Requirements (all applicable).**

**1. Federal Solid Waste Requirements.** These requirements, set forth at RCRA Subpart D, 42 U.S.C. Subchapter IV, and 40 CFR Part 257, have not been significantly changed since 1998 in any way that would affect the remedy.

**2. State of Montana Solid Waste Requirements.**

As discussed above in the location specific solid waste ARARs, there have been significant repeals, revisions, and replacements of the solid waste regulations within the past year. ARM 17.50.505, now repealed, contained landfill location requirements; these are now found in Chapter 50, Subchapter 10, ARM 17.50.1002 - ARM 17.50.1009. ARM 17.50.506, now repealed, contained requirements for landfill design criteria; these are now found in Subchapter 12, ARM 17.50.1202 - ARM 17.50.1205. ARM 17.50.510, now repealed, contained requirements for landfill operating criteria; these are now found in Subchapter 11, ARM 17.50.1102, ARM 17.50.1105, ARM 17.50.1107, and ARM 17.50.1108. ARM 17.50.530 and ARM 17.50.531, now repealed, contained requirements for closure and post-closure care; these are now found in Subchapter 14, ARM 17.50.1402 - ARM 17.50.1404. Subchapter 13 contains requirements for ground water monitoring and corrective action. ARM 17.50.523, pertaining to transportation of solid waste, remains. Certain of the action specific requirements are set forth below.

ARM 17.50.1009, Location Restrictions. Requires that facilities not discharge pollutants in excess of state standards; requires drainage structures be installed to control surface water run-off from waste management areas and prevent surface water run-on into waste management areas; and management activities may not cause or contribute to the taking of any endangered or threatened species of plants, fish, or wildlife, or result in the destruction or adverse modification of the critical habitat of endangered or threatened species.

ARM 17.50.1104, Cover Material. Requires that a facility provide temporary cover.

ARM 17.50.1108, Access Requirements. Requires the control of public access as appropriate to protect human health and the environment.

ARM 17.50.1109, Run-On and Run-Off Control Systems. Requires the design, construction, and maintenance of a run-on control system to prevent flow onto the active portion of the solid waste facility during the peak discharge from a 25-year storm and a run-off control system from the active portion of the facility to collect and control at least the water volume result from a 24-hour, 25-year storm.

ARM 17.50.1110, Surface Water Requirements,. Prohibits any discharge of a pollutant from a facility to state waters, including wetlands, and prohibits any discharge from a facility of a nonpoint source of pollution to waters, including wetlands..

ARM 17.50.1111 Liquid Restrictions. Prohibits the placement of liquid waste.

ARM 17.50.1116, Operating Criteria. Requires that management of the facility be confined to areas that can be effectively maintained and operated.

ARM 17.50.1204, Design Requirements. Specifies design requirements for facilities. Facilities must be designed to ensure that standards are not exceeded in the uppermost aquifer.

17.50.1403, Closure Criteria. Requires (a) design and installation of a final cover system that is designed to minimize infiltration and erosion and have a permeability no greater than to the permeability of any bottom liner system or natural subsoils present, or a permeability no greater than  $1 \times 10^{-5}$  cm/sec, whichever is less; (b) minimization of infiltration by the use of an infiltration layer that contains at least 18 inches of earthen material; and (c) minimization of erosion of the final cover by the use of an erosion layer that contains at least six inches of earthen material that is capable of sustaining native plant growth.

ARM 17.50.1404, Post-Closure Criteria. Sets forth post closure care requirements for facilities. Post closure care must be conducted for a period necessary to protect human health and the environment. Post closure care requires maintenance of the integrity and effectiveness of any final cover, including making repairs to the cover as necessary to correct the effects of settlement, subsidence, erosion, or other events; preventing run-on



and run-off from eroding or otherwise damaging the cover; complying with groundwater monitoring requirements; and any other post-closure care requirements necessary to protect human health or the environment. During the post-closure care period adequate vegetative cover must be maintained, and the facility must be annually inspected.

**D. Montana Strip and Underground Mine Reclamation Act, MCA § 82-4-201, et seq., (all relevant and appropriate) and Montana Metal Mining Reclamation Act, MCA § 82-4-301, et seq., (relevant and appropriate).** The Montana Strip and Underground Mine Reclamation Act and Montana Metal Mining Reclamation Act sets forth requirements for mining in Montana. Both of the statutes have had revisions since 1998, including those described here.

MCA § 82-4-231 added a requirement for designing and constructing reclaimed channels of intermittent and perennial streams to ensure long-term stability.

MCA § 82-4-233, which requires operators to plant vegetation that will yield a diverse, effective, and permanent vegetative cover of the same seasonal variety native to the area and capable of self-regeneration, has been revised to provide more detail to the revegetation requirements.

MCA § 82-4-336 now specifies that reclamation plans need not require the removal of mine-related facilities which are valuable for postmining use. However, the postmining use of the mine-related facilities must be an approved use.

The implementing regulations have also had revisions since 1998, including those described here. Several of the reclamation regulations have been repealed since the issuance of the 1998 ROD. These include ARM 17.24.501A, ARM 17.24.514, ARM 17.24.728, ARM 17.24.730, ARM 17.24.733, and ARM 17.24.824. Yet upon their repeal, the Board of Environmental Review “disagree[d] that the proposed amendments do not provide sufficient standards with which to judge the success of reclamation. The amended rules would continue to provide standards for backfilling and grading (ARM 17.24.501), highwall reduction (ARM 17.24.515), drainage basins (ARM 17.24.634), soils (ARM 17.24.701 and 17.24.702), vegetation (ARM 17.24.711, 17.24.716, 17.24.717, 17.24.724 and 17.24.726) and wildlife (ARM 17.24.751).”<sup>15</sup> Certain reclamation regulations, including some of the regulations cited by the Board of Environmental Review, were promulgated or modified after issuance of the 1998 ROD.

ARM 17.24.634 has been modified to require disturbed drainages be restored to the approximate pre-disturbance configuration. Drainage design must emphasize channel and floodplain dimensions that approximate the pre-mining configuration and that will blend with the undisturbed drainage above and below the area to be reclaimed. The average stream gradient must be maintained with a concave longitudinal profile. This regulation provides specific requirements for designing the reclaimed drainage to: (1) approximate an appropriate geomorphic habit or characteristic pattern; (2) remain in dynamic equilibrium with the system without the use of artificial structural controls; (3) improve unstable premining conditions; (4) provide for floods and for the long-term stability of the landscape; and (5) establish a premining diversity of aquatic habitats and riparian vegetation.

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<sup>15</sup> 2004 MAR p. 2577 (October 21, 2004).

ARM 17.24.711 requires that a diverse, effective, and permanent vegetative cover of the same seasonal variety native to the area of land to be affected shall be established except on road surfaces and below the low-water line of permanent impoundments. See also MCA § 82-4-233, MCA (relevant and appropriate). Vegetative cover is considered of the same seasonal variety if it consists of a mixture of species of equal or superior utility when compared with the natural vegetation during each season of the year. This requirement may not be appropriate where other cover is more suitable for the particular land use or another cover is requested by the landowner.

ARM 17.24.717 relates to the planting of trees and other woody species if necessary, as provided in MCA § 82-4-233, to establish a diverse, effective, and permanent vegetative cover of the same seasonal variety native to the affected area and capable of self-regeneration and plant succession at least equal to the natural vegetation of the area, except that introduced species may be used in the revegetation process where desirable and necessary to achieve the approved land use plan.

ARM 17.24.718 requires that soil amendments be used as necessary to supplement the soil and to aid in the establishment of a permanent vegetative cover, only normal husbandry practices may be used to ensure the establishment of vegetation consistent with the approved plan, and reclamation land use practices including, but not limited to, grazing, haying, or chemical applications, may not be conducted in a manner or at a time that interferes with establishment and/or persistence of seeded and planted grasses, forbs, shrubs, and trees or with other reclamation requirements.

ARM 17.24.724 specifies that revegetation success must be measured against approved technical standards or unmined reference areas. Reference areas and standards must be representative of vegetation and related site characteristics occurring on lands exhibiting good ecological integrity. Required management for these reference areas is set forth.

ARM 17.24.726 requires standard and consistent field and laboratory methods to obtain and evaluate revegetated area data with reference area data and/or technical standards, and sets out the required methods for measuring productivity.

The following reclamation regulations have also been modified since issuance of the 1998 ROD: ARM 17.24.635 through 17.24.637, which sets forth requirements for temporary and permanent diversions; ARM 17.24.639, which sets forth requirements for construction and maintenance of sedimentation ponds; ARM 17.24.645 and ARM 17.24.646 which sets forth requirements for groundwater and surface water monitoring; ARM 17.24.701 and 702, which sets forth requirements for removal, redistributing, and stockpiling of soil for reclamation; ARM 17.24.714, which requires soil stabilizing practices; ARM 17.24.716, which establishes methods of revegetation; ARM 17.24.751 which establishes protection and enhancement of fish, wildlife, and related environmental values; and ARM 17.24.761 which sets forth fugitive dust control measures.

**E. Air Requirements (all applicable).**

ARM 17.8.315, pertaining to nuisance and odor bearing gases, has been repealed.

**F. Noxious Weeds, MCA § 7-22-2101(7)(a) and ARM § 4.5.201, et seq.**

ARM 4.5.201, et seq., has been revised and updated, including listed noxious weeds species.