UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8



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| IN THE MATTER OF:<br><br>SILVER BOW CREEK/<br>BUTTE AREA (ORIGINAL PORTION) SUPERFUND SITE;<br>WARM SPRINGS PONDS ACTIVE AREA<br>OPERABLE UNIT:<br>SITE NO. 22.<br>OPERABLE UNIT NO. 4.<br><br>ATLANTIC RICHFIELD COMPANY, and/or ATLANTIC RICHFIELD COMPANY, INCORPORATED,<br>RESPONDENT.<br><br>PROCEEDING UNDER SECTION 106(a) OF THE COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT, AS AMENDED, 42 U.S.C. § 9606(a). | EPA Docket No.<br>CERCLA-VIII-91-25 |

# ADMINISTRATIVE ORDER FOR REMEDIAL DESIGN/REMEDIAL ACTION

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## I. INTRODUCTION AND JURISDICTION

1. The United States Environmental Protection Agency (EPA) selected a remedy for the Silver Bow Creek/Butte Area (original portion) Superfund Site, Warm Springs Ponds Active Area operable unit (hereinafter "WSPA"), which is described in the Record of Decision dated September, 1990, as modified by the Explanation of Significant Differences dated June, 1991, including the errata sheet (hereinafter "ROD/ESD"). This Order directs Respondent to perform a remedial design for the WSPA ROD/ESD, and to implement the design by performing a remedial action and related operation and maintenance activities. This Order is issued to the Respondent by the EPA under the authority vested in the President of the United States by section 106(a) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (CERCLA), 42 U.S.C. § 9606(a). This authority was delegated to the Administrator of EPA on January 23, 1987, by Executive Order 12,580, 52 Fed. Reg. 2,923, and was further delegated to EPA Regional Administrators on September 13, 1987, by EPA Delegation No. 14-14-B. This authority has been further delegated to the Director of the Hazardous Waste Management Division, EPA Region 8.

## II. FINDINGS OF FACT

2. The Respondent, the Atlantic Richfield Company and/or the Atlantic Richfield Company, Incorporated, is a corporation doing business in the State of Montana. It is currently organized under the laws of the State of Delaware, with its corporate headquarters in Los Angeles, California.

3. The Warm Springs Ponds are a series of three large settling basins, known as Pond 1, Pond 2, and Pond 3, located near Warm Springs, Montana. The Ponds cover approximately 2600 acres of land, and are bordered by the Mill-Willow Bypass to the west, marsh lands to the north, hills to the east, and marsh lands and incoming streams to the south.

4. The Anaconda Copper Mining Company and/or its subsidiaries and related corporations and businesses (Anaconda) built Pond 1 and Pond 2 in or around 1911 and 1916 respectively, for the express purpose of trapping and managing mining wastes from mining operations in Butte and Anaconda, Montana. The Ponds operate by directing Silver Bow Creek into the Ponds for elementary treatment prior to release of water. Pond 3 was built by Anaconda in or around 1959, for the same purpose. The ponds are used as large settling basins, where some of the dissolved and suspended waste material is trapped and settled to the bottom of the basins. Currently, treated but still contaminated water is then discharged from the Ponds, into the nearby Mill-Willow Bypass. Anaconda owned and operated the Warm Springs Ponds from

the creation of the ponds until its merger with the Respondent in 1977. The Respondent has owned and operated the Warm Springs Ponds from 1977 until the present.

5. In the 1950's, Anaconda built the Mill-Willow Bypass, immediately to the west of the three ponds. The Mill-Willow Bypass was used to divert normal flows from Mill and Willow Creeks and high flows from Silver Bow Creek around the Pond system. The Mill-Willow Bypass was built through contaminated soils and tailings, and/or became contaminated through deposition of upstream wastes.

6. A map of the Warm Springs Ponds area, including WSPA, is attached as Exhibit 1. The Warm Springs Ponds area consists of the three settling ponds, three smaller wildlife refuge areas, dry areas of contaminated soil and tailings within Ponds 2 and 3, dry areas of contaminated soil and tailings outside of Ponds 2 and 3, and the Mill-Willow Bypass, as well as engineered devices such as lime treatment facilities and inflow and outflow points, which are located within or near Ponds 2 and 3.

7. Contaminated waste materials at the WSPA originated with mining operations in Butte and Anaconda, Montana. Among the major smelters and mills operated in and around Butte adjacent to Silver Bow Creek by predecessors-in-interest to the Respondent were the Colorado Smelter, the Butte and Boston Smelter, the Montana Ore Purchasing Company Smelter, the Parrott Smelter, and the Butte Reduction Works Mill and Smelter. These smelters and associated operations, as well as several other mines, mills, and smelters operated by Respondent and Respondent's predecessors-in-interest, processed hundreds of tons of ore each day and disposed of large quantities of tailings, slimes, and other beneficiation and processing wastes into and along the banks of Silver Bow Creek. These wastes entered into the creek and were carried downstream, to, among other places, the Warm Springs Ponds. Wastes disposed of from these Butte operations, including wastes in ponds built near these establishments, have continued to periodically leach or wash out into Silver Bow Creek. These smelters and associated operations came under the control of Amalgamated Copper Mining Company and/or Anaconda, predecessors-in-interest to the Respondent, as a result of various mergers, restructurings, transfers of assets, continuation of business activity, or other corporate action. After such mergers, restructurings, transfers of assets, continuation of business activity, or other corporate actions, Anaconda owned these properties, and the Respondent currently owns many of these properties, from which arsenic and heavy metals are leaching into Silver Bow Creek, and eventually enter, among other places, the Warm Springs Ponds.

8. As a result of one or more mergers, restructurings, transfers of assets, continuation of business activities, or other corporate action, the Respondent is the successor-in-interest to, and has assumed the liabilities incurred by, Anaconda and its subsidiaries. As a result of one or more mergers, restructurings, transfers of assets, continuation of business activities, or other corporate action, Anaconda was the successor-in-interest to, and assumed the liabilities incurred by, the Amalgamated Copper Mining Company and its subsidiaries. Additionally, the Amalgamated Copper Mining Company and Anaconda were the successor in interest to, and assumed the liabilities incurred by, several persons who owned and operated mines, mills, and smelters in and around Butte and Anaconda, Montana.

9. Anaconda and its subsidiaries also owned and operated the New Works Smelter and associated facilities in Anaconda, Montana. Activities at the New Works smelter and associated facilities also led to the disposal of mining waste into Warm Springs Ponds, either directly from Anaconda and Opportunity Ponds or via Silver Bow Creek.

10. As a result of the activities described in paragraphs 4 and 9 of this Order, over 19 million cubic yards of contaminated sediments exist in the Warm Springs Ponds, and a substantial volume of contaminated soils and tailings exist in areas surrounding the Warm Springs Ponds, including the Mill-Willow Bypass.

11. Pursuant to section 105 of CERCLA, 42 U.S.C. § 9605, EPA placed the Silver Bow Creek Superfund Site on the National Priorities List set forth at 40 C.F.R. Part 300, Appendix B, by publication in the Federal Register on September 3, 1983 (48 Fed. Reg. 4065). This listing included the areas in and around Silver Bow Creek, including the Warm Springs Ponds area. The Site was amended to include large areas in and around Butte, Montana on July 22, 1987 (52 Fed. Reg. 27627), and the name of the Site became the Silver Bow Creek/Butte Area Superfund Site. For administrative purposes, the Site is divided into the original portion (abbreviated as the SBCO Site) and the Butte portion (abbreviated as the SBCB Site). The WSPA is part of the SBCO Site.

12. EPA has divided the SBCO Site into operable units for response. The operable units are interim Warm Springs Ponds Active Area, interim Warm Springs Ponds Inactive Area, Streamside Tailings, Rocker Timber Framing and Treating Plant, Lower Area One (Expedited Response Action), Agricultural Lands, and Final Warm Springs Ponds. This Order addresses the interim remedy for the Warm Springs Ponds Active Area operable unit.

13. From on or about October 1984 to on or about May 1987, the State of Montana Department of Health and Environmental

Sciences (MDHES), operating under a cooperative agreement from EPA, undertook a Phase I Remedial Investigation (RI) for the SBCO Site. EPA conducted a Supplemental Study to the Phase I RI in 1986 and 1987. MDHES subsequently conducted a Phase II RI and a Feasibility Study (FS) for the Warm Springs Ponds area including the WSPA. All of these activities were done pursuant to CERCLA and the National Oil and Hazardous Substances Pollution Contingency Plan, 40 C.F.R. Part 300 (NCP).

14. In accordance with section 117 of CERCLA, 42 U.S.C. § 9617, MDHES and EPA published notice of the completion of the FS and of the proposed plan for remedial action for the Warm Springs Ponds area in October 1989 and provided an opportunity for public comment on the proposed remedial action.

15. EPA's remedial action decision for the WSPA is embodied in a ROD, executed on September 27, 1990, as amended by the ESD dated June 1991, including the ESD's errata sheet. The ROD and ESD are supported by an administrative record that contains the documents and information upon which EPA based the selection of the response action.

16. Various investigations, some of which are described in paragraph 13, at the WSPA have shown the presence of arsenic, cadmium, copper, iron, lead, manganese, mercury, zinc, and other contaminants. It is believed that silver and selenium are also present within the Ponds.

17. Surface water moving into and out of the WSPA presents a pathway of migration for the contaminants, and currently the Ponds do not accept and treat 100 year flood flows of contaminated surface water entering the WSPA. Point source discharges of contaminated surface water into Mill and Willow Creeks and the nearby Clark Fork River from Ponds 2 and 3 are of particular concern. Large areas of surface contamination, located within the Ponds and outside of the Ponds and in the Mill-Willow Bypass, and composed of contaminated soils and tailings, may subject humans and wildlife to risks from exposure. In particular, copper and zinc in soils and tailings may cause acute fish kills in and around the Warm Springs Ponds area. The Ponds also present the possibility of a catastrophic release of contaminated material, if the berms surrounding the Ponds give way due to a flood or an earthquake. Additional information on the human health and environmental risks at the Warm Springs Ponds active area are presented in the Warm Springs Ponds operable unit Public Health and Environmental Assessment, which is Appendix A to the 1989 Warm Springs Ponds Feasibility Study.

18. The ROD/ESD for the WSPA requires the following summarized activities:

a. Allow the ponds to remain in place - Ponds 2 and 3 will continue to function as treatment ponds until upstream sources of contamination are cleaned up;
b. Raise and strengthen pond berms according to specified criteria, which will protect against dam failure in the event of major earthquakes or floods, and increase the storage capacity of Pond 3 to receive and treat flows up to the 100-year flood;
c. Construct new inlet and hydraulic structures to prevent debris from plugging the Pond 3 inlet and to safely route flows in excess of the 100-year flood around the ponds;
d. Comprehensively upgrade the treatment capability of Ponds 2 and 3 to fully treat all flows up to 3,300 cubic feet per second (cfs) (100-year peak discharge) and construct spillways for routing excess flood water into the Mill-Willow Bypass channel;
e. Remove all remaining tailings and contaminated soils from the Mill Willow Bypass through the northern end of Pond 2, consolidate them over existing dry tailings and contaminated soils within the Pond 1 and/or Pond 3 berms and provide adequate cover material which will be revegetated;
f. Reconstruct, reclaim, and restore the Mill-Willow Bypass channel and armor the north-south berms of all ponds to safely route flows up to 70,000 cubic feet per second (one-half of the estimated probable maximum flood);
g. Flood (wet-close) all dry portions of Pond 2, or, if not wet closed, dry close and revegetate contaminated portions;
h. Establish surface and ground water quality monitoring systems and perform all other activities necessary to assure compliance with all applicable or relevant and appropriate requirements and other standards; and
i. Implement institutional controls to prevent future residential development, and other institutional control measures.

19. On May 23, 1990, the Respondent was issued Administrative Order on Consent Docket No. CERCLA VIII-90-15, and ordered to perform a portion of the WSPA ROD/ESD, pursuant to EPA's removal authorities. Activities pursuant to Administrative Order on Consent Docket No. CERCLA-VIII-90-15 and subsequent amendments began or completed Work for Items b, c, e, and f of Paragraph 18. The June, 1991 ESD declared EPA's intention to continue implementation of these items, including any operation and maintenance associated with the listed items, as well as Items a, d, g, h, and i of Paragraph 18.

20. a. Respondent is now, and has been since on or about 1977, the owner and operator of the Warm Springs Ponds facility, including the WSPA, and some of the Butte and Anaconda facilities.

b. The Respondent's predecessors-in-interest were, from on or about 1911 until 1977, the owner and operator of the Warm Springs Ponds facility, including the WSPA, and the Butte and Anaconda facilities, and the Respondent expressly or otherwise assumed liability incurred by the predecessors-in-interest. During that time, hazardous substances, including some or all of those described in this section, were released to and/or disposed of at the Site.

c. Alternatively, Respondent and Respondent's predecessors-in-interest, arranged, by contract or agreement or otherwise, for the disposal or treatment of hazardous substances owned or possessed by Respondent, Respondent's predecessors-in-interest, and others from Butte and Anaconda facilities at the Site, including the WSPA. Hazardous substances of the same kind as those owned or possessed by the Respondent and the Respondent's predecessors-in-interest are present at the Site.

## III. CONCLUSIONS OF LAW AND DETERMINATIONS

21. Based on the preceding Findings of Fact and the administrative record for the Site, EPA has made the following conclusions of law and determinations:

a. The Site, and the Butte, Montana and Anaconda, Montana facilities described in the Findings of Fact, are "facilities" as defined in section 101(9) of CERCLA, 42 U.S.C. § 9601(9);

b. Respondent is a "person" as defined in section 101(21) of CERCLA, 42 U.S.C. § 9601(21);

c. Respondent is a liable party under sections 104 and 107 of CERCLA, 42 U.S.C. §§ 9604 and 9607, and is subject to this Order under section 106(a) of CERCLA, 42 U.S.C. § 9606(a);

d. Substances found at the Site are "hazardous substances" as defined in section 101(14) of CERCLA, 42 U.S.C. § 9601(14);

e. The presence of hazardous substances at the Site and the past, present, or potential future spilling, leaking, pumping, emitting, discharging, escaping, leaching, or disposing of hazardous substances described in Section II of this Order constitutes an actual or threatened "release" as defined in section 101(22) of CERCLA, 42 U.S.C. § 9601(22);

f. The actual or threatened release of one or more hazardous substances from the facility may present an imminent and substantial endangerment to public health or welfare or the environment; and

g. The actions required by this Order are necessary to protect the public health and welfare and the environment.

## IV. NOTICE TO THE STATE

22. EPA has notified the State of Montana, through MDHES, of this action pursuant to section 106(a) of CERCLA, 42 U.S.C. § 9606(a), and provided for state involvement in the initiation, development, and selection of the remedial action in accordance with section 121(f) of CERCLA, 42 U.S.C. § 9621(f). EPA is the lead agency for coordinating, overseeing, and enforcing the response action required by this Order.

## V. ORDER

23. Respondent is hereby ordered to comply with this Order, including but not limited to, all Exhibits attached to this Order and all documents incorporated by reference into this Order. The Order includes, but is not limited to, an order to implement the WSPA ROD/ESD, which is incorporated into this Order by reference, an order to perform activities described in the Statement of Work, Exhibit 2 to this Order, an order to perform activities according to the schedule given in Exhibit 3 to this Order, and an order to comply with all Performance Standards, described in Exhibits 4 and 5 of this Order. The Order also includes an order to perform all activities described in the Comprehensive Work Plan, upon approval by EPA, and to perform all remedial action activities as described in the Final Design Report and the Construction Quality Assurance Plan in accordance with the schedules therein, upon approval by EPA, and to perform all Operation and Maintenance activities described in the O&M Plan, upon approval by EPA.

## VI. DEFINITIONS

24. Unless otherwise expressly provided herein, terms used in this Order which are defined in CERCLA or in regulations promulgated under CERCLA shall have the meaning assigned to them in CERCLA or such regulations. Whenever terms listed below are used in this Order or in the documents attached to this Order or incorporated by reference into this Order, the following definitions shall apply:

"**Contractor**" means any person, including the attorneys, contractors, subcontractors, consultants, or agents retained or hired by Respondent to undertake any Work under this Order.

"**Day**" means calendar day. In computing any period of time under this Order, where the last day would fall on a Saturday, Sunday, or federal holiday, the period shall run until the end of the next working day. Time will be computed in accordance with Rule 6 of the Federal Rules of Civil Procedure, unless otherwise specified.

"**Deliverable**" means any written product, including but not limited to, plans, reports, memoranda, data, and other documents that Respondent does or must submit to EPA under this Order.

"**NCP**" means the National Oil and Hazardous Substances Pollution Contingency Plan promulgated under Section 105 of CERCLA, 42 U.S.C. § 9605, and codified at 40 C.F.R. Part 300, including any amendments thereto.

"**Operation and Maintenance**" or "**O&M**" means all activities required under the Operation and Maintenance Plans developed by Respondent pursuant to this Order and approved by EPA.

"**Order**" means this Order, the exhibits attached to this Order, and all documents incorporated into this Order by reference or according to the procedures set forth herein.

"**Performance Standards**" means those cleanup standards, standards of control, and other substantive requirements, criteria or limitations, identified in the September, 1990 ROD as modified by the June, 1991 ESD, including the errata sheet, and elsewhere, and which are listed in Exhibits 4 and 5 to this Order, that the remedial action and other Work performed under this Order must comply with, attain, and maintain.

"**ROD/ESD**" means the EPA Record of Decision for the for Operable Unit No. 04 of the SBCO Superfund Site, signed on September 27, 1990 by the Regional Administrator, EPA Region 8, and all attachments thereto, as amended by the June, 1991 Explanation of Significant Differences, including the errata sheet.

"**Remedial Action**" or "**RA**" means those activities, except for operation and maintenance, to be undertaken by Respondent to implement the final plans and specifications submitted by Respondent pursuant to the this Order and the SOW, including any additional activities required under Sections X, XI, XII, XIII, and XIV of this Order. Remedial Action does not include cleanup activities undertaken by the Respondent pursuant to Administrative Order on Consent Docket No. CERCLA-VIII-90-15.

"**Remedial Design**" or "**RD**" means those activities to be undertaken by Respondent to develop the final plans and specifications for the remedial action pursuant to this Order and the SOW.

"**Response Costs**" means all costs, including direct costs, indirect costs, and accrued interest incurred by the United States to perform or support response actions at the Site. Response costs include, but are not limited to, the costs of overseeing the Work, such as the costs of reviewing or developing plans, reports, and other items pursuant to this Order, and costs associated with verifying the Work.

"**Respondent**" means the Atlantic Richfield Company and/or the Atlantic Richfield Company, Incorporated.

"**Statement of Work**" or "**SOW**" means the statement of work attached hereto as Exhibit 2 and incorporated herein by reference.

"**Site**" means the Warm Springs Ponds Active Area of the Silver Bow Creek/Butte Area (original portion) Superfund Site, located near Warm Springs, Montana, as described in the ROD/ESD, and all areas in close proximity to, but not necessarily contiguous with, the areas described above that EPA determines to be necessary for implementation of the Work. The Site is depicted generally in Exhibit 1 to this Order.

"**Work**" means all activities Respondent is required to perform under this Order, including remedial design, remedial action, operation and maintenance, and any other activities necessary to fulfill the requirements of this Order.

## VII. NOTICE OF INTENT TO COMPLY

25. Respondent shall provide, not later than 5 days after the effective date of this Order, written notice to EPA stating whether it will comply with this Order. If Respondent does not unequivocally commit to perform the RD and RA as provided by this Order, it shall be deemed to have violated this Order and to have failed or refused to comply with this Order. Respondent's written notice shall describe, based on facts that exist on or prior to the effective date of this Order, any "sufficient cause" defenses asserted by Respondent under sections 106(b) and 107(c)(3) of CERCLA, 42 U.S.C. §§ 9606(b) and 9607(c)(3). The absence of a response by EPA to the notice required by this paragraph shall not be deemed to be acceptance of Respondent's assertions.

## VIII. PARTIES BOUND

26. This Order shall apply to and be binding upon the Respondent and its directors, officers, employees, agents, successors, and assigns. No change in the ownership, corporate status, or other control of the Respondent, nor any transfer of assets or real or personal property by the Respondent, shall alter any of the Respondent's responsibilities and obligations under this Order.

27. During the period in which this Order is in effect, Respondent shall provide a copy of this Order to any prospective owners or successors before a controlling or majority interest in Respondent's assets or stock is transferred to the prospective owner or successor. Respondent shall provide a copy of this Order to each contractor and laboratory retained to perform any Work under this Order, within 15 days after the effective date of this Order or on the date such services are retained. Respondent shall also provide a copy of this Order to each person representing Respondent with respect to the Work. Respondent shall condition all contracts and subcontracts entered into hereunder upon performance of the Work in conformity with this Order. Each contractor retained to perform Work shall be deemed to be related by contract to Respondent within the meaning of section 107(b)(3) of CERCLA, 42 U.S.C. § 9607(b)(3). Notwithstanding the terms of any contract, Respondent is responsible for compliance with this Order and for ensuring that its contractors comply with this Order, and perform any Work in accordance with this Order.

28. Within 15 days after the effective date of this Order, Respondent shall record a copy or copies of this Order in the appropriate governmental office where land ownership and transfer records are filed or recorded, and shall ensure, if possible, that the recording of this Order is indexed to the titles of each and every property at the Site so as to provide notice to third

parties of the issuance and terms of this Order with respect to those properties. Respondent shall, within 21 days after the effective date of this Order, send notice of such recording and indexing to EPA.

29. Not later than 30 days prior to any transfer of any real or personal property interest in any property included within the Site, Respondent shall submit a true and correct copy of the transfer document(s) to EPA, and shall identify the transferee by name and principal business address, and shall specify the effective date of the transfer. Respondent shall provide a copy of this Order to any such transferee, prior to the transfer of real or personal property at the Site.

## IX. WORK TO BE PERFORMED

30. Respondent shall plan, implement, perform, and complete all actions required by this Order, including actions required by Exhibits to this Order, in accordance with the standards, criteria, specifications, requirements, and schedules set forth herein and in the attached Exhibits. All Work under this Order is subject to oversight by and the prior approval of EPA. Undertaking any on-Site physical activity without prior approval of EPA is a violation of this Order, with the exception that ongoing work undertaken according to Administrative Order on Consent Docket No. CERCLA-VIII-90-15 may proceed pursuant to the terms of that order.

31. Comprehensive Work Plan Development

a. The Settling Defendant shall submit a draft and final Comprehensive Work Plan (CWP), according to the schedule set forth in Exhibit 3. The CWP shall describe the design of the Remedial Action at the Site, the performance of Remedial Action at the Site, and the performance of Operation and Maintenance at the Site, and other related plans and activities specified in the SOW. The CWP shall comply with and include all activities described in the SOW, Exhibit 2, and provide for design of the remedy set forth in the WSPA ROD/ESD.

b. The CWP shall include a Site Health and Safety Plan for all field activities which conforms to the applicable Occupational Safety and Health Administration and EPA requirements including, but not limited to, 29 C.F.R. § 1910.120. The CWP shall also include the Respondent's designation of the RD/RA Project Manager, the RD/RA Professional, and the Independent Quality Assurance Team, and relevant information sufficient to aid EPA's review and approval of these personnel. The CWP shall also include a Sampling and Analysis Plan (SAP), as described in Exhibit 2.

c. Upon approval by EPA, the Final CWP is incorporated into this Order as a requirement of this Order, and shall be an enforceable part of this Order. Upon approval by EPA, the Respondent shall implement the Final CWP according to the schedules contained therein and in Exhibit 3.

32. Remedial Design

a. The CWP shall include plans and schedules for implementation of all remedial design and pre-design tasks identified in the SOW, including, but not limited to, plans and schedules for the completion of: (1) All subtasks required to successfully complete RD/RA objectives; (2) Any activities necessary for obtaining any necessary permits for Work conducted off-Site and governmental approvals; (3) The Preliminary Design Report; (4) The Draft Final Design Report; (5) The Final Design Report (FDR); (6) Any activities necessary for the procurement of responsible contractor(s) to perform the Remedial Action; (7) The monitoring plans with specific performance criteria to determine the effectiveness of implemented remedy; (8) Submittal of an updated HSP prior to beginning on-Site Work; (9) Submittal of an updated SAP, if necessary; (10) Activities necessary to develop a description of the responsibilities of the Independent Quality Assurance Team, including the Construction Quality Assurance Officer; (11) the draft and Final Construction Quality Assurance Plan; (12) the Institutional Control Compliance Demonstration Report; (13) the draft and Final Performance Standard Report; and (14) the draft and Final Operation and Maintenance Plan (O&MP). The schedule for submittal of these reports shall be in compliance with Exhibit 3.

b. The Preliminary Design Report shall include, at a minimum, the following: (1) design criteria; (2) results of additional field sampling; (3) preliminary design calculations, schematics, layouts, and related documents for major components of the Work; (4) a discussion of the proposed hydraulic and treatment operation of the system; and (5) status and strategy for obtaining any necessary water rights.

c. The draft Final Design Report and the Final Design Report shall include, at a minimum, the following: (1) final plans and specifications; (2) an updated HSP and SAP; (3) a complete description and updated schedule of Remedial Action tasks and document deliverables and a detailed construction schedule, which includes start and stop dates for construction of the lime treatment system, dry or wet closure of exposed areas in and around Pond 2, and reclamation, restoration, and/or reconstruction of portions of the Mill-Willow Bypass; (4) an analysis of compliance with all Performance Standards; and (5) if appropriate, a description of the name and qualifications of the Remedial Action Contractor(s) required for this action.

33. Remedial Action

a. Within 30 days after receipt of EPA comments on the draft Final Design Report, Settling Defendant shall submit to EPA and MDHES a Final Design Report and a draft Construction Quality Assurance Plan for the performance of the Remedial Action at the Site ("CQAP"). The Final CQAP shall be submitted within 20 days after receipt of EPA comments on the draft CQAP. The CQAP shall, among other things, detail the approach to quality assurance during construction activities at the Site, and shall describe the responsibilities of the Construction Quality Assurance Officer and other members of the IQAT. The CQAP and the Final Design Report shall provide for construction of the remedy, in accordance with the SOW and the CWP, as set forth in the design plans and specifications in the approved FDR.

b. Upon approval by EPA, the Final Design Report, including the detailed schedule, and the Final CQAP are incorporated into this Order as requirements of this Order, and shall be enforceable parts of this Order. Upon approval by EPA of the FDR, the CQAP, and the Remedial Action Contractor, the Respondent shall implement the FDR and the CQAP according to the schedules contained therein and in Exhibit 3.

34. Operation and Maintenance

a. A draft O&M Plan, which describes both Phase I and Phase II of O&M, shall be submitted by the Respondent 90 days after receipt of EPA comments on the draft Final Design Report. A Final O&M Plan shall be submitted by the Respondent 30 days after receipt of EPA comments on the draft O&M Plan.

b. Upon approval of the O&M Plan, and, for Phase I O&M, upon approval of the certification of completion of initial construction, and for Phase II O&M, upon approval of the certification of completion of remedial action, the Respondent shall implement all O&M activities. Upon approval by EPA, the O&M Plan, is incorporated into this Order as a requirement of this Order, and shall be an enforceable part of this Order.

35. Unless otherwise directed by EPA, Settling Defendant shall not commence physical on-Site activities described in the Work Plan at the Site prior to approval of the Final Design Report and the CQAP. This limitation upon physical on-Site activities shall not apply to response actions previously approved by EPA under the Mill-Willow Bypass Expedited Response (Removal) Action Consent Order, Docket No. CERCLA VIII-90-15, and amendments thereto.

36. All Work shall be conducted and completed in accordance with CERCLA, the NCP, pertinent EPA guidance, and any amendments thereto which become effective prior to the date of completion of

Work under this Order. Respondent shall be responsible for identifying and using other guidelines, policies, procedures, and information that may be appropriate for performing Work.

37. All Work shall be consistent with the ROD/ESD and the Performance Standards set forth and described in Exhibits 4 and 5, including all applicable or relevant and appropriate requirements (ARARs) identified therein. Nothing in this Order, nor in EPA's approval of any document prepared by the Respondent under this Order, shall be deemed to constitute a warranty or representation of any kind by EPA that full performance of the RD or RA will achieve Performance Standards. Respondent's compliance with such approved documents does not foreclose EPA from seeking additional Work to achieve Performance Standards. Respondent remains fully responsible for achievement of the Performance Standards.

38. Respondent shall employ sound scientific, engineering, and construction practices in performing Work under this Order. All tasks shall be under the direction and supervision of qualified personnel with experience in the types of tasks required for implementation of the Work.

39. All Work shall be under the direction and supervision of a qualified RD/RA Project Manager, RD/RA Professional, Remedial Action Contractor, and Independent Quality Assurance Team, as those terms are defined in the SOW. On the dates specified in Exhibit 3 and as described in this Order, or as directed by EPA, Respondent shall notify EPA in writing of the name, address, telephone number, and qualifications of the RD/RA Project Manager, RD/RA Professional, Independent Quality Assurance Team, and Remedial Action Contractor(s), and the identity and qualifications of any other primary support entities, staff, and contractors proposed to be used in carrying out Work under this Order. If at any time Respondent proposes to use a different RD/RA Project Manager, RD/RA Professional, Independent Quality Assurance Team, or Remedial Action Contractor(s), or support entities, staff, or contractors, Respondent shall notify EPA and provide similar information at least 14 days before such persons perform any Work under this Order.

40. EPA will review Respondent's selection of, and changes to, the RD/RA Project Manager, RD/RA Professional, Independent Quality Assurance Team, and Remedial Action Contractor(s), and support entities, staff, or contractors according to the terms of this Section and Section XIV of this Order. If EPA disapproves of the selection of a RD/RA Project Manager, RD/RA Professional, Independent Quality Assurance Team, or Remedial Action Contractor(s), or support entities, staff, or contractors, Respondent shall submit to EPA within 14 days after receipt of EPA's disapproval, a list of project managers, support entities,

staff, or contractors that would be acceptable to Respondent. EPA will thereafter provide written notice to Respondent of the names that are acceptable to EPA. Respondent may then select any approved name or names from that list and shall notify EPA of their selection(s) within 14 days of receipt of EPA's written notice.

41. Certification of Completion of Initial Construction

a. Within 30 days after Respondent concludes that the Initial Construction activities have been fully performed, Respondent shall schedule and conduct a pre-certification inspection to be attended by Respondent, EPA, and the MDHES, and shall then so certify to EPA. For purposes of this Paragraph, Completion of Initial Construction shall mean the completion of the initial on-site physical actions required for the construction of the lime treatment system, the flooding or dry closure of contaminated areas in and around Pond 2, and reconstruction/reclamation/restoration of the Mill-Willow Bypass, as will be described in the CWP and the Final Design Report. Completion of Construction does not include activities required under Sections X and XII of this Order, or activities occurring during the shakedown period of operation of the Pond system. If, after the pre-certification inspection, the Respondent believes that the Initial Construction has been fully performed, it shall submit a written report to EPA and MDHES for approval by EPA, in consultation with the State, pursuant to Section XIV. In the report, a registered professional engineer and the Respondent's RD/RA Project Manager shall certify that the Initial Construction has been completed in full satisfaction of the requirements of this Order. The written report shall include as-built drawings signed and stamped by a professional engineer. The report shall also contain the following statement, signed by a responsible official of the Respondent and by the Respondent's RD/RA Project Manager:

> "To the best of my knowledge, after thorough investigation, I certify that the information contained in or accompanying this submission is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations".

For purposes of this Order, a responsible official is a corporate official who is in charge of a principal business function. Upon receipt of the Report, EPA may request a final inspection and meeting, at EPA's discretion. If, after completion of the pre-certification inspection and receipt and review of the written report, EPA, determines that the Initial Construction activities or any portion thereof has not been completed in accordance with this Order, EPA may require appropriate Work actions, or invoke the provisions of Sections X or XII of this

Order, or take any other action authorized by law. If EPA concludes, following the initial or subsequent certification of completion of Initial Construction by Respondent that the Initial Construction activities have been fully performed in accordance with this Order, EPA may notify Respondent that the Initial Construction activities have been fully performed. Upon such notice, the shakedown period shall commence, and Phase I O&M shall be implemented. EPA's notification shall be based on present knowledge and Respondent's certification to EPA. The notification shall not limit EPA's right to perform periodic reviews pursuant to section 121(c) of CERCLA, 42 U.S.C. § 9621(c), or to take or require any actions that in the judgment of EPA are appropriate at the Site, in accordance with provisions of this Order or 42 U.S.C. §§ 9604, 9606, or 9607.

42. Completion of the Remedial Action

a. As described in Exhibits 2 and 3 and when Respondent concludes that the Remedial Action has been fully performed and the Performance Standards have been attained, Respondent shall schedule and conduct a pre-certification inspection to be attended by Respondent, EPA, and the MDHES, and shall then so certify to EPA. This certification shall also contain a detailed report on Respondent's compliance with all Performance Standards. For purposes of this Paragraph, compliance with Performance Standards shall mean compliance with Performance Standards described in Exhibits 4 and 5, and more specifically defined as consistent compliance with the final point source discharge standards for Pond 2 and Pond 3 discharges for a twenty-four (24) month time frame, as those final point source discharge numeric limits are described in Exhibit 5. For purposes of this Paragraph, compliance can include reliance on the Upset Conditions described in Exhibit 5. If, after the pre-certification inspection and according to the schedule contained in Exhibit 3, the Respondent believes that the Remedial Action has been fully performed and the Performance Standards have been attained, it shall submit a written report to EPA and the State for approval by EPA, in consultation with the State, pursuant to Section XIV. In the report, a registered professional engineer and the Respondent's RD/RA Project Manager shall certify that the Remedial Action has been completed in full satisfaction of the requirements of this Order. The written report shall include as-built drawings signed and stamped by a professional engineer. The report shall also contain the following statement, signed by a responsible official of the Respondent and by the Respondent's RD/RA Project Manager:

> "To the best of my knowledge, after thorough investigation, I certify that the information contained in or accompanying this submission is true, accurate, and complete. I am aware that there are significant penalties for submitting false

information, including the possibility of fine and imprisonment for knowing violations".

For purposes of this Order, a responsible official is a corporate official who is in charge of a principal business function. Upon receipt of the Report, EPA may request a final inspection and meeting, at EPA's discretion. If, after completion of the pre-certification inspection and receipt and review of the written report, EPA, determines that the Remedial Action or any portion thereof has not been completed in accordance with this Order or that the Performance Standards have not been achieved, EPA may require that appropriate Work be performed or may invoke the provisions of Sections X or XII, or take any other action authorized by law. If EPA concludes, following the initial or subsequent certification of completion of Remedial Action by Respondent that the Remedial Action has been fully performed in accordance with this Order, EPA may notify Respondent that the Remedial Action has been fully performed. Upon receipt of such notice, the Phase II O&M shall be implemented. EPA's notification shall be based on present knowledge and Respondent's certification to EPA. The notification shall not limit EPA's right to perform periodic reviews pursuant to section 121(c) of CERCLA, 42 U.S.C. § 9621(c), or to take or require any actions that in the judgment of EPA are appropriate at the Site, in accordance with provisions of this Order or 42 U.S.C. §§ 9604, 9606, or 9607, including selection and implementation of a final remedy for the Site.

43. Respondent shall, no later than 5 days prior to any off-Site (meaning off of the Clark Fork Basin Superfund Sites) shipment of hazardous substances from the Site to an out-of-state waste management facility, provide written notification of such shipment of hazardous substances to MDHES, to the appropriate state environmental official in the receiving state, and to EPA. However, the notification of shipments shall not apply to any off-Site (meaning off of the Clark Fork Basin Superfund Sites) shipments when the total volume of all shipments from the Site to the state will not exceed 10 cubic yards.

a. The notification shall be in writing, and shall include the following information: (1) the name and location of the facility to which hazardous substances are to be shipped; (2) the type and quantity of hazardous substances to be shipped; (3) the expected schedule for the shipment of the hazardous substances; and (4) the method of transportation. Respondent shall notify EPA and the receiving state of major changes in the shipment plan, such as a decision to ship the hazardous substances to another facility within the same state or to a facility in another state.

b. The identity of the receiving facility will be determined by Respondent at the earliest possible time. Respondent shall provide all relevant information, including the information noted above, as soon as practicable after a decision is reached, but in no event later than the time specified in this paragraph.

44. Respondent shall cooperate with EPA in providing information regarding the Work to the public. If requested by EPA, Respondent shall participate in the preparation of such information for distribution to the public and in public meetings which may be held or sponsored by EPA to explain activities at or relating to the Site.

## X. FAILURE TO ATTAIN PERFORMANCE STANDARDS

45. In the event that EPA determines at any time during which this Order is in effect, including during O&M, that additional response activities are necessary to attain Performance Standards, EPA may notify Respondent that additional response actions are necessary. Respondent shall notify EPA of its intent to perform such additional response activities within 7 days after receipt of EPA's request for additional response activities.

46. Unless otherwise stated by EPA, within 30 days of receipt of notice from EPA that additional response activities are necessary to meet Performance Standards, Respondent shall submit for approval by EPA a work plan for the additional response activities. The plan shall conform to the applicable requirements of Sections IX, XVI, and XVII of this Order. Upon EPA's approval of the plan pursuant to Section XIV, Respondent shall implement the plan for additional response activities in accordance with the provisions and schedule contained therein.

## XI. EPA PERIODIC REVIEW

47. Under section 121(c) of CERCLA, 42 U.S.C. § 9621(c), and any applicable regulations, EPA may review the remedial action to assure that the Work performed pursuant to this Order adequately protects human health and the environment. Respondent shall conduct the studies, investigations, or other response actions determined necessary by EPA for EPA to conduct its review. As a result of any review performed under this paragraph, Respondent may be required to perform additional Work or to modify Work previously performed. The first Periodic Review shall begin as described in Exhibit 5.

## XII. ADDITIONAL RESPONSE ACTIONS

48. At any time, including during O&M, EPA may determine that Work, in addition to that identified in this Order, may be necessary to protect human health or the environment or to implement the WSPA ROD/ESD. If EPA determines that additional response activities are necessary, EPA may require Respondent to submit a work plan for additional response activities. EPA may also require Respondent to modify any plan, design, or other deliverable required by this Order, including any approved deliverable. Respondent shall notify EPA of their intent to perform such additional response activities within 7 days after receipt of EPA's request for additional response activities.

49. Not later than 30 days after receiving EPA's notice that additional response activities are required pursuant to this Section, Respondent shall submit a Work Plan for the response activities to EPA for review and approval. Upon approval by EPA, the plan is incorporated into this Order as a requirement of this Order and shall be an enforceable part of this Order. Upon approval of the plan by EPA, Respondent shall implement the plan according to the standards, specifications, and schedule in this Order and the approved plan.

## XIII. ENDANGERMENT AND EMERGENCY RESPONSE

50. In the event of any action or occurrence during the performance of the Work which causes or threatens to cause a release of a hazardous substance that constitutes an emergency situation or which may present an immediate threat to public health or welfare or the environment, Respondent shall immediately take all appropriate action to prevent, abate, or minimize the threat, and shall immediately notify EPA. Immediately upon such an occurrence, Respondent shall notify the EPA Remedial Project Manager, or the Alternate Remedial Project Manager. If neither the EPA Remedial Project Manager nor the Alternate Remedial Project Manager is available, Respondent shall notify the EPA Emergency Response Branch, EPA Region 8. Respondent shall take such action in consultation with the EPA Remedial Project Manager and in accordance with all applicable provisions of law and of this Order. In the event that Respondent fails to take appropriate response action as required by this Section, and EPA takes action instead, Respondent shall reimburse the United States for all costs of the response action. Respondent shall pay the response costs in the manner described in Section XXII of this Order.

51. Nothing in the preceding paragraph shall be deemed to limit any authority of the United States to take, direct, or order any action to protect human health and the environment or to prevent, abate, or minimize an actual or threatened release of hazardous substances on, at, or from the Site. These

notification requirements are separate and distinct from notification requirements described in Exhibit 5.

## XIV. EPA REVIEW OF DELIVERABLES

52. After review of any deliverable which must be submitted for review and approval pursuant to this Order, EPA may: (a) approve the submission, (b) approve the submission with its own modifications, (c) comment on the submission and direct changes and corrections, (d) disapprove the submission and direct Respondent to re-submit the document after incorporating EPA's comments and directions, or (e) disapprove the submission and assume responsibility for performing all or any part of the response action. As used in this Order, the terms "approval by EPA," "EPA approval," or similar term means the action described in phrases (a) or (b) of this paragraph.

53. In the event of approval or approval with modifications by EPA, Respondent shall proceed to take any action required by the deliverable, as approved or modified by EPA.

54. Upon receipt of a notice of comments with directions for changes and corrections, or disapproval with directions for modifications, Respondent shall, within 7 days or such time as specified by EPA in its comment letter or notice of disapproval and direction for modification or within such time as indicted the Exhibit 3, make all requested changes and correct the noted deficiencies, and not make any additional changes without prior approval of EPA, and resubmit the deliverable for approval. Notwithstanding the notice of disapproval, or approval with modification, Respondent shall proceed, at the direction of EPA, to take any action required by any non-deficient portion of the deliverable.

55. Any failure of Respondent to obtain full approval of a deliverable when required is a violation of this Order.

## XV. REPORTING REQUIREMENTS

56. Until EPA's acceptance of the certification of completion of remedial action, Respondent shall submit to EPA and MDHES monthly progress reports containing, at a minimum, the following information:

a. A description of actions taken to comply with this Order, including plans and actions completed, during the previous month;

b. A description of problems encountered and any anticipated problems, any actual or anticipated delays, and solutions developed and implemented to mitigate any problems or delays;

c. Any change orders, nonconformance reports, claims made, and actions taken to rectify problems;

d. Work planned for the next 60 days with schedules relating such Work to the overall project schedule for RD/RA completion, and

e. Except for information previously submitted, copies of inspection logs and results of all sampling, tests, and other data (including validated analytical data with supporting documentation on Contract Laboratory Program Form I's or in a similar format) received or produced by Respondent during the course of Work during the previous month.

These reports shall be submitted on or before the 10th day of each month from the effective date of the Order and each month thereafter until EPA determines that reports are no longer required.

57. During any on-Site construction activity, Respondent shall prepare daily and weekly reports on construction activities discussing, at a minimum, the daily activities, field adjustments, change orders, summaries of problems and actions to rectify problems, and such information as is customary in the industry. The daily reports and the weekly report shall be compiled and delivered to EPA and MDHES each week on the day specified by the EPA Remedial Project Manager.

58. Upon commencement of O&M activities, Respondent shall prepare and submit to EPA and MDHES O&M reports that include, at a minimum, the following elements:

a. A description of O&M activities performed during the reporting period;

b. A description of the performance of each component of the remedial action requiring O&M, including a summary of any monitoring data demonstrating the performance of the remedy and its effectiveness in meeting Performance Standards;

c. A description and summary of the results of all monitoring performed in connection with the remedy;

d. A statistical evaluation of the monitoring data and a conclusion as to whether the results exceed necessitate the implementation of contingency measures;

e. Identification of any problems or potential problems and a description of all steps taken or to be taken to rectify the problems;

f. An appendix containing all validated data and supporting documentation on Contract Laboratory Program Form I's or in a similar format collected during the reporting period and not previously submitted; and

g. Copies of any O&M training materials and a record of employee attendance at training sessions.

O&M reports shall be submitted quarterly on or before the 10th day of January, April, July, and October, commencing upon approval of the Phase I O&M Plan, as described in Exhibit 2, and continuing until EPA notifies Respondent that the frequency of reporting may be reduced.

59. Respondent shall prepare and submit the periodic review reports described in the SOW.

60. The reports described in this Section are separate and distinct from the monthly discharge reports required in Exhibit 5.

## XVI. QUALITY ASSURANCE, SAMPLING, AND DATA ANALYSIS

61. Respondent shall ensure that Work performed, samples taken, and analyses conducted conform to the requirements of this Order and the EPA-approved sampling and analysis plan. Respondent will ensure that its field personnel are properly trained in the use of field equipment and chain-of-custody procedures. If relevant to the proceeding, validated sampling data generated in accordance with the approved SAP and reviewed and approved by EPA shall be admissable as evidence, without objection, in any enforcement proceeding by EPA or the MDHES.

62. To provide quality assurance and maintain quality control, Respondent shall:

a. Use only laboratories which have a documented Quality Assurance Program that complies with EPA guidance document QAMS-005/80;

b. Ensure that any laboratory used performs analyses according to a method or methods deemed satisfactory by EPA and submits all protocols to be used for analyses to EPA at least 30 days before beginning analysis;

c. Ensure that EPA personnel or authorized representatives are allowed access to the laboratory and personnel used by Respondent for analyses; and

d. Upon EPA request, have such laboratories analyze samples submitted by EPA for quality-assurance monitoring.

63. Respondent shall notify EPA and MDHES in writing not less than 14 days prior to any sample collection activity. At the request of EPA, Respondent shall allow split or duplicate samples to be taken by EPA or MDHES or their respective authorized representatives, of any samples collected by Respondent with regard to the Site or pursuant to the implementation of this Order. In addition, EPA, MDHES, and/or their respective authorized representatives shall have the right to take any other samples that EPA or MDHES deems necessary.

## XVII. COMPLIANCE WITH APPLICABLE LAWS

64. All Work shall be performed in accordance with the requirements of all federal and state laws and regulations. As provided in section 121(e) of CERCLA, 42 U.S.C. § 9621(e), and the NCP, no permit shall be required for any portion of the Work conducted entirely on-Site. Where any portion of the Work requires a federal or state permit or approval, Respondent shall submit timely and complete applications and take all other actions necessary to obtain and to comply with all such permits or approvals.

65. This Order is not, and shall not be construed to be, a permit issued pursuant to any federal or state statute or regulation. To ensure that implementation of the remedy does not cause injury to vested water rights or decreed conditional water rights, consistent with Montana water law, the Respondent shall comply with all applicable provisions of the laws of the State of Montana, consistent with section 121(e)(1) of CERCLA, 42 U.S.C. § 9621(e)(1), and the previous paragraph, before undertaking any remedial action which involves the interception, withdrawal, diversion, storage, capture, possession, or control of any ground water or surface water. Nothing in this Order, however, shall alter any obligation Respondent may have under state law to provide compensation or payment for the use of water. For that portion of any Work which constitutes actions described in this paragraph performed entirely on-Site, Respondent shall submit to the State, with a copy to EPA and MDHES, timely written notification of such actions.

66. All materials removed from the Clark Fork Basin Superfund Sites shall be disposed of or treated at a facility approved by EPA and in accordance with section 121(d)(3) of

CERCLA, 42 U.S.C. § 9621(d)(3); with EPA's "Revised Off-Site Policy," (OSWER Directive 9834.11 Nov. 3, 1987); and with all other applicable federal, state, and local requirements.

## XVIII. REMEDIAL PROJECT MANAGER

67. The EPA Remedial Project Manager is:

D. Scott Brown, 8MO
EPA Region 8 Montana Office
301 South Park
Drawer 10096
Helena, Montana 59624
(406) 449-5414

EPA's Alternate Remedial Project Manager is:

Robert Fox, 8MO
EPA Region 8 Montana Office
301 South Park
Drawer 10096
Helena, Montana 59624
(406) 449-5414

EPA's lead attorney is:

D. Henry Elsen, 8RCMO
Assistant Regional Counsel
EPA Region 8 Montana Office
301 South Park
Drawer 10096
Helena, Montana 59624
(406) 449-5414

MDHES's Project Officer is:

Neil Marsh
State of Montana
Department of Health and Environmental Sciences
Solid and Hazardous Waste Bureau
Cogswell Building
Helena, Montana 59620
(406) 444-1420

MDHES's Lead Attorney is:

Laura Bassein
Special Assistant Attorney General
State of Montana
Department of Health and Environmental Sciences
Solid and Hazardous Waste Bureau
Cogswell Building
Helena, Montana 59620
(406) 444-1420

EPA and MDHES have the non-reviewable right to change their respective Remedial Project Manager or Alternate Project Manager or Project Officer or Lead Attorney at any time and will inform Respondent of such changes.

68. The EPA Remedial Project Manager and Alternate Project Manager shall have the authority lawfully vested in a Remedial Project Manager and On-Scene Coordinator by the NCP. The EPA Remedial Project Manager and Alternate Project Manager shall have authority, consistent with the NCP, to halt any Work required by this Order, and to take any necessary response action.

69. Within fifteen (15) days of Respondent's receipt of the Order, Respondent shall designate an RD/RA Project Manager, including the name, address, and telephone number of this person. Respondent's RD/RA Project Manager shall be responsible for overseeing Respondent's implementation of this Order. Respondent shall submit the qualifications of this person with the CWP, as described in Paragraphs 39 - 40. Respondent's selection of the RD/RA Project Manager is subject to approval by EPA, as described in Paragraphs 39 - 40. If Respondent wishes to change the RD/RA Project Manager, Respondent shall provide written notice to EPA at least five (5) days prior to changing the Project Coordinator, with the name and qualifications of the new RD/RA Project Manager. Respondent's selection shall be subject to EPA approval, as described in Paragraph 40.

70. All written communications from Respondent to EPA shall be directed from Respondent's RD/RA Project Manager to the each of the names listed in paragraph 67. Respondent shall submit to EPA's Project Manager three copies, to MDHES's Project Officer three copies, and to EPA's and MDHES's Lead Attorneys one copy each of all documents, including plans, reports, and other correspondence, which are developed pursuant to this Order, and shall hand-deliver or send these documents by certified mail, return receipt requested, or overnight mail. Oral communications shall be directed from Respondent's RD/RA Project Manager to EPA's Remedial Project Manager.

## XIX. ACCESS AND DATA/DOCUMENT AVAILABILITY

71. Respondent shall allow EPA, MDHES, and their respective authorized representatives at all times to enter and move freely about any and all property owned or controlled by Respondent at the Site and off-Site areas subject to or affected by the Work under this Order or where documents required to be prepared or maintained by this Order are located, for the purposes of: inspecting conditions, activities, the results of activities, records, operating logs, and contracts related to the Site or Respondent and its representatives or contractors pursuant to this Order; reviewing the progress of Respondent in carrying out the terms of this Order; conducting tests as EPA or its authorized representatives deem necessary; using a camera, sound recording device or other documentary type equipment; and verifying the data submitted to EPA by Respondent. Respondent shall allow EPA, MDHES, and their respective authorized representatives to enter the Site and off-Site areas subject to or affected by the Work under this Order or where documents required to be prepared or maintained by this Order are located, to inspect and copy all records, files, photographs, documents, sampling and monitoring data, and other writings related to Work undertaken in carrying out this Order. Nothing herein shall be interpreted as limiting or affecting EPA's right of entry or inspection authority under federal law.

72. If the Site or any off-Site area that is subject to or effected by the Work, or property where documents required to be prepared or maintained by this Order are located, or other property subject to or affected by the RD or RA, is owned in whole or in part by parties other than those bound by this Order, Respondent will obtain, or use its best efforts to obtain, Site access agreements from the present owner(s) within 30 days of the effective date of this Order.

a. Respondent's best efforts shall include providing reasonable compensation to any off-Site property owner.

b. Access agreements shall provide access for EPA, MDHES, and their respective authorized representatives and Respondent and its contractors and representatives, and shall specify that Respondent is not EPA's or MDHES's representatives with respect to the Site or Site activities.

c. Copies of such agreements shall be provided to EPA prior to Respondent's initiation of field activities. If access agreements are not obtained within the time referenced above, Respondent shall immediately notify EPA of its failure to obtain access, and shall include in that notification a

summary of the steps the Respondent has taken to attempt to obtain access or use.

d. Respondent shall not seek to negotiate general releases from tort or other liability unrelated to the Work required by this Order as part of the access agreement. When working on property owned by third parties, Respondent shall provide the opportunity for the third party to request and obtain split samples. Respondent shall submit written evidence to EPA documenting that such an opportunity was provided.

Subject to the United States' non-reviewable discretion, EPA may use its legal authorities to obtain access for Respondent, may perform response actions with EPA contractors, may modify the Order or the Schedule, or may terminate the Order, if Respondent cannot obtain access agreements. Respondent shall reimburse EPA, pursuant to Section XXII of this Order, for all response costs (including attorney fees) incurred by the United States to obtain access for Respondent. If EPA performs tasks or activities with contractors and does not terminate the Order, Respondent shall perform all other activities not requiring access to that property, and shall reimburse EPA, pursuant to Section XXII of this Order, for all costs incurred in performing such activities. Respondent shall integrate the results of any such tasks undertaken by EPA into the Work it performs under this Order.

73. Respondent shall provide to EPA, upon request, copies of all documents and information within its possession and/or control or that of its contractors or representatives relating to activities at the Site or to the implementation of this Order, including but not limited to, sampling, analysis, chain-of-custody records, manifests, trucking logs, receipts, reports, sample traffic routing, correspondence, or other documents or information related to the Work. Respondent shall also make available to EPA upon request for purposes of investigation, information gathering, or testimony, its employees, agents, or representatives with knowledge of relevant facts concerning the performance of the Work.

74. Respondent may assert a claim of business confidentiality covering part or all of the information submitted to EPA pursuant to the terms of this Order under 40 C.F.R. § 2.203, provided such claim is not inconsistent with section 104(e)(7) of CERCLA, 42 U.S.C. § 9604(e)(7), or other provisions of law. This claim shall be asserted in the manner described by 40 C.F.R. § 2.203(b) and substantiated by Respondent at the time the claim is made. Information determined to be confidential by EPA will be given the protection specified in 40 C.F.R. Part 2. If no such claim accompanies the information when it is submitted to EPA, it may be made available to the

public by EPA without further notice to Respondent. No claim shall be made with respect to any data, including, but not limited to, all sampling, analytical, monitoring, hydrogeologic, scientific, chemical, or engineering data, or any other documents or information evidencing conditions at or around the Site.

## XX. RECORD PRESERVATION

75. For a period of 10 years after Work is completed under this Order, Respondent shall preserve and retain all records and documents in its possession or control and in the possession or control of its contractors, on and after the date of signature of this Order, that relate in any manner to the Site, Respondent's potential liability under CERCLA, or performance of Work under this Order. At the conclusion of this document-retention period, Respondent shall notify EPA at least 90 days prior to the destruction of any such records or documents, and upon request by EPA, Respondent shall deliver any such records or documents to EPA at no cost to EPA. Any records or documents not requested by EPA may be requested by MDHES, and Respondent shall deliver any such records or documents to MDHES at no cost to MDHES.

## XXI. ASSURANCE OF ABILITY TO COMPLETE WORK

76. Respondent shall demonstrate its ability to complete the Work required by this Order and to pay all claims that arise from the performance of the Work by obtaining and presenting to EPA, within 30 days after the effective date of this Order, one of the following: (1) a performance bond; (2) a letter of credit; (3) a guarantee by a third party; or (4) internal financial information consistent with 40 CFR § 264.143(f), to allow EPA to determine that Respondent has sufficient assets available to perform the Work. Respondent shall demonstrate financial assurance in an amount no less than seven (7) million dollars. If Respondent seeks to demonstrate the ability to complete the remedial action by means of internal financial information, or by guarantee of a third party, it shall re-submit such information annually, on the anniversary of the effective date of this Order. If EPA determines that such financial information is inadequate, Respondent shall, within 30 days after receipt of EPA's notice of determination, obtain and present to EPA for approval one of the other three forms of financial assurance listed above.

77. At least 7 days prior to commencing any physical on-Site activity at the Site pursuant to this Order, Respondent shall submit to EPA a certification that Respondent or its contractors have adequate insurance coverage, which may include self-insurance, or have indemnification for liabilities for injuries or damages to persons or property which may result from the activities to be conducted by or on behalf of Respondent pursuant to this Order. In addition, for the duration of this Order, Respondent shall satisfy, and shall ensure that its

contractors or subcontractors satisfy, all applicable laws and regulations regarding the provision of worker's compensation insurance for all persons performing the Work on behalf of Respondent in furtherance of this Order. Respondent shall ensure that such insurance or indemnification is maintained for the duration of the Work required by this Order. Prior to commencement of on-Site physical Work under this Order, Respondent shall provide to EPA certification of the insurance described in this paragraph, and any insurance policies required by this paragraph. Respondent shall resubmit such certification each year on the anniversary of the effective date of this Order.

## XXII. REIMBURSEMENT OF RESPONSE COSTS

78. Respondent shall reimburse EPA, upon written demand, for all response costs incurred by the United States in connection with this Order. EPA may submit to Respondent on a periodic basis an accounting and a bill of such costs. Within 30 days of receipt of each EPA accounting and bill, Respondent shall remit a certified or cashier's check for the amount set forth in the accounting, plus interest. Interest shall accrue from the later of the date that payment of a specified amount is demanded in writing or the date of the expenditure. The interest rate is the rate established by the Department of the Treasury pursuant to 31 U.S.C. § 3717 and 4 C.F.R. § 102.13.

79. Checks shall be made payable to the "Hazardous Substance Superfund" and shall be forwarded to:

Mellon Bank
EPA Region VIII
Attn: Superfund Accounting
Post Office Box 360859M
Pittsburgh, Pennsylvania 15251

or other such address as EPA may designate in writing. Payments must be designated as "Response Costs--Silver Bow Creek/Butte Area (original portion) Superfund Site, Warm Springs Ponds Active Area operable unit remedial action, Site #22, OU #4" and include the payor's name and address and the docket number of this Order. Respondent shall send copies of each transmittal letter and check to the EPA Remedial Project Manager at the time of payment.

## XXIII. UNITED STATES NOT LIABLE

80. The United States including EPA, by EPA's issuance of this Order, assumes no liability for any injuries or damages to persons or property resulting from acts or omissions by Respondent, or its directors, officers, employees, agents, representatives, successors, assigns, contractors, or consultants in carrying out any action or activity pursuant to this Order. Neither EPA nor the United States may be deemed to be a party to

any contract entered into by Respondent or its directors, officers, employees, agents, successors, assigns, contractors, or consultants in carrying out any action or activity pursuant to this Order.

81. Respondent shall save and hold harmless the United States and its officials, agents, employees, contractors, subcontractors, or representatives for or from any and all claims or causes of action or other costs incurred by the United States, including but not limited to, attorneys fees and other expenses of litigation and settlement arising from or on account of acts or omissions of Respondent, its officers, directors, employees, agents, contractors, subcontractors, and any persons acting on its behalf or under its control, in carrying out activities pursuant to this Order, including any claims arising from any designation of Respondent as EPA's authorized representative(s) under section 104(e) of CERCLA, 42 U.S.C. § 9604(e). Respondent shall indemnify and hold harmless the United States with respect to any and all claims for damages or reimbursement arising from or on account of any contract, agreement, or arrangement between Respondent and any person for performance of Work on or relating to the Site, including, but no limited to, claims on account of construction delays. Respondent shall reimburse EPA for any costs incurred arising from or on account of claims made against the United States based on the activities described in this paragraph, pursuant to Section XXII.

## XXIV. ENFORCEMENT AND RESERVATIONS

82. EPA reserves the right to bring an action against Respondent under section 107 of CERCLA, 42 U.S.C. § 9607, for recovery of any response costs incurred by the United States related to the Site and not reimbursed by Respondent. This reservation shall include but not be limited to past costs, direct costs, indirect costs, the costs of oversight, the costs of compiling the cost documentation to support the oversight cost demand, as well as accrued interest as provided in section 107(a) of CERCLA, 42 U.S.C. § 9607(a).

83. Notwithstanding any other provision of this Order, at any time during the response action, EPA may perform its own studies, complete the response action (or any portion of the response action), as provided in CERCLA and the NCP, and seek reimbursement from Respondent for its costs, or seek any other appropriate relief. Respondent shall be liable under section 107(a) of CERCLA, 42 U.S.C. § 9607(a), for the costs of any such additional action.

84. Nothing in this Order shall preclude EPA from taking any additional enforcement actions at this Site or any other site, including modification of this Order or issuance of additional Orders, and/or additional remedial or removal actions

as EPA may deem necessary, or from requiring Respondent in the future to perform additional activities pursuant to CERCLA or any other applicable law.

85. Notwithstanding any provision of this Order, the United States hereby retains all of its information gathering, inspection, and enforcement authorities and rights under CERCLA, RCRA and any other applicable statutes or regulations.

86. Respondent shall be subject to civil penalties under section 106(b) of CERCLA, 42 U.S.C. § 9606(b), of not more than $25,000 for each day in which Respondent willfully violates, or fails or refuses to comply with this Order without sufficient cause. In addition, failure to provide response action properly under this Order, or any portion hereof, without sufficient cause, may result in liability under section 107(c)(3) of CERCLA, 42 U.S.C. § 9607(c)(3), for punitive damages in an amount equal to three times the amount of any costs incurred by the Fund as a result of such failure to take proper action.

87. Nothing in this Order shall constitute or be construed as a release from any claim, cause of action or demand in law or equity, including but not limited to a claim for natural resource damages, against any person for any liability it may have arising out of or relating in any way to the Site, or to any portion of the Silver Bow Creek/Butte Area Superfund Site, or any other area within the Clark Fork Basin Superfund Sites.

88. If a court issues an order that invalidates any provision of this Order or finds that Respondent has sufficient cause not to comply with one or more provisions of this Order, Respondent shall remain bound to comply with all provisions of this Order not invalidated by the court's order.

## XXV. EFFECTIVE DATE AND COMPUTATION OF TIME

89. This Order shall be effective 30 days after the Order is signed. All times for performance of ordered activities shall be calculated from this effective date.

## XXVI. OPPORTUNITY TO CONFER

90. Respondent may, within 10 days after the date this Order is received, request a conference with EPA to discuss this Order. The conference shall be limited to discussion of issues involving the implementation of the response actions required by this Order and the extent to which Respondent intends to comply with this Order. This conference is not an evidentiary hearing, and does not constitute a proceeding to challenge this Order. It does not give Respondent a right to seek review of this Order, or to seek resolution of potential liability, and no official stenographic record of the conference will be made. At any

conference held pursuant to Respondent's request, Respondent may appear in person or by an attorney or other representative.

91. The conference shall be held at EPA's offices in Helena, Montana. Requests for a conference must be by telephone followed by written confirmation mailed that day to:

D. Henry Elsen, 8RCMO
EPA Region 8 Montana Office
301 South Park
Drawer 10096
Helena, Montana 59620
(406) 449-5414

IT IS SO ORDERED

BY: _____
Robert L. Duprey, Director
Hazardous Waste Management Division
U.S. Environmental Protection Agency
Region 8

DATE: 9/25/91

EFFECTIVE DATE: October 25, 1991

EXHIBIT 1

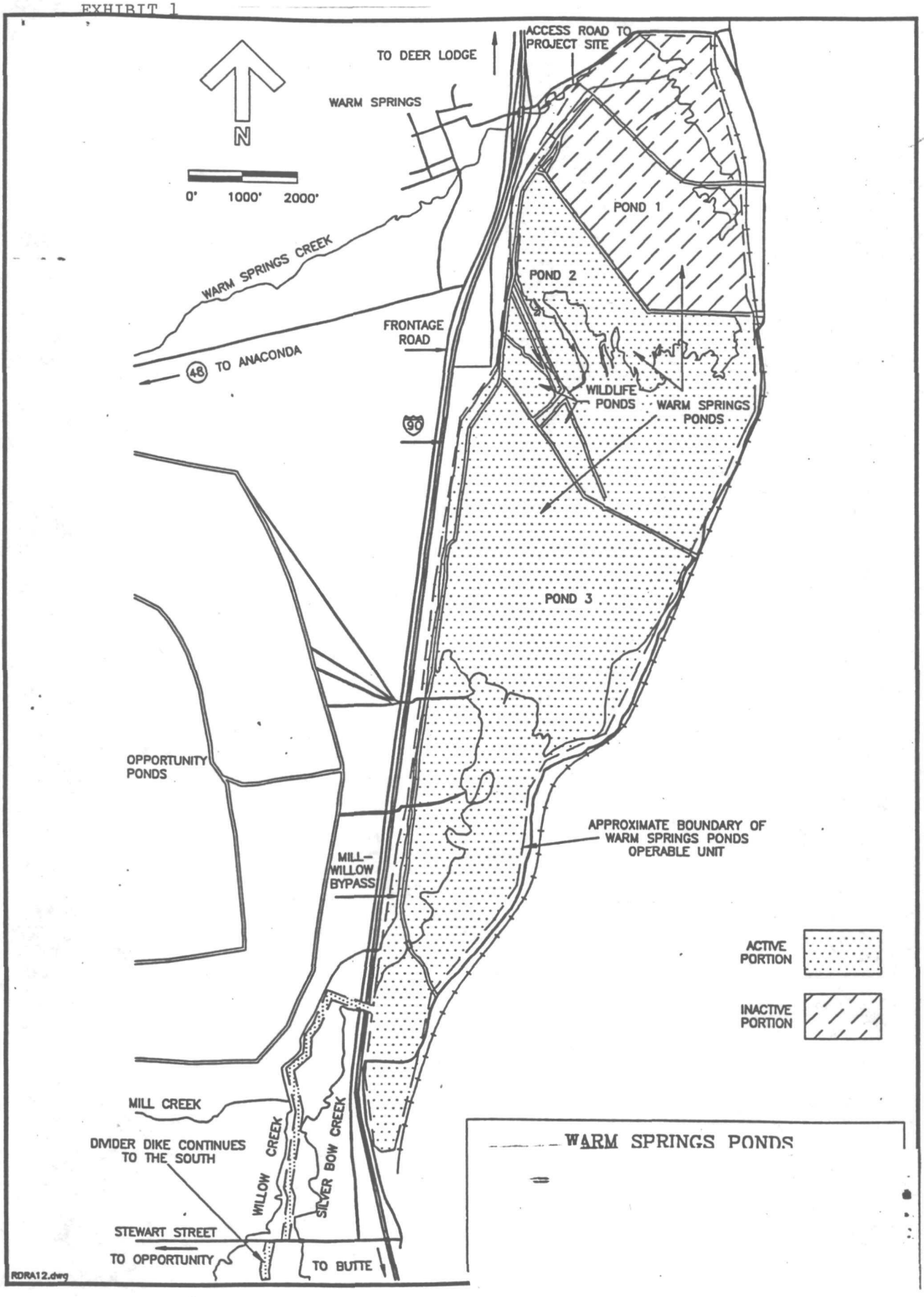
ACCESS ROAD TO PROJECT SITE
TO DEER LODGE
WARM SPRINGS
N
0'
1000'
2000'
POND 1
WARM SPRINGS CREEK
POND 2
FRONTAGE ROAD
48
TO ANACONDA
WILDLIFE PONDS
WARM SPRINGS PONDS
90
POND 3
OPPORTUNITY PONDS
APPROXIMATE BOUNDARY OF WARM SPRINGS PONDS OPERABLE UNIT
MILL-WILLOW BYPASS
ACTIVE PORTION
INACTIVE PORTION
MILL CREEK
DIVIDER DIKE CONTINUES TO THE SOUTH
WILLOW CREEK
SILVER BOW CREEK
STEWART STREET
TO OPPORTUNITY
TO BUTTE
RDRA12.dwg
WARM SPRINGS PONDS

EXHIBIT 2

# STATEMENT OF WORK FOR THE SILVER BOW CREEK/BUTTE AREA (ORIGINAL PORTION) SUPERFUND SITE WARM SPRINGS PONDS OPERABLE UNIT - ACTIVE PORTION REMEDIAL DESIGN/REMEDIAL ACTION

## I. INTRODUCTION

This Statement of Work (SOW) outlines the procedures, tasks, and requirements, for preparing the remedial design (RD) and implementing and carrying out the remedial action (RA) and Operation and Maintenance (O and M) for cleanup of the Silver Bow Creek/Butte Area (original portion) Superfund Site - Warm Springs Ponds Active Area Operable Unit ("the Site") near Warm Springs, Montana. The remedial action must fulfill the requirements set forth in the Record of Decision (ROD) as modified by the Explanation of Significant Differences (ESD) for the Site, issued in September, 1990 and June, 1991, respectively, by the United States Environmental Protection Agency (EPA).

This SOW includes the requirements for the Comprehensive RD/RA Work Plan (Work Plan). The Work Plan will detail the necessary deliverables and technical requirements for remedial design (RD), remedial action (RA), and Operation and Maintenance (O and M) for the Site. In addition, EPA's requirements for the deliverables, milestones, schedule, and approach to the RD/RA and O and M are included to provide the liable party, the Atlantic Richfield Company (ARCO), with guidelines in preparing the required deliverables.

The Work Plan will be drafted by ARCO and submitted to EPA for review and approval. ARCO will submit the Work Plan to EPA within 20 days of the effective date of the Unilateral Administrative Order for the Site.

This SOW provides: (1) a description of the scope of the remedial action as set forth in the ROD as modified by the ESD; (hereinafter ROD/ESD) (2) an outline of the requirements of the remedial design, remedial action, and O and M process, including the specific plans, reports, and activities that must be conducted; (3) a description of the relationship of the SOW to the Work Plan and Unilateral Administrative Order; and (4) a schedule for completion of the Work.

## II. SCOPE OF REMEDIAL ACTION

This portion of the SOW describes the selected response action presented in the ROD/ESD for the Warm Springs Ponds Active Area operable unit of the Silver Bow Creek/Butte Area (original

portion) Superfund Site. The ROD/ESD establish: (1) the technologies that will be used to treat and contain the surface water and contaminated sediments and soils at certain portions of the Site, as well as the necessary monitoring for ground water, (2) the extent to which the pond berms must be raised and strengthened, (3) institutional controls that are necessary for the Site, and (4) other necessary activities for the Site.

The selected remedy in the ROD for the Site may be summarized as follows:

1. Allow the ponds to remain in place; Ponds 2 and 3 will continue to function as treatment ponds until upstream sources of contamination are cleaned up;

2. Raise and strengthen pond berms according to specified criteria, which will protect against dam failure in the event of major earthquakes or floods, and increase the storage capacity of Pond 3 to receive and treat flows up to the 100-year flood;

3. Construct new inlet and hydraulic structures to prevent debris from plugging the Pond 3 inlet and to safely route flows in excess of the 100-year flood around the ponds;

4. Comprehensively upgrade the treatment capability of Ponds 2 and 3 to fully treat all flows up to 3,300 cubic feet per second (cfs) (100-year peak discharge) and construct spillways for routing excess flood water into the Mill-Willow Bypass channel;

5. Remove all remaining tailings and contaminated soils from the Mill Willow Bypass, consolidate them over existing dry tailings and contaminated soils within the Pond 1 and/or Pond 3 berms and provide adequate cover material which will be revegetated;

6. Reconstruct, reclaim, and restore the Mill-Willow Bypass channel and armor the north-south berms of all ponds to safely route flows up to 70,000 cubic feet per second (one-half of the estimated probable maximum flood);

7. Flood (wet-close) all contaminated portions of Pond 2, or, if not wet closed, dry close and revegetate contaminated portions;

8. Dewater wet portions of Pond 1 and cover and revegetate (dry-close) all areas within the Pond 1 berms;

9. Construct interception trenches to collect contaminated ground water in and below Pond 1 and pump the water to Pond 3 for treatment, and construct a new stream bed for the Mill-Willow Bypass below Pond 1;

10. Establish surface and ground water quality monitoring systems and perform all other activities necessary to assure compliance with all Performance Standards;

11. Implement institutional controls to prevent future residential development, and other measures;

12. Defer, for not more than one year after the effective date of this document, initial decisions concerning the remediation of contaminated soils, tailings, and ground water in the area below Pond 1, pending evaluation of various wet- and dry- closure alternatives and a public review; and

13. Defer, until upstream cleanup is accomplished and incoming water quality is known, the decision on the routing of water into the treatment ponds and the final disposition of the Ponds.

Activities pursuant to Administrative Order on Consent Docket No. CERCLA VIII-90-15 and subsequent amendments began work for Items 2, 3, 5, and 6. The ESD declared EPA's intention to continue implementation of these items, including any operation and maintenance associated with the listed items, as well as Items 1, 4, 7, 10 , and 11. In conjunction with item 12, items 8 and 9 are deferred until EPA examines recent information submitted to it, and issues a proposed plan for the inactive portion of the site, estimated to be in November of 1991. Item 13 declares EPA's intention to treat all of these actions as interim actions and to select a final remedy for the entire Warm Springs Ponds area only after upstream cleanup is performed and evaluated.

The above summary of the ROD describes only the major actions required in the selected remedy. A complete description of all the remedy requirements is contained in the ROD, and the ESD.

Therefore, activities undertaken pursuant to this Unilateral Administrative Order and SOW must implement Items 1, 2, 3, 4, 5, 6, 7, 10 , and 11, as modified by the ESD, unless those actions are already completed pursuant to the Administrative Order on Consent. Any appropriate operation and maintenance associated with these items must also be undertaken pursuant to this Unilateral Administrative Order.

## III. WORK PLAN DEVELOPMENT AND OTHER PLANS

The plans and actions discussed in the following sections will be completed or executed according to the schedule found in Exhibit 3.

The Work Plan shall be comprehensive and include a discussion of all of the deliverables and activities identified below, with a clear plan described for producing the deliverables and tasks described in an acceptable manner.

### COMPREHENSIVE RD/RA WORK PLAN

A comprehensive Work Plan, encompassing all aspects of RD/RA and O and M for the selected alternative as explained above, will be developed by ARCO and approved or modified by EPA, in consultation with MDHES. The Work Plan will serve as the overall planning document for remedial design, remedy implementation, and operation and maintenance implementation and monitoring. The Work Plan shall set forth the schedule and task-specific methods by which ARCO will accomplish each task required by this SOW, and the ROD/ESD, and the Unilateral Administrative Order. All of the elements of the remedy listed in Section II of this SOW will be addressed in the Work Plan. Items 2, 3, 5, and 6, to the extent that they have already been implemented, will be addressed by reference in the Work Plan to previously submitted and approved work plans developed under the Administrative Order on Consent Docket No. CERCLA-VIII-90-15.

All of the related plans described in the following subsections will be addressed in the Work Plan, and will ultimately be attached to the Work Plan as appendices or clearly referenced as appropriate.

The Work Plan shall document the responsibilities and authority of all key persons and organizations working on the project. It shall also include a description of the qualifications of key personnel and/or organizations involved in the remedial design development and remedial action implementation, including the RD/RA Manager, the Remedial Design/Remedial Action Professional, and the Independent Quality Assurance Team (IQAT).

Qualifications for the Project Manager shall include the name, title, and qualifications of the Project Coordinator proposed to be used in carrying out the overall coordination and management of all activities required under the Unilateral Administrative Order. The Project Coordinator or Project Manager may be a member of ARCO's staff, an independent contractor, or a member of the RD/RA Professional's staff. The Project Coordinator shall have sufficient experience and training to ensure that the project can proceed according to the schedule,

Exhibit 3.

The qualifications for the RD/RA Professional shall include enough information for EPA's approval based on project-specific qualifications and professional competence. The Professional may come from within ARCO's own staff or through a contractual relationship with a private consulting entity. In either case, the factors to be considered in EPA approval will include professional and ethical reputation, professional registration, demonstrated design experience, and qualifications specifically required for the project, sufficient capacity (professional, technical, and support staff) to accomplish the project within the required schedule, and sufficient business background and financial resources to provide uninterrupted services throughout the life of the project.

The qualifications for the Remedial Action Contractor ultimately selected following Remedial Design shall be submitted at least 10 days prior to the preconstruction inspection and meeting. The qualifications shall include enough information to allow EPA evaluation and approval based on professional and ethical reputation, previous experience in the type of construction activities to be implemented, and demonstrated capability to perform the required construction activities.

The IQAT is used to provide confidence to ARCO that the selected remedy is constructed to meet project requirements. The IQAT implements the Construction Quality Assurance Plan by selectively testing and inspecting the work of the Remedial Action Constructor. The IQAT is required to be "independent" and autonomous from the Remedial Action Contractor, and may come from within the ranks of ARCO's organization, the RD/RA Professional, or through a separate contractual relationship with a private consulting entity. EPA approval will be based on the requirement for independence between the IQAT and the Remedial Action Contractor. The submitted information about the IQAT contractor will include a written statement of qualification in sufficient details to allow EPA and the State to make a full and timely evaluation of the contractor's qualifications and facilities.

The Work Plan shall also describe any sampling activities which are needed for remedial design. The Work Plan will describe in detail the requirements of the remedial design activities for each component of the actions required by this Unilateral Administrative Order, and may incorporate by reference project activities which have or will be implemented under the Administrative Order on Consent. Because specific planning requirements may vary for each component, some of the required plans may be submitted as part of the remedial design activities.

A comprehensive schedule of all site activities, consistent with Exhibit 3, will be prepared by ARCO as part of the Work Plan

submittal. When approved, the Work Plan and the comprehensive schedule shall be an enforceable part of the Unilateral Administrative Order. The schedule will reflect important Site activity dates, deliverable due dates, contractor procurement dates, and other necessary items to display the time requirements of all components of this project. Critical path elements will be highlighted. The schedule will be based on the overall planning schedule given in Exhibit 3.

The Work Plan shall conform to all requirements of the Unilateral Administrative Order. A draft Work Plan shall be submitted within 20 days of the effective date of the Unilateral Administrative Order.

**SITE HEALTH AND SAFETY PLAN**

ARCO shall prepare a health and safety plan (HSP) for protecting the health and safety of individuals who will be involved in remedial design, implementation of the remedial action, and operation and maintenance activities. The HSP will also address, as necessary, protection of the surrounding communities during all phases of remedial action implementation. Included in the HSP will be the actions to be taken during a Site emergency, including a telephone notification list of key individuals. This emergency plan will be developed in coordination with appropriate Deer Lodge County officials. No Site activity, other than ongoing removal authority activities at the Site, will be allowed without a completed HSP that has been reviewed by the EPA. The draft HSP shall be submitted as part of the draft Work Plan. After EPA reviews and comments on the draft HSP, the final HSP shall be included as part of the final Work Plan. The Site specific HSP may reference Clark Fork Basin Health and Safety Plans, previously developed by ARCO.

**SAMPLING AND ANALYSIS PLAN**

ARCO shall prepare a Sampling and Analysis Plan (SAP) that includes a Field Sampling Plan (FSP), and includes or appropriately references a Quality Assurance Project Plan (QAPP), and a Data Management/Data Validation Plan (DM/DVP). These documents shall be consistent with previously approved SAPs, FSPs, QAPPs, and DM/DVPs for other Clark Fork Basin Superfund sites. This and all other field documents must be reviewed and approved by EPA prior to initiation of any field work described as RD/RA work. The draft SAP, including the FSP, the QAPP, and the DM/DVP, shall be submitted and/or appropriately referenced as part of the draft Work Plan. After EPA review and comment, and approval, the final SAP shall in included as part of the final Work Plan.

The FSP, the QAPP, and the DM/DVP are described in more detail below.

**FIELD SAMPLING PLAN**

The FSP shall address environmental sampling locations, procedures and protocols, analytical techniques, and quality assurance and quality control procedures. This document will serve as a companion to the QAPP and DM/DVP. The FSP shall cover any environmental sampling, or laboratory or field testing, which will be conducted for remedial design or remedial action. The FSP, QAPP, and the DM/DVP will describe the procedures to be used by ARCO to keep EPA and Montana Department of Health and Environmental Sciences (MDHES) informed of environmental sample results and data problems or needs in a timely fashion.

**QUALITY ASSURANCE PROJECT PLAN**

The QAPP will establish the project organization and responsibility including identification of quality control and quality assurance responsibilities for environmental sampling and laboratory analysis contractors and other involved parties. The QAPP will define data quality objectives for each task in the FSP and will describe all procedures to be taken to assure the quality of all samples taken. Specific elements to be included in the QAPP are included in the CERCLA guidance documents. It should be noted that EPA Contract Laboratory Program (CLP)-type data packages will be required for all non-field screening type laboratory analyses.

**DATA MANAGEMENT/DATA VALIDATION PLAN**

The DM/DVP shall address the methods ARCO will use to manage any environmental data and data collection record keeping, data validation procedures, and data (including validation) reporting. Data reporting, including validation reporting, shall be compatible with the Clark Fork Data Management System (CFDMS). The DM/DVP shall be consistent with previously approved DM/DVPs for Clark Fork Basin Superfund sites.

**ADDITIONAL STUDIES/PLANS/REPORTS**

If EPA, in consultation with the State, or ARCO determines that additional studies or reports, or additional FSPs, are necessary, ARCO shall submit a Work Plan amendment to the EPA for review in accordance with the provisions of the Unilateral Administrative Order. Any amendment submitted must be approved by EPA before work described by the amendment may be initiated, as described in the Unilateral Administrative Order.

## IV. REMEDIAL DESIGN PLANS, REPORTS, AND SPECIFICATIONS

The following subsections describe the various reporting needs during remedial design for the major components of the remedy. Remedial Design is defined as those activities to be undertaken by the Respondent to develop the final plans, drawings, specifications, general provisions, and special requirements necessary to translate the ROD as modified by the ESD into the remedy pursuant to the Unilateral Administrative Order. The final products of the Remedial Design process are technical packages that contain or address all the elements necessary to accomplish the Remedial Action including, in addition to technical elements, all design support activities, permitting and access requirements, and institutional controls.

### PRELIMINARY DESIGN REPORT

ARCO shall submit a Preliminary Design Report which shall describe the design criteria and constraints, key design parameters, and design concepts for the major elements of the project to be implemented under RD/RA which have not or will not already have been completed under the Administrative Order on Consent. The primary objective of this report will be to present the technical requirements of the overall project, so that they may be reviewed to determine if the final design will be consistent with the Unilateral Administrative Order and ROD/ESD. Supporting data and documentation shall be provided with, or in the case of completed work, referenced, in the Preliminary Design Report, to define the functional aspects of the project, including sedimentation controls during construction. For the remaining elements to be implemented under RD/RA, this may include preliminary design calculations and component sizing, schematics, layouts, and similar documents. In addition, the proposed hydraulic and treatment operation of the system will be described. Design shall include a proposal for monitoring stream flows. The design criteria, conceptual designs, supporting documentation and discussion of system operation during the construction period and during the shakedown, interim period should be presented for early feedback from the reviewing agencies. Presentation of this material at a technical meeting is encouraged. A follow-up technical meeting may be required to discuss and resolve any questions or problems that reviewers find with the preliminary design.

The Preliminary Design Report shall be submitted within 45 days after EPA's approval of the Work Plan. The Preliminary Design Report shall conform with all requirements of the Unilateral Administrative Order.

**DRAFT FINAL DESIGN REPORT**

ARCO shall prepare a Draft Final Design Report (DFDR) containing construction plans and specifications reflecting 100 percent completion of design. The DFDR will present the design rationale and calculations. The DFDR will include, but will not be limited to:

Discussion of the design strategy and design basis, including efforts used to minimize environmental and human health impacts;
Discussion of potential environmental impacts and mitigative measures during construction;
Detailed drawings of the proposed design;
Technical specifications of the proposed design;
Tables listing equipment and their key specifications;
Geotechnical and hydrology reports or design memoranda;
Construction schedule; and
Laboratory and field test results will be included as appendices.

The DFDR shall also contain a clear and detailed description of tasks and deliverables necessary for implementation of remedial action activities, including a clear and detailed schedule.

Submitted with the DFDR will be additional FSPs if needed, and the revised health and safety plan if needed. A draft Performance Standards report (see below) shall also be submitted at this time.

The DFDR shall be submitted 60 days after receipt of EPA comments on the Preliminary Design Report. The DFDR shall comply with all requirements of the Unilateral Administrative Order.

**FINAL DESIGN REPORT**

ARCO shall submit a Final Design Report (FDR) consisting of the final design plans and specifications at 100 percent completion, approved ancillary plans as noted above, and the final Performance Standards, all revised in accordance with the Unilateral Administrative Order. ARCO shall correlate and cross-check the bid form, specifications, plans, and drawings. The final design report and associated documents should be of the quality necessary to include in a package for contractors who will be submitting bids for the construction activities. Reproducible drawings and specifications will be submitted to the EPA as part of the design package for project files.

The Final Design Report shall contain a clear and detailed description of tasks and deliverables necessary for implementation of remedial action activities, including a clear and detailed schedule. The report shall conform with all

requirements of the Unilateral Administrative Order.

The FDR shall be submitted within 30 days after receipt of EPA comments on the DFDR. A FDR is subject to the approval of EPA, in consultation with the State.

## INSTITUTIONAL CONTROL COMPLIANCE DEMONSTRATION

Appropriate institutional control measures for the Site are identified in the ROD/ESD. ARCO shall demonstrate compliance with these requirements by producing a compliance report. The report shall include copies of deed notices, leases, enacted zoning provisions, water well bans, evidence of sign posting, and any other required activities. The draft ICCD shall be submitted 90 days after the effective date of the Unilateral Administrative Order. After EPA review and comment, the final ICCD shall be submitted 30 days after final receipt of EPA comments.

## PERFORMANCE STANDARDS REPORT

All applicable or relevant and appropriate requirements (ARARs), as well as other standards and requirements, identified in the ROD/ESD shall be incorporated into the design and documented in an Performance Standard report. The report shall include a detailed description of how the plans and specifications for this operable unit will meet the contaminant-, location-, and action-specific ARARs and all other specified cleanup criteria. The report shall specifically address compliance with section 404 of the Clean Water Act and the Executive Order regarding wetlands, and the Endangered Species Act. The DFDR and FDR will be submitted concurrently with the draft and final Performance Standards Report, and shall describe how contaminant-specific ARARs will be met at the Completion of Remedial Action, in accordance with Exhibit 5, and document compliance with location-specific ARARs, at the completion of remedial action activities, as defined by the Unilateral Administrative Order and Section V of the SOW. Each Performance Standard listed in the Exhibits 4 and 5 will be analyzed and addressed separately in the Performance Standards report.

To ensure that ARARs associated with wetlands evaluation and damage mitigation or restoration, and ARARs associated with the Endangered Species Act are complied with, the ARARs compliance report shall also include a Wetland Evaluation and Restoration Plan. This plan will address the exact amount and location of wetlands located within the area covered by the Unilateral Administrative Order; evaluate whether any planned remedial activities, or other cleanup activities taken at the Warm Springs Ponds under the prior removal Administrative Order on Consent, resulted or will result in any destruction, loss or injury to wetlands, and describe any efforts which will be necessary to restore, replace, rehabilitate, or acquire wetlands equivalent to

those wetlands which were or will be destroyed, lost or injured, to ensure that no net loss of wetlands will occur as a result of the Superfund cleanup activities (past and present) at the Site. The plan should also describe any activities which may be necessary to comply with the Endangered Species Act. Any such activities, upon approval of EPA in consultation with the United States Department of the Interior and the State, shall be included in the Final Design Report, and shall be implemented by ARCO pursuant to this Unilateral Administrative Order.

The draft Performance Standards Report shall be submitted with the DFDR. After review and comment, the final ARARs report shall be submitted with the FDR, and is subject to EPA approval, in consultation with the State.

**OPERATIONS AND MAINTENANCE PLAN**

ARCO shall prepare an operations and maintenance plan (O&M plan) that sets forth the requirements for operations and maintenance of the remedial action. The O&M plan is expected to vary between components of the activities required pursuant to this Unilateral Administrative Order. O&M for this Site shall be conducted in two phases. Phase I shall address O&M for the berms, disposal areas, and any reclaimed and restored areas. Phase II shall address all other aspects of remedial activities at the Site, including operation and monitoring of the Ponds treatment and discharge system. Therefore, the Work Plan should describe the generic elements of O&M that will be required and specific component needs as necessary. The remedial design for each component shall have a detailed, specific O&M plan. Section 3.5.2 of OSWER Directive 9355.0-4A contains a list of basic elements of an O&M plan that should be followed, with additional site-specific elements.

The draft O&M plan shall be submitted 90 days after EPA approval of the FDR. After EPA review and comment, the final O&M plan shall be submitted 30 days after EPA review and comment on the draft O&M Plan, and is subject to approval by EPA, in consultation with the State.

**V. REMEDIAL ACTION ACTIVITIES**

This section describes the required remedial action activities, reports, and requirements. Remedial action is the actual construction (including procurement) of the remedy, or implementation phase of site cleanup, and includes the shakedown, interim period of operation of the Ponds treatment system described in Exhibit 5. The Remedial Action is based on the Remedial Design to achieve cleanup results specified in the ROD/ ESD and the Unilateral Administrative Order.

## CONSTRUCTION QUALITY ASSURANCE PLAN

Subsequent to EPA review of the DFDR, ARCO shall develop and implement a Construction Quality Assurance (CQA) Plan to ensure that the completed remedial measures will meet or exceed all design criteria, plans, and specifications. The CQA plan must be submitted to and reviewed by the EPA prior to the start of construction. Upon approval of the CQA plan, ARCO shall construct and implement the remedial measures in accordance with the reviewed design, project schedule, CQA plan, and O&M plan. The CQA plan shall include, at a minimum, an explanation of the Construction Authorities and Construction Inspection Activities as discussed below:

### Construction Authorities

The responsibility and authority of the IQAT and all other organizations and persons involved in the construction or operation and maintenance of the remedial measures shall be described fully. The following members of the IQAT must be specifically identified:

> Construction Quality Assurance Officer: Individual in charge of overall Site operations.
> Inspection Staff: Individuals assigned to conduct inspections of equipment, personnel, activities, etc. Persons on the inspection staff , such as the Site health and safety officer, quality assurance officer, etc., should also be noted in the appropriate supporting plans.

### Construction Inspection Activities

The observations and tests that will be used to monitor the construction or installation of the components of the remedial measures shall be summarized in the CQA plan. The plan shall include the scope and frequency of each type of inspection. Inspections shall verify compliance with all environmental requirements. The inspection should also ensure compliance with all health and safety procedures. Other inspections to be conducted include the preconstruction inspection and meeting, prefinal construction completion conferences and inspection, and final construction completion inspection, and the prefinal completion of remedial action inspection and meeting, prefinal completion of remedial action inspection and meeting, and final completion of remedial action inspection.

The draft CQA plan shall be submitted 30 days after receipt of EPA comments on the DFDR. The final CQA plan shall be submitted 30 days after receipt of EPA comments on the draft CQA plan. The plan is subject to approval of EPA, in consultation with the State.

## PRECONSTRUCTION INSPECTION AND MEETING

ARCO shall conduct a preconstruction inspection and meeting with contractors, EPA and MDHES officials; to discuss any appropriate modifications to the construction quality assurance plan to ensure that site-specific considerations are addressed; and conduct a site walk-around to verify that the design criteria plans and specifications are understood, and to review material and equipment storage locations.

The preconstruction inspection and meeting shall occur no later than 45 days after approval of the FDR. ARCO shall bid the project and select a Remedial Action Contractor during this 45 day period. The preconstruction inspection and meeting shall occur after final approval of the CQA Plan.

## MONITORING

Monitoring of remedial actions will be conducted throughout the lifetime of the treatment activities to assure treatment effectiveness, and shall be in accordance with Exhibit 5 of the Unilateral Administrative Order. An appropriate monitoring plan shall be included in the draft and final CQA plan. The O&M Plan shall also contain or incorporate monitoring plans.

## PRECERTIFICATION COMPLETION OF INITIAL CONSTRUCTION INSPECTION AND MEETING

ARCO shall hold a completion conference upon preliminary completion of key initial remedial action construction activities, which include the initial on-Site physical actions required for the construction of the lime treatment system, the flooding or dry closure of contaminated areas in and around Pond 2, and activities necessary for reconstruction, reclamation, and restoration of excavated portions of the Mill-Willow Bypass. The conference agenda will include at least: project status, cleanup and demobilization activities, review of project successes and failures, Phase I O&M initiation and schedule, and other items as necessary. At this time, the EPA and MDHES will conduct a prefinal inspection of the construction site. This inspection will be conducted to assure ARCO compliance with all project plans and to assure cleanup consistency with the ROD/ESD for those activities in initial construction. If outstanding construction items remain, such items will be identified and documented, and a compliance schedule will be established. ARCO shall produce a prefinal inspection report to document the inspection, outstanding items, and a compliance schedule, 10 days after the conference is held.

## FINAL INITIAL CONSTRUCTION COMPLETION INSPECTION

Upon completion of any outstanding construction items, ARCO shall notify the EPA and MDHES for the purposes of conducting a final inspection. ARCO shall demonstrate during the final inspection that all problems identified in the prefinal inspection report have been resolved. If any problem is unresolved or a new discrepancy is noted, this inspection shall be considered a prefinal inspection, and another final inspection will be conducted.

## INITIAL CONSTRUCTION COMPLETION REPORT AND CERTIFICATION

At the completion of the initial construction project, after a final inspection has been conducted, ARCO shall submit a construction completion report. This report shall contain, at a minimum:

Notification that the project was conducted consistent with design specifications as documented in monthly progress reports, and a detailed accounting of any deviations from the design;

A narrative description of the work performed, including modifications reviewed by the EPA;

As-built drawings showing the final construction area configuration as well as details of the structures, facilities, and appurtenances installed as part of the construction activities;

The actual construction schedule;

A listing of criteria used to judge the success of remedial measures;

An evaluation of the success of remedial measures as judged against the evaluation criteria;

Quality control inspection reports, test results, and quality assurance reports;

Sampling results;

Prefinal inspection reports; and

Narrative, detailed descriptions of significant activities conducted on the Site during construction.

## PRECERTIFICATION REMEDIAL ACTION COMPLETION CONFERENCE AND INSPECTION

ARCO shall hold a prefinal remedial action completion conference upon preliminary completion of the remaining key remedial action construction activities, including shakedown operation of the Ponds treatment and discharge system, and 12 months of consistent compliance with the Final Discharge Standards. The conference agenda will include at least: project status, cleanup and demobilization activities, review of project successes and failures, Phase II O&M initiation and schedule, and other items as necessary. At this time, the EPA and MDHES will conduct a prefinal inspection of the construction site. This inspection will be conducted to assure ARCO compliance with all project plans and to assure cleanup consistency with the ROD/ESD. If outstanding construction items remain, such items will be identified and documented, and a compliance schedule will be established. ARCO shall produce a pre-final inspection report to document the inspection, outstanding items, and a compliance schedule, 10 days after the conference is held.

## FINAL INSPECTION

Upon completion of any outstanding construction items, ARCO shall notify the EPA and MDHES for the purposes of conducting a final inspection. ARCO shall demonstrate during the final inspection that all problems identified in the prefinal inspection report have been resolved. If any problem is unresolved or a new discrepancy is noted, this inspection shall be considered a prefinal inspection, and another final inspection will be conducted.

## REMEDIAL ACTION COMPLETION REPORT

At the completion of the construction project and the shakedown period, as defined in Exhibit 5, after a final inspection has been conducted, and after 24 months of consistent compliance with the Final Discharge Standards, ARCO shall submit a remedial action completion report. This report shall contain, at a minimum:

Notification that the project was conducted consistent with design specifications and a detailed accounting of any deviations from the design;

A narrative description of the work performed, including modifications reviewed by the EPA and the State;

As-built drawings showing the final construction area configuration as well as details of the structures, facilities, and appurtenances installed as part of the

construction activities;
The actual construction schedule;

A listing of criteria used to judge the success of remedial measures, and a detailed report documenting compliance with all Performance Standards;

An evaluation of the success of remedial measures as judged against the evaluation criteria;

Quality control inspection reports, test results, and quality assurance reports;

Sampling results;

Prefinal inspection report(s); and

Narrative, detailed descriptions of significant activities conducted on the Site during construction.

This report shall comply with all requirements of the Unilateral Administrative Order.

**OPERATIONS AND MAINTENANCE**

ARCO shall operate and maintain the remedy in accordance with the approved, detailed O&M plan. Phase I of O&M, regarding inspection and maintenance of the berms, the disposal areas, and the reclaimed and restored areas, shall commence after acceptance of the certification of initial completion of construction. Phase II of O&M, regarding all other aspects of O&M at the Site, including monitoring and operation of the Ponds treatment and discharge system, shall commence upon acceptance of the Certification of Completion of Remedial Action.

**FIVE-YEAR REVIEW REPORTS**

In accordance with Section 121(c) of CERCLA, and as set forth in the ROD Declaration, a review of the remedial actions implemented at the Site will be conducted at least once every 5 years. To facilitate these reviews, every 5 years, or more frequently, as deemed necessary by EPA, in consultation with the State, ARCO shall prepare a Five-Year Review Report. These reports shall include, but shall not be limited to, the following elements:

Overall assessment of the performance of the remedy, including attainment of Performance Standards;

Performance of the berm system, with a discussion of any maintenance undertaken, and other factors necessary to evaluate performance;

Performance of the Pond 2 and 3 water treatment system, with emphasis on contaminant concentration reductions, residual concentrations, and other factors necessary to evaluate performance;

Performance of the contaminated sediment and soil dry closure areas, with emphasis on control of contaminant migration from those areas, and success of revegetation

Performance of the reconstructed, reclaimed, and restored Mill-Willow Bypass, with emphasis on channel stability and wildlife habitat restoration success, and any other wetlands mitigation implementation;

Sampling and analysis of surface and ground water to determine whether contaminant concentrations remain at levels appropriate to protect human health and the environment;

A discussion of any remedy modifications made during the previous review period and the necessity for those modifications;

A review of long-term O&M activities, and recommendations for modifications to maximize remedy effectiveness (if necessary);

An assessment of whether the overall remedy is achieving the objectives of the Site cleanup as presented in the Work Plan, ROD as modified by the ESD, Remedial Design and other controlling documents.

If the EPA, in consultation with the State , determines that the remedy does not sufficiently protect human health or the environment, the EPA shall require ARCO to take appropriate action, as described in the Unilateral Administrative Order.

**SCHEDULE**

The schedule attached as Exhibit 3 represents the order of occurrence of various milestones in the remedial design and remedial action process. The dates and activities are mandatory and represents the maximum time allowable for ARCO to submit the requisite plans, reports, surveys, etc. necessary for the EPA and MDHES to oversee this remedial design and remedial action.

**EPA APPROVAL**

EPA "Approval" of the Project Coordinator, the Remedial Design/Remedial Professional, the Remedial Action Constructor, and the Independent Quality Assurance Team, plans,

specifications, processes, and other submittals within the context of this Unilateral Administrative Order is administrative in nature to allow ARCO to proceed to the next step. It does not imply any warranty of performance that the remedy, when constructed, will meet performance standards or will function properly and be accepted.

Exhibit 3

Schedule for remedial design, remedial action,
and operation and maintenance
Warm Springs Ponds Active Area operable unit
Silver Bow Creek/Butte Area (original portion) Superfund Site
Warm Springs, Montana

| Deliverable/Milestone/Event | Due Date |
|---|---|
| Submit Name of the RD/RA Project Manager | 15 days after Respondent's receipt of the Unilateral Administrative Order |
| Notice of Intent to Comply | 5 days after the effective date of the Unilateral Administrative Order |
| Provide Copy of Order to Contractors, Laboratories, and Representatives | 15 days after the effective date of the Unilateral Administrative Order, or upon retention of services |
| Record Order in appropriate governmental office | 15 days after the effective date of the Unilateral Administrative Order |
| Submit Notice and Proof of Recording of Order | 21 days after the effective date of the Unilateral Administrative Order |
| Obtain Access Agreements | 30 days after the effective date of the Unilateral Administrative Order |
| Submit copies of access agreements | Prior to initiation of field activities |
| Submit Financial Assurance | 30 days after the effective date of the Unilateral Administrative Order |

| | |
|---|---|
| Submit Insurance Certification | 7 days prior to beginning physical on-Site activities |
| Reimbursement of Response Costs | 30 days after receipt of EPA accounting and billing |

**Remedial Design**

| | |
|---|---|
| Draft Comprehensive Work Plan, (CWP) including draft Sampling and Analysis Plan (SAP), and draft Health and Safety Plan (HSP), and identification and qualifications for RD/RA Project Manager, RD/RA Professional, and Independent Quality Assurance Team (IQAT) | 20 days after the effective date of the Unilateral Administrative Order |
| Final Comprehensive Work Plan, including SAP, HSP, and identification and qualifications of the RD/RA Manager, RD/RA Professional, and the IQAT | 20 days after receipt of EPA comments on the draft CWP |
| Preliminary Design Report | 45 days after EPA approval of CWP |
| Draft Final Design Report (FDR) including draft Performance Standards Report | 60 days from receipt of EPA comments on Preliminary Design Report |
| Final Design Report and Final Performance Standards Report; including detailed description and detailed schedule for remedial action | 30 days from receipt of EPA comments on the Draft FDR |

| | |
|---|---|
| Draft Construction Quality Assurance Plan (CQAP), including monitoring plan, and name and qualifications of the Remedial Action Contractor | 30 days from receipt of EPA comments on the Draft FDR |
| Final CQAP | 20 days after receipt of EPA comments on draft CQAP |
| Draft Institutional Control Compliance Demonstration Report (ICCDR) | 90 days after the effective date of the Unilateral Administrative Order |
| Final Institutional Control Compliance Demonstration Report | 30 days after receipt of EPA comments on the ICCDR |
| Draft Detailed Operation and Maintenance (O&M) Plan | 90 days after EPA approval of the FDR |
| Final Detailed O&M Plan | 30 days after receipt of EPA comments on the draft O&M Plan |

**Remedial Action**

| | |
|---|---|
| Preconstruction Inspection and Meeting | 45 days after EPA approval of the Final Design Report |
| Begin Remedial Action activities | Pursuant to the approved schedule and plan contained in the Final Design Report; and after EPA approval of the FDR, the CQAP, and the Remedial Action Contractor. |

| | |
|---|---|
| Tier I interim Standards for discharge points from Ponds 2 and 3 | Upon the effective date of the UAO until Four Years after the effective date of the Unilateral Administrative Order |
| Precertification Completion of Initial Construction Inspection and Meeting | Immediately upon Respondent's determination of completion of initial RA activities |
| Initial Construction Completion Report and Certification | 10 days after the Precertification Inspection and Meeting |
| Final Inspection and Meeting (if necessary) | After receipt by EPA of the Initial Construction Completion Report, on a date to be determined by EPA |
| Tier II Interim Standards for Point Source Discharges From Ponds 2 and 3 | From Four Years after the effective date of the Unilateral Administrative Order until Six Years after the effective date of the Unilateral Administrative Order |
| Final Standards for Point Source Discharges From Ponds 2 and 3 | From Six Years after the effective date of the Unilateral Administrative Order onward |

| | |
|---|---|
| Precertification Inspection and Meeting for Completion of Remedial Action | 12 months after consistent compliance with Final Discharge Standards |
| Remedial Action Completion Report and Certification | 24 months after consistent compliance with Final Discharge Standards |
| Final Inspection and Meeting (if necessary) | Upon receipt of the Remedial Action Completion Report by EPA, on a date to be determined by EPA |
| **Operation and Maintenance** | |
| Begin approved O&M activities | Pursuant to the schedule in the Final Detailed O&M Plan; Phase I O&M to begin after acceptance of the Certification of Completion of Initial Construction; Phase II O&M to begin after acceptance of the Certification of Completion of Remedial Action |
| Five Year Review Reports | As specified in the UAO and further described in Exhibit 5 |
| **General** | |
| Daily/Weekly Reports | As specified in the UAO |
| Monthly Reports | As specified in the UAO |
| O&M Reports | As specified in the UAO |
| Monthly Discharge Monitoring Reports | As Specified in Exhibit 5 |

| | |
|---|---|
| Additional Response Actions | As described in the UAO; Notice of Intent to Comply Required in 7 days of receipt of EPA notice; Work Plan required within 30 days of receipt of EPA notice |
| Notify controlling purchasers | Upon occurrence, as described in the UAO |
| Submit to EPA copy of transfer documents and name of transferee | Upon occurrence of sale of Site property, as described in the UAO |
| Notice of Off-Clark Fork Site Shipment of Waste | 5 days prior to occurrence, as described in the UAO |
| Notice to EPA of release of hazardous substances or endangerment | Upon occurrence, as described in the UAO |
| Notice of sampling | 14 days prior to any sampling, as described in the UAO |
| Submittal of Insurance Certification and Policies | 7 Days prior to On-Site Work, and annually |
| Notice of destruction of records | 90 days prior to any destruction, as described in the UAO |

Monitoring: Construction inspections and meetings may occur at EPA's discretion during actual construction. Any modification in the schedule required by EPA will be identified, documented, and a revised schedule for completion, if necessary, will be submitted to EPA by the Respondent within 10 days of the request for a modification.

Construction Completion Conferences: Upon completion of key components of the Remedial Action, completion conferences will be conducted. Several such conferences are anticipated. A Completion Report shall be submitted to EPA by the Respondent within 10 days of each completion conference.

EXHIBIT 4

PERFORMANCE STANDARDS
FOR THE WARM SPRINGS PONDS ACTIVE AREA REMEDIATION
SILVER BOW CREEK/BUTTE AREA (ORIGINAL PORTION) SUPERFUND SITE

The following list of performance standards is based on the list of Applicable or Relevant and Appropriate Requirements (ARARs) for the September, 1990 Warm Springs Ponds operable unit Record of Decision (U.S. EPA), and modifications to that list made in the June, 1991 Explanation of Significant Differences (U.S. EPA), including the errata sheet attached to the Explanation of Significant Differences. It is also based on the risk assessment documents for the Warm Springs Ponds operable unit and related documents, and subsequent evaluation of data generated during performance of the Mill-Willow Bypass removal action.

## I. Contaminant Specific Performance Standards

### A. Air Standards

1. Lead - No person shall cause or contribute to concentrations of lead in the ambient air which exceed **1.5 micrograms per cubic meter (ug/m3) of air, measured over a 90 day average,** in accordance with the substantive standards of ARM § 16.8.815.

   POINT OF COMPLIANCE: Within the confines of the Warm Springs Ponds operable unit, where human exposure is probable.

   TIME OF COMPLIANCE: During the implementation of the remedial action, and at the conclusion of the remedial action and thereafter. Compliance shall be measured in accordance with the methods described in 40 CFR Part 50, and corresponding State law provisions.

2. **Particulate matter that is 10 microns in diameter or smaller (PM-10)** - No person shall cause or contribute to concentrations of PM-10 in the ambient air which exceed:

- **150 micrograms per cubic meter of air, 24 hour average, no more than one expected exceedence per calendar year;**

- **50 micrograms per cubic meter of air, annual average,** in accordance with the substantive standards of ARM § 16.8.821.

  POINT OF COMPLIANCE: Within the confines of the Warm Springs Ponds operable unit, where human exposure is probable.

  TIME OF COMPLIANCE: During the implementation of the remedial action, and at the conclusion of the remedial action and thereafter. Compliance shall be measured in accordance with the methods described in 40 CFR Part 50, and corresponding State law provisions.

3. **Airborne Particulate Matter - Construction activities must not be undertaken unless reasonable precautions are taken to control emissions of airborne particulate matter,** in accordance with ARM § 16.8.1401(4).

   POINT OF COMPLIANCE: At the construction activity.

   TIME OF COMPLIANCE: During the implementation of the remedial action. Compliance shall be measured in accordance with the methods described in 40 CFR Part 50, and corresponding State law provisions.

4. **Opacity - Emissions of airborne particulate matter from any stationary source shall not exhibit any opacity of 20 percent or greater averaged over six consecutive minutes,** in accordance with the substantive standards of ARM § 16.8.1401(4).

   POINT OF COMPLIANCE: At the source of emission.

   TIME OF COMPLIANCE: During the implementation of the remedial action. Compliance shall be measured in accordance with the methods described in 40 CFR Part 50, and corresponding State law provisions.

5. **Road Dust Suppression - Persons who perform construction activity must employ measures to control road dust,** in accordance with the substantive standards of ARM § 16.8.1401(3).

   POINT OF COMPLIANCE: At the construction activity.

   TIME OF COMPLIANCE: During the implementation of the remedial action.

6. **Settled Particulate Matter - No person shall cause or contribute to concentrations of particulate matter in the ambient air such that the mass of settled particulate matter exceeds 10 grams per square meter, 30 day average,** in accordance with the substantive standards of ARM § 16.8.818

   POINT OF COMPLIANCE: Within the confines of the Warm Springs Ponds operable unit, where human exposure is probable.

   TIME OF COMPLIANCE: During implementation of the remedial action, and at the conclusion and thereafter.

7. **General air pollution - Generators of air pollution must achieve and maintain such levels of air quality as will protect human health and safety, to the greatest extent practicable,** in accordance with the substantive standards of MCA § 75-2-102.

   POINT OF COMPLIANCE: Within the confines of the Warm Springs Ponds operable unit, where human exposure is probable.

   TIME OF COMPLIANCE: During implementation of the remedial action, and at the conclusion and thereafter. Compliance with the numeric standards listed will achieve compliance with this standard.

8. **Occupational Health and Safety Standards - No worker shall be exposed to:**

| | |
|---|---|
| Arsenic | 0.5 milligrams per cubic meter (mg/m3) |
| Inorganic Arsenic | 10.0 ug/m3 |
| Copper | 1.0 mg/m3 |
| Lead | 0.15 mg/m3 |
| Manganese | 5.0 mg/m3 |
| Selenium compounds | 0.2 mg/m3 |
| Silver | 0.01 mg/m3 |
| Cadmium Dust | 0.2 mg/m3, 8 hour time weighted average |
| Mercury | 0.1 mg/m3 acceptable ceiling |
| Silica-crystalline quartz | 250 millions of particulates per cubic foot of air |
| Inert or nuisance dust | 15 mppcf<br>5.0 mg/m3 |
| Total Dust | 50 mppcf<br>15.0 mg/m3 |

COMPLIANCE: The Respondent is required to comply with the Occupational Health and Safety Act, 29 U.S.C. §§ 651 - 678, and regulations promulgated at 29 CFR §§ 1910.1000, 1910.1018(c), and 1910.1025(c); and the Occupational Health Act of Montana, MCA §§ 50-70-113 and ARM § 16.42.102. Compliance with these acts and regulations, including the contaminant specific parameters identified above, will be accomplished in part through the submittal of a Site Health and Safety Plan, and compliance with that plan.

B. Ground Water Standards

1. **Contamination of ground water is prohibited. Ground Water wells must be constructed and maintained so as to prevent waste, contamination, or pollution of ground water,** in accordance with the described substantive standards of MCA § 85-2-505. **Activities cannot result in the degradation of ground water,** in accordance with ARM §§ 16.20.1011, .1003, .203, .204, .206, .207, and .1002.

POINT OF COMPLIANCE: At the location of any ground water well located at Warm Springs Ponds operable unit.

TIME OF COMPLIANCE: During construction or maintenance of any ground water well, both during implementation of the remedial action and upon completion of the remedial action.

C. Surface Water Standards for Point Source Discharges from Ponds 2 and 3 and for Receiving Waters.

1. **Numeric limitations for point source discharges, other than emergency spillway discharges or bypass events, are (all values expressed a milligrams per liter):**

| | Acute | Chronic |
|---|---|---|
| Arsenic | 0.02 | 0.02 |
| Cadmium | 0.0039 | 0.0011 |
| Copper | 0.018 | 0.012 |
| Iron | - | 1.0 |
| Lead | 0.082 | 0.0032 |
| Mercury | 0.0002 | 0.0002 |
| Selenium | 0.26 | 0.035 |
| Silver | 0.0041 | 0.00012 |
| Zinc | 0.12 | 0.11 |
| pH | Range between 6.5 and 9.5. | |

These standards are set in accordance with ARM §§ 16.20.604, 16.20.622(2) and 16.20.618(2), and the ARAR waiver provisions of section 121(d)(4)(A) and (C) of CERCLA, 42 U.S.C. § 9621(d)(4)(A) and (C). Monitoring of point source discharges must be in compliance with 40 CFR § 122.44(i) and 40 CFR Part 136, and best management practices for operation of the Pond Treatment system must be in compliance with 40 CFR § 440.148.

POINT OF COMPLIANCE: At the point of discharge. No mixing zone will be applied to measure compliance with these requirements.

TIME OF COMPLIANCE: Upon completion of the remedial action and thereafter.

Until five years after the completion of initial construction action, interim numeric limits must be complied with by the Respondent. Interim limits, final limits, time periods for compliance, compliance monitoring requirements, and other details concerning point source discharges at the Pond Treatment system are contained in Exhibit 5 of the Unilateral Administrative Order issued to the Respondent, Detailed Performance Standards for the Point Source Discharges for the Pond Treatment System (hereinafter, Exhibit 5). Requirements and standards contained in that document must also be complied with by the Respondent.

In addition, the pollution sources from the Warm Springs Ponds Active Area, including the point source discharges, may not degrade existing high quality water. Compliance with the standards identified above will likely achieve compliance with this requirement.

These standards are set in accordance with MCA § 75-5-303 and ARM §§ 16.20.604, 16.20.622(2), 16.20.618(2), and 16.20.702.

POINT OF COMPLIANCE: Within the receiving stream.

TIME OF COMPLIANCE: Upon completion of the remedial action and thereafter.

2. **Numeric limitations for the receiving water of the point source discharges.**

| | |
|---|---|
| Induced variation in pH | Induced variation of pH within the range of 6.5 to 9.5 must be less than 0.5 pH unit. Natural pH outside this a range must be maintained without change. Natural pH above 7.0 must be maintained above 7.0; |
| Dissolved Oxygen | Must not be reduced below 7.0 mg/l; |
| Turbidity | No more than 5 nephelometric turbidity units above naturally occurring turbidity, except, with prior approval of EPA, for short-term construction or hydraulic projects, or game fish population restoration; |
| Temperature | A 1 degree F maximum increase above naturally occurring water temperature is allowed within the range of 32 degrees F to 66 degrees F; and no discharge can cause the water temperature to exceed 67 degrees F, if the naturally occurring range is 66 degrees F to 66.5 degrees F; and the maximum allowable increase in water temperature is 0.5 degrees F, where the naturally occuring water temperature is 66.5 F or greater. A 2 degree F per hour decrease below naturally occurring water temperature is allowed when the water temperature is above 55 degrees F; and a 2 degree F maximum decrease below naturally occurring water temperature is allowed within the range of 55 degrees F to 32 degrees F; |

| | |
|---|---|
| Color | True color must not be increased more than 5 units above naturally occurring color in the receiving stream. |

No increases are allowed above naturally occurring concentration of sediment, settleable solids, oils, or floating solids in the receiving waters 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, or other wildlife.

These standards are set in accordance with ARM §§ 16.20.622(2) and 16.20.618(2).

POINT OF COMPLIANCE: Within the receiving stream.

TIME OF COMPLIANCE: Upon completion of the remedial action and thereafter. In the interim time period, these parameters should be monitored as appropriate.

D. Contaminated Soils and Mining Waste

Contaminated soils and other mining waste found within the Warm Springs Ponds active area will be remediated through excavation and dry closure, capping, or flooding. All such material which meets or exceeds the following criteria shall be addressed through the Warm Springs Pond active area remediation, in a manner consistent with the ROD and ESD and as approved by EPA.

**Color** shall be used as the primary criteria. Discolored materials shall be remediated. Discolored materials are readily identified visually by discoloration compared to the natural color of adjacent materials.

**Texture** shall be used as a secondary criterion for remediation. Soils or waste materials which are fine grained shall be remediated. Fine grained materials can be distinguished from coarse grained materials by identifying coarse sand, gravel, or cobbles (Refer to section 2.1 of the Mill-willow Bypass Removal Work Plan).

Following remediation of the above identified materials, the contaminant concentrations of soils and waste material remaining unremediated are expected to exhibit the range of concentrations shown in the attached table. If this range is not exhibited, remediation shall continue until the range is exhibited, in a manner to be approved by EPA.

## II. Location Specific Performance Standards

### A. Floodplain and Floodway Management Act Standards

1. Structures such as parks and wildlife management areas are permitted within floodplains, in accordance with the substantive provisions of MCA § 76-5-402.

2. Water conservation projects, flood control projects, conservation and wildlife protection projects, streamflow stabilization projects, and pollutant abatement projects are permitted in floodplains and floodways. These may include dikes, embankments, impounding reservoirs, and other watercourse improvements, in accordance with the substantive provisions of MCA §§ 76-5-1101 and 1102, and ARM § 36.15.801.

3. Flood control works are permitted in the floodplain and floodway, if they are protective to the 100 year flood frequency flow, in accordance with the substantive provisions of ARM § 36.15.606.

4. Construction and remediation activities must minimize potential harm to the floodplain and improve natural and beneficial values of the floodplain, in accordance with the substantive provisions of 40 CFR § 6.302(b) and Executive Order No. 11,988.

5. The Pond 2 and 3 facilities must be designed, constructed, operated, and maintained to avoid washout to the 100 year floodplain, in accordance with ARM § 16.44.702, as that section incorporates 40 CFR § 264.18(a) and (b).

### B. Natural Streambed and Land Preservation Act Standards

1. Soil erosion and sedimentation to Montana rivers must be kept to a minimum, in accordance with MCA § 75-7-102.

### C. Historic Preservation Standards

1. The Rainbow Bridge within Pond 2 is eligible for inclusion of the Register of Historic Places. The bridge must be photographed and recorded, according to the substantive regulations governing preservation of historic places. Additional measures may be identified during remedial design for compliance with this standard, in accordance with the substantive provisions of 40 CFR § 6.301(b) and 36 CFR Part 800.

2. If significant scientific, prehistorical, historic, or archaeologic data is found at the Warm Springs Ponds active area, it must be preserved in an appropriate manner, in

accordance with the substantive provisions of 40 CFR § 6.301(c).

D. Wetlands Protection Standards

1. An inventory of wetlands at the Warm Springs Ponds active area as they existed prior to any cleanup activities must be compiled and approved. Activities must be conducted so as to avoid or minimize destruction of wetlands. If destruction is not avoidable, wetlands must be replaced and/or restored to ensure that no net loss of wetlands will occur as a result of the cleanup activities (past and present) at the Warm Springs Ponds active area, in accordance with the substantive provisions of 40 CFR § 6.302(a) and 40 CFR Part 6, Appendix A and Executive Order No. 11,990.

It is the current belief of EPA and the consulting agencies that previous cleanup of the Mill Willow Bypass and other areas of the Warm Springs Ponds active area has and will continue to have adverse impacts on wetland habitats. Therefore, all efforts and reconstruction, reclamation, restoration, or other similar activities planned by the Respondent must be done as part of the remedial action implementation process, to ensure compliance with this standard.

E. Endangered Species Protection Standards

1. Bald eagles and peregrine falcons have been identified as users of the Warm Springs Ponds active area. Appropriate mitigative measures during construction activities must be followed, and additional biological surveys or other studies may be required, in accordance with the substantive provisions of the Endangered Species Act, 16 U.S.C. § 1531 et seq., and 50 CFR Parts 17 and 402, and 40 CFR § 6.302(h).

## III. Action Specific Performance Standards

A. Reconstruction/Reclamation/Restoration of the Mill-Willow Bypass

The Warm Springs Ponds active area remediation involves and has involved the excavation and reconstruction, reclamation, and/or restoration of the Mill-Willow Bypass. The Mill-Willow Bypass from the southern boundary of the Bypass to the end of Pond 2 is addressed in this action. In addition to the contaminant specific and location specific standards identified above, further cleanup work in the Bypass and any following reconstruction, restoration, and/or reclamation work must comply with the following requirements:

1. Substantive provisions of the dredge and fill requirements must be met, in accordance with 40 CFR Parts 230 and 231 and 33 CFR Parts 323 and 330.

2. Reclaimed drainages must be designed to emphasize channel and floodplain dimensions that will blend with the undisturbed drainage above and below the area to be reclaimed. The channel must be restored to its natural habitat or characteristic pattern with a geomorphically acceptable gradient. The drainage must safely pass through a 24-hour precipitation event with a 100-year recurrence interval. Reclamation must provide for long-term stability of the landscape, establishment or restoration of the stream to include a diversity of aquatic habitats (generally a series of riffles and pools), and restoration enhancements, or maintenance of natural riparian vegetation, in accordance with the substantive provisions of ARM § 26.4.634.

3. Temporary diversion structures at the Bypass or on Silver Bow Creek or nearby creeks must be constructed to safely pass the peak run-off from a precipitation event with a 10-year, 24-hour recurrence interval. Channel lining must be designed using standard engineering practices such as riprap, to safely pass designed velocity. Free board must be no less than 0.3 feet, all in accordance with the substantive provisions of ARM § 26.4.636.

4. Reclamation and revegetation requirements described below in Section III.B. must be met.

   As noted above, reconstruction, reclamation, and restoration measures are required for the Bypass area pursuant to this administrative order, in part to ensure compliance with the standards regrading no net loss of wetlands at the Warm Springs Ponds active area.

B. General Reclamation and Revegetation Standards

The Warm Springs Ponds active area remediation involves and has involved excavation of contaminated areas, dry capping of contaminated areas, and the creation and maintenance of disposal areas within the Pond 3 berms. All of these areas must be reclaimed and revegetated. For those activities, the following standards apply:

1. The disposal unit and other reclaimed areas must be covered with clean soil and revegetated in an appropriate manner, consistent with the Timber Butte removal action and work plan, in accordance with the substantive provisions of 30 CFR § 816.111.

2. Revegetation of any excavated, capped in place area, disposal area, or other land area disturbed or addressed by this action must comply with the substantive standards of ARM §§ 26.4.501, .501(a), .505, .520, .631, .633, .638, .644, .703, .711, .713, .714, .716, .718, .719, .721, .724, .726, .728, .730, .751, and .761, and MCA §§ 82-4-231 and -233.

C. The Dry Disposal Areas within Pond 3 Standards.

The Warm Springs Ponds active area remediation involves and has involved the creation and maintenance of dry disposal areas within the Pond 3 berms. The construction and maintenance of these areas must comply with the following standards:

1. All waste within the disposal areas must be drained of free liquids, and stabilized appropriately, in accordance with the substantive provisions of 40 CFR § 264.228(a), which is incorporated by reference into ARM § 16.44.702.

2. Closure of the disposal areas must be done in such a manner as to minimize the need for further maintenance and to control, minimize, or eliminate, to the extent necessary to protect public health and the environment, post-closure escape of hazardous substances, hazardous constituents, leachate, contaminated run-off or hazardous substance decomposition products to the ground water or surface waters or to the atmosphere, all in accordance with the substantive provisions of 40 CFR § 264.111, which is incorporated by reference into ARM § 16.44.702. This standard does not require an impermeable cap or liners.

3. Disposal facility covers for each unit must function with minimum maintenance, promote drainage, and minimize erosion or abrasion of the final cover, and accommodate settling and subsidence, in accordance with 40 CFR § 264.228(a)(2)(iii)(B), (C), and (D), which is incorporated by reference into ARM § 16.44.702.

4. The Respondent must submit to the local land use or zoning authority a survey plat indicating the location and dimensions of waste disposed of in each unit. Additionally, the Respondent must record a deed restriction, in accordance with State law, that will in perpetuity notify potential purchasers that the property has been used for waste disposal and that its use is restricted, in accordance with the substantive provisions of 40 CFR §§ 264.116 and .119, which is incorporated by reference into ARM § 16.44.702.

5. The Respondent's waste can be disposed of on its own property, but the disposal areas must not create a nuisance or a public hazard. Additionally, the waste must be

disposed of outside of the 100 year flood plain, must be disposed of in a manner which prevents pollution of the ground or surface water, must contain adequate drainage structures, and must prevent run-off from entering disposal areas; and waste must be transported to the disposal areas in such a manner as to prevent its discharge, dumping, spillage, or leaking, in accordance with the substantive provisions of ARM §§ 16.14.505 and .523, and MCA § 75-10-214.

D. Berm Strengthening Standards

Many of the berms within the Warm Springs Ponds active area will be or have been remediated by strengthening the berms against floods or earthquakes. The berm strengthening actions must comply with the following standards:

1. The dams and reservoirs which store water must do so in a secure, thorough,and substantial and safe manner, in accordance with the substantive provisions of MCA §§ 85-15-207 and 208.

2. All high hazard dams and berms must comply with the criteria given in ARM § 36.14.501, including compliance with the Maximum Credible Earthquake standards.

3. All high hazard dams must be able to safely pass the flood calculated from the inflow design flood, to the extent of safely managing the 0.5 Probable Maximum Flood, in accordance with the substantive provisions of ARM § 36.14.502.

E. Standards Associated with Continued Operation of Ponds 2 and 3

Under this interim remedial action at the Warm Springs Ponds active area, Ponds 2 and 3 will be left in place, and will continue to function as treatment and storage ponds for hazardous substances. This continued operation must comply with the following standards:

1. The structural integrity of the Ponds must comply with the substantive provisions of 40 CFR § 264.221(f), (g), (h) and 40 CFR § 264.226, which are incorporated by reference into ARM §§ 16.44.701 - .703. This includes protection against overtopping and continued regular inspection and maintenance.

2. Discharges from the Ponds must be monitored in compliance with ARM § 16.20.1321(12)(f) and 40 CFR § 122.44(i), which incorporates by reference 40 CFR Part 136. Full monitoring requirements for point source discharges from the Ponds Treatment System are described in Exhibit 5.

3. The Ponds must be operated with the substantive standards describing Best Management Practices found in ARM § 16.20.1310(15)(a) and 40 CFR § 125.102.

4. The Ponds must be operated to prevent pollution of surface waters above the numeric standards identified above, in accordance with the substantive standards of ARM §§ 16.20.633, and MCA §§ 75-5-605 and 75-6-112(2).

F. Ground Water Monitoring Standards

The Warm Springs Ponds active area remediation will involve ground water monitoring from existing wells if possible. Such activities must comply with the following standards:

1. Standards established in 40 CFR § 264.97, which is incorporated by reference into ARM § 16.44.702, must be complied with. Only contaminants for ground water identified in the September 1990 ROD must be monitored.

## IV. Other Laws

In addition to the environmental or siting standards identified above, the State of Montana has identified a list of other State laws which should be complied with during the conduct of site remediation and maintenance activities. These are:

A. Occupational Health and Safety, and Community and Worker Right to Know Laws

1. Noise levels for protection of on-site workers must be met, as described in ARM § 16.42.101.

2. The Occupational Health and Safety Act, 20 U.S.C. §§ 651 - 678, and implementing regulations must be complied with. Particularly, 29 CFR Part 1926 and 29 CFR §§ 1910.120 and .132 must be complied with. As noted earlier, the Respondent is required to submit and follow and site specific Health and Safety Plan for conduct of activities at the Warm Springs Ponds active area.

3. To the extent it is applicable, substantive provisions of the Montana Safety Act, MCA § 50-71-201 must be complied with.

4. To the extent applicable, the Employee and Community Hazardous Chemical Information Act must be complied with, in accordance with the substantive provisions of MCA §§ 50-78--202, -203, -204, and -305.

B. Ground Water Well Drilling and Monitoring

1. If ground water wells are determined to be necessary, well drillers must be licensed and registered as stated in ARM §§ 36.21.402, .403, .405, .406, .411, .701, and .703.

2. Ground water wells must be logged and reported to the Department of Natural Resources Conversation, as stated in MCA § 85-2-516.

C. Water use rights

1. To the extent applicable, any remedial activities at the Warm Springs Ponds active area must comply with the substantive provisions of MCA §§ 85-2-301, -306, -311, and -402, and MCA §§ 75-7-104 and 87-5-506, and implementing regulations found at ARM §§ 36.16.104 - .106, and 26.4.648. Appropriate notice to the Department of Natural Resources should be given.

TABLE E-1

## STATISTICAL SUMMARY OF CLP ANALYTICAL DATA BY MATERIAL TYPE PRE-REMOVAL AND POST-REMOVAL CONFIRMATION SOIL SAMPLING MILL-WILLOW BYPASS AREA

| PARAMETER & STATISTICS | PRE-REMOVAL DATA | | | POST-REMOVAL DATA | |
|---|---|---|---|---|---|
| | 1 TAILINGS & ASSOCIATED SOILS | 2 PROPOSED SOIL BORROW MATERIAL | 3 SOILS AT EXCAVATION GRADE PROPOSED | 4 BYPASS SOILS AT GRADE ATTAINED | 5 SOIL BORROW MATERIAL USED |
| **ARSENIC** | | | | | |
| Minimum | 22 | 6 U | 6 U | 8.4 U | 8.2 |
| Maximum | 2750 | 92.7 | 17.2 | 42.1 | 94 |
| Mean | 244 | 17.3 | 8.6 | 14.8 | 22.5 |
| Std Deviation | 411 | 16.5 | 3.8 | 7.8 | 22.1 |
| n | 81 | 27 | 20 | 100 | 44 |
| **CADMIUM** | | | | | |
| Minimum | 0.4 U | 0.4 U | 0.4 U | 0.8 U | 0.8 U |
| Maximum | 166 | 4.3 | 4.2 | 4 | 2.2 |
| Mean | 9 | 0.9 | 1.9 | 1.1 | 1.0 |
| Std Deviation | 22.6 | 1.1 | 1.6 | 0.6 | 0.3 |
| n | 81 | 27 | 20 | 100 | 44 |
| **LEAD** | | | | | |
| Minimum | 16.5 | 4 U | 4 U | 8.4 U | 8.2 U |
| Maximum | 1630 | 30.3 | 19.8 | 45.5 | 122 |
| Mean | 238 | 10.4 | 6.1 | 16.3 | 20 |
| Std Deviation | 239 | 7.3 | 4.1 | 7.6 | 20.9 |
| n | 81 | 27 | 20 | 100 | 44 |
| **COPPER** | | | | | |
| Minimum | 142 | 11.9 | 7.1 | 0.6 U | 7.2 U |
| Maximum | 66300 | 461 | 65.6 | 287 | 447 |
| Mean | 2758 | 83 | 21.1 | 64.7 | 74.6 |
| Std Deviation | 7934 | 113 | 18.1 | 54.1 | 95.5 |
| n | 81 | 27 | 20 | 100 | 44 |
| **ZINC** | | | | | |
| Minimum | 109 | 18.3 | 15.6 | 0.4 U | 16.9 U |
| Maximum | 41000 | 567 | 277 | 573 | 365 |
| Mean | 1996 | 113 | 46.5 | 124.4 | 74.3 |
| Std Deviation | 5066 | 134 | 64.7 | 117.1 | 68.9 |
| n | 81 | 27 | 20 | 100 | 44 |

U = Less than instrument detection limit

All values in milligrams per kilogram, except n, which is the number of samples analyzed.

# EXHIBIT 5

## Detailed Performance Standards for Point Source Discharges from Ponds 2 and 3

I. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

A. Definitions.

1. The "30-day (and monthly) average," is the arithmetic average of all composite samples collected during a consecutive 30-day period or calendar month, whichever is applicable. The calendar month shall be used for purposes of reporting self-monitoring data on discharge monitoring report forms.

2. "Daily Maximum" ("Daily Max.") is the maximum value allowable in any single composite sample.

3. "Composite samples" shall be flow proportioned. The composite sample shall, as a minimum, contain at least four (4) samples collected over the compositing period. Unless otherwise specified, the time between the collection of the first sample and the last sample shall not be less than six (6) hours nor more than 24 hours. Acceptable methods for preparation of composite samples are as follows:

   a. Constant time interval between samples, sample volume proportional to flow rate at time of sampling;

   b. Constant time interval between samples, sample volume proportional to total flow (volume) since last sample. For the first sample, the flow rate at the time the sample was collected may be used. When substantial diurnal flow variations do not occur, simple time-composite sampling are allowed;

   c. Constant sample volume, time interval between samples proportional to flow (i.e., sample taken every "X" gallons of flow); and,

   d. Continuous collection of sample, with sample collection rate proportional to flow rate.

4. A "grab" sample, for monitoring requirements, is defined as a single "dip and take" sample collected at a representative point in the discharge stream.

5. An "instantaneous" measurement, for monitoring requirements, is defined as a single reading, observation, or measurement.

6. "Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with effluent limitations because of factors beyond the reasonable control of Settling Respondent. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

7. "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility. The intentional release of treated water from the Pond 3 controlled discharge or emergency spillway structures shall not be a Bypass.

8. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

9. "Completion of Initial Construction" means the completion of the initial on-site physical actions required for the construction of the lime treatment system, the flooding or dry closure of contaminated areas in and around Pond 2, and the reconstruction, reclamation, and restoration of the excavated portions of the Mill-Willow Bypass, as described in the Work Plan and the Final Design Report. Completion of Construction does not include activities required under Sections X and XII of the Unilateral Administrative Order, or activities occurring during the shakedown period of operation of the Pond system.

B. Description of Discharge Points

The authorization to discharge is limited to those outfalls specifically designated below as discharge locations. Flows which bypass the Pond System during abnormally high flow periods (flows in excess of approximately 3,300 cfs) are not regulated by these conditions. Discharges at any location not authorized herein are a violation and could subject the Respondent to penalties. Knowingly discharging from an unauthorized location or failing to report an unauthorized discharge within a reasonable time from first learning of an unauthorized discharge could subject the Respondent to criminal penalties.

| Outfall Serial Number | Description of Discharge |
|---|---|
| 002 | Pond 2 controlled discharge to the Mill-Willow Bypass. |
| 003 | Pond 3 controlled discharge to the Mill-Willow Bypass. |
| 004 | Pond 2 Emergency Spillway discharge. |
| 005 | Pond 3 Emergency Spillway discharge. |
| 006 | Drains from the North-South Dike adjacent to the Mill-Willow Bypass. |

C. Discharge Conditions

1. Discharge 002 - Pond 2 Controlled Discharge

a. Tier I Interim Standards. The following limitations are effective immediately upon the effective date of the Unilateral Administrative Order, which this document is an attachment to. These limitations will remain in effect until four years after the effective date of the Unilateral Administrative Order.

| Parameter | Daily Max.(mg/l)* | Monthly Avg.(mg/l)* |
|---|---|---|
| Arsenic (Total) | 0.05 | 0.02 |
| Cadmium | 0.01 | 0.0062 |
| Copper | 0.09 | 0.035 |
| Iron | 2.2 | 1.5 |
| Lead | 0.1 | 0.1 |
| Mercury | 0.001 | 0.0002 |
| Zinc | 0.3 | 0.16 |
| TSS | 45.0 | 45.0 |
| pH | 6.5-9.5 Units | |

* With the exception of arsenic, copper, iron, mercury, TSS and pH, these limitations are based on the Acute Ambient Water Quality Criteria assuming a hardness of 150 mg/l. Adjustment factors for hardness contained in the "Quality Criteria For Water 1986" also known as the "Gold Book" will be applied to limitations for cadmium, lead and zinc. Hardness shall be measured in the discharge and adjustments to the limitations calculated for each composite sample with measured hardness greater than 150 mg/l.

b. Tier II Interim Standards. Four years after the effective date of the Unilateral Administrative Order, the following limitations shall become effective:

| Parameter | Daily Max.(mg/l)* | Monthly Avg.(mg/l)* |
|---|---|---|
| Arsenic (Total) | 0.02 | 0.02 |
| Cadmium | 0.0039 | 0.0039 |
| Copper | 0.035 | 0.018 |
| Iron | 1.5 | 1.5 |
| Lead | 0.082 | 0.082 |
| Mercury | 0.0002 | 0.0002 |
| Zinc | 0.12 | 0.12 |
| TSS | 45.0 | 45.0 |
| pH | 6.5-9.5 Units | |

* With the exception of arsenic, copper, iron, mercury, TSS and pH, these limitations are based on the Acute Ambient Water Quality Criteria assuming a hardness of 100 mg/l. Hardness shall be measured in the discharge and limitations adjusted for each sample with hardness greater than 100 mg/l. The monthly average copper limitation also may be adjusted for measured hardness. These limitations will remain in effect until six years after the effective date of the Unilateral Administrative Order.

c. Final Standards. The following limitations shall become effective six years after the effective date of the Unilateral Administrative Order.

| Parameter | Daily Max.(mg/l)* | Monthly Avg.(mg/l)* |
|---|---|---|
| Arsenic (Total) | 0.02 | 0.02 |
| Cadmium | 0.0039 | 0.0011 |
| Copper | 0.018 | 0.012 |
| Iron | 1.5 | 1.0 |
| Lead | 0.082 | 0.0032 |
| Mercury | 0.0002 | 0.0002 |
| Selenium+ | 0.26 | 0.035 |
| Silver+ | 0.0041 | 0.00012 |
| Zinc | 0.12 | 0.11 |
| TSS | 45.0 | 30.0 |
| pH | 6.5-9.5 Units | |

+ At the conclusion of four years after the effective date of the Unilateral Administrative Order, EPA will reevaluate the frequency of monitoring and the necessity of retaining the numeric limitations for silver and selenium. If changes are appropriate, EPA may modify Exhibit 5and the Unilateral Administrative Order.

* These limitations are the Chronic and Acute Ambient Water Quality Criteria assuming a hardness of 100 mg/l. Adjustments to the limitations based on measured hardness at the discharge shall be made for cadmium, copper, lead, silver (except no adjustment is allowed in the monthly average limitation for silver) and zinc.

2. Discharge 003 - Pond 3 Controlled Discharge

a. Tier I Interim Standards. The following discharge limitations are effective upon the effective date of the Unilateral Administrative Order:

| Parameters | Daily Max.(mg/l)* | Monthly Avg.(mg/l)* |
|---|---|---|
| Arsenic (Total) | 0.05 | 0.02 |
| Cadmium | 0.01 | 0.0062 |
| Copper | 0.09 | 0.035 |
| Iron | 2.2 | --- |
| Lead | 0.1 | 0.1 |
| Mercury | 0.001 | 0.0002 |
| Zinc | 0.3 | 0.16 |
| TSS | 45.0 | 45.0 |
| pH | 6.5-9.5 Units | |

* See footnotes in I.C.1. These discharge limitations assume a hardness of 150 mg/l. Adjustments to the limitations shall be made, based on measured hardness at the discharge, for those samples with hardness greater than 150 mg/l.

These limitations will apply until four years after the effective date of the Unilateral Administrative Order. Monthly average limits shall not apply until EPA certifies the completion of construction for the Pond upgrade requirements.

b. Tier II Interim Standards. Four years after the effective date of the Unilateral Administrative Order, the following limitations shall become effective:

| Parameters | Daily Max.(mg/l)* | Monthly Avg.(mg/l)* |
|---|---|---|
| Arsenic (Total) | 0.02 | 0.02 |
| Cadmium | 0.0059 | 0.00592 |
| Copper | 0.053 | 0.027 |
| Iron | 2.2 | 2.2 |
| Lead | 0.123 | 0.123 |
| Mercury | 0.0002 | 0.0002 |
| Zinc | 0.18 | 0.18 |
| TSS | 45.0 | 45.0 |
| pH | 6.5-9.5 Units | |

* See footnote at I.C.1. For cadmium, copper, iron and zinc, these limitations are 150 percent of the associated discharge limitations for Pond 2. For those parameters for which the limitations are based on an assumed hardness of 100 mg/l, adjustments can be made to the limitations according to the measured hardness

of the discharge. The adjusted limitation shall be 150 percent of the appropriate Acute Ambient Water Quality Criteria at the measured hardness. These limitations will apply until six years from the effective date of the Unilateral Administrative Order.

c. Final Standards. The following discharge limitations shall become effective six years after the effective date of the Unilateral Administrative Order:

| Parameter | Daily Max.(mg/l)* | Monthly Avg.(mg/l)* |
|---|---|---|
| Arsenic (Total) | 0.02 | 0.02 |
| Cadmium | 0.0039 | 0.0011 |
| Copper | 0.018 | 0.012 |
| Iron | 1.5 | 1.0 |
| Lead | 0.082 | 0.0032 |
| Mercury | 0.0002 | 0.0002 |
| Selenium+ | 0.26 | 0.035 |
| Silver+ | 0.0041 | 0.00012 |
| Zinc | 0.12 | 0.11 |
| TSS | 45.0 | 30.0 |
| pH | 6.5-9.5 Units | |

+ At the conclusion of four years after the effective date of the Unilateral Administrative Order, EPA will reevaluate the frequency of monitoring, as described in this Exhibit, and the necessity of retaining the numeric limitations for silver and selenium. If changes are appropriate, EPA may modify Exhibit 5 and the Unilateral Administrative Order.

* These limitations are based on Acute and Chronic Ambient Water Quality Criteria and assume a hardness of 100 mg/l. Adjustments to the limitations based on measured hardness at the discharge shall be made for cadmium, copper, lead, silver (except no adjustment is allowed in the monthly average limitation for silver) and zinc.

3. Discharges 004 and 005 - Emergency Spillway Discharges from Ponds 2 and 3.

Discharges from the Emergency Spillways in Pond 2 and Pond 3 may occur at any time that the water level in the respective pond rises above the elevation of the spillway. The quality of these discharges will not be regulated. Monitoring and reporting of spillway discharge is required as specified below in sections II, III and IV.

Respondent shall not use discharges 004 and 005 solely to avoid compliance with the discharge limitations applied to discharges 002 and 003.

4. Discharge 006 - Toe Drains from the North-South Dike adjacent to the Mill-Willow Bypass.

There shall be no discharge from the toe drains to the Mill-Willow Bypass effective one year after the effective date of the Unilateral Administrative Order. Flows from the drains shall be collected and returned to the Pond system for treatment.

D. Monitoring Requirements

As a minimum, within 45 days of the effective date of the of the Unilateral Administrative Order, the following constituents shall be monitored at the frequency and with the type of measurement indicated; samples or measurements shall be representative of the volume and nature of the monitored discharge. All monitoring and sampling shall use EPA total recoverable methods.

1. Discharge 002 - Pond 2 Controlled Discharge

| Parameter | Frequency | Sample Type |
|---|---|---|
| Arsenic (Total) | Twice per week | Composite |
| Cadmium | " | " |
| Copper | " | " |
| Iron | " | " |
| Lead | " | " |
| Mercury | " | " |
| Selenium | Once per month | " |
| Silver | " | " |
| Zinc | Twice per week | " |
| Total Flow, mgd (a),(b) | " | " |
| Hardness | " | " |
| pH, Units | " | " |
| Temperature, $^{o}C$ | " | " |
| Total Suspended Solids | " | " |
| Volatile Suspended Solids | " | " |
| Turbidity | " | " |
| Specific Conductance | " | " |
| Alkalinity | " | " |
| Sulfate | " | " |
| $NO_3+NO_2-N$ | Twice per month | composite |
| $NH_3-N$ | " | " |
| TKN | " | " |
| Total Phosphorous | " | " |
| Dissolved Ortho-P | " | " |

(a) Flow measurements of effluent volume shall be made in such a manner that the Respondent can affirmatively demonstrate that representative values are being obtained.

(b) If the rate of discharge is controlled, the rate and duration of discharge shall be reported.

2. Discharge 003 - Pond 3 Discharge

Measurements shall be made prior to discharge from Pond 3 discharge (even if discharge is not occurring), and during any discharge period. Each sample for laboratory analysis shall be taken in the immediate vicinity of the discharge structure.

| Parameter | Frequency | Sample Type |
|---|---|---|
| Arsenic | Prior to discharge and twice per week during discharge | Grab |
| Cadmium | " | Composite |
| Copper | " | " |
| Iron | " | " |
| Lead | " | " |
| Mercury | " | " |
| Selenium | Once per month | " |
| Silver | " | " |
| Zinc | Twice per week | " |
| Total Flow, mgd (a),(b) | " | " |
| Hardness | " | " |
| pH, Units | " | " |
| Temperature, $^{o}C$ | " | " |
| Total Suspended Solids | " | " |
| Volatile Suspended Solids | " | " |
| Turbidity | " | " |
| Specific Conductance | " | " |
| Alkalinity | " | " |
| Sulfate | " | " |
| $NO_3/NO_2$-N | Twice per month | composite |
| $NH_3$-N | " | " |
| TKN | " | " |
| Total Phosphorous | " | " |
| Dissolved Ortho-P | " | " |

(a) Total flow during each discharge event will be calculated from Pond 3 operating records.

(b) The rate and duration of discharge shall be reported.

3. Discharges 004 and 005 - Pond 2 and 3 Emergency Spillway Discharges.

| Effluent Characteristic | Frequency | Sample Type |
|---|---|---|
| Total Flow | Continuous | Depth recorder at Weir |

Total flow during each discharge event will be calculated from Pond 3 operating records.

4. Additional Monitoring - The inlet to Pond 3 prior to the addition of treating chemicals shall be monitored as indicated. Monitoring shall begin one year after the effective date of the Unilateral Administrative Order.

| Parameter | Frequency | Sample Type |
|---|---|---|
| Arsenic (Total) | Twice per week | Composite |
| Cadmium | " | " |
| Copper | " | " |
| Iron | " | " |
| Lead | " | " |
| Mercury | " | " |
| Selenium | Once per month | " |
| Silver | " | " |
| Zinc | Twice per week | " |
| Total Flow, mgd | " | " |
| Hardness | " | " |
| pH, Units | " | " |
| Temperature, $^{o}C$ | " | " |
| Total Suspended Solids | " | " |
| Volatile Suspended Solids | " | " |
| Turbidity | " | " |
| Specific Conductance | " | " |
| Alkalinity | " | " |
| Sulfate | " | " |
| $NO_3/NO_2$-N | Twice per month | composite |
| $NH_3$-N | " | " |
| TKN | " | " |
| Total Phosphorous | " | " |
| Dissolved Ortho-P | " | " |

II. MONITORING, RECORDING AND REPORTING REQUIREMENTS

A. Representative Sampling. Samples taken in compliance with the monitoring requirements established under Part I shall be collected from the effluent stream prior to discharge into the receiving waters. Samples and measurements shall be representative of the volume and nature of the monitored discharge. Sampling shall use the EPA total recoverable method.

B. Monitoring Procedures. Monitoring must be conducted according to test procedures approved under 40 CFR Part 136, unless other test procedures have been specified in this Exhibit.

C. Reporting of Monitoring Results. Effluent monitoring results obtained during the previous month shall be summarized for each month and reported on a Discharge Monitoring Report Form (EPA No. 3320-1) or equivalent approved form, postmarked no later than the 28th day of the month following the completed reporting period. Monitoring data shall also be reported in the Clark Fork Data Management electronic format. Legible copies of these, and all other reports required herein, shall be signed and certified in accordance with the Signatory Requirements (see Part IV), and submitted to the Director, Montana EPA Office and the Director, State Water Quality Bureau at the following addresses (collectively referred to as the Directors):

original to: United States Environmental Protection Agency
Region 8, Montana Office
301 South Park, Drawer 10096
Helena, MT 59626

Attention: D. Scott Brown
Remedial Project Manager

copy to: Montana Department Of Health and Environmental Sciences
Water Quality Bureau
Cogswell Building
Helena, MT 59620

Attention: Fred Shewman

D. Compliance Schedules. Any progress report, compliance report, or noncompliance report on achieving interim and final requirements contained in any Compliance Schedule of this document shall be submitted no later than 14 days following each schedule date.

E. Additional Monitoring. If Respondent monitors any pollutant more frequently than required by this Exhibit, using test procedures approved under 40 CFR 136 or as specified in this permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR. Such increased frequency shall also be indicated.

F. Report Contents. Reports of monitoring information shall include:

1. The date, exact place, and time of sampling or measurements;

2. The initials or name(s) of the individual(s) who performed the sampling or measurements;

3. The date(s) analyses were performed;

4. The time analyses was initiated;

5. The initials or name(s) of individual(s) who performed the analyses;

6. References and written procedures, when available, for the analytical techniques or methods used; and,

7. The results of such analyses, including the bench sheets, instrument readouts, computer disks or tapes, etc., used to determine these results.

G. Retention of Records. Respondent shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, and copies of all reports required by this Exhibit, for a period of at least ten years from the date of the sample, measurement or report. This period may be extended by request of the Directors at any time. Data collected on site, copies of Discharge Monitoring Reports, and a copy of this Exhibit must be maintained on site during the duration of activity at the site.

H. Twenty-four Hour Notice of Noncompliance Reporting.

1. Respondent shall report any noncompliance which may seriously endanger health or the environment as soon as possible, but no later than twenty-four (24) hours from the time the Respondent first became aware of the circumstances. The report shall be made to the EPA, Region 8, Montana Office at 406 449-5414 and the State of Montana at 406 444-6911.

2. The following occurrences of noncompliance shall be reported by telephone to the EPA, Region VIII, Montana Office at 406 449-5414 and the State of Montana at 406 444-2406 by the first workday (8:00 a.m. - 4:30 p.m. Mountain Time) following the day Respondent became aware of the circumstances:

   a. Any unanticipated bypass which exceeds any effluent limitation in this Exhibit; or

   b. Any upset which exceeds any effluent limitation in this Exhibit.

3. Any violation of a maximum daily discharge limitation for any of the pollutants listed in this Exhibit is to be reported within 24 hours.

4. A written submission of II.H.1. and 2. violations shall also be provided within five days of the time that Respondent becomes aware of the circumstances. The written submission shall contain:

   a. A description of the noncompliance and its cause;

   b. The period of noncompliance, including exact dates and times;

   c. The estimated time noncompliance is expected to continue if it has not been corrected; and,

   d. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

5. The EPA Montana Office Director may waive the written report on a case-by-case basis if the oral report has been received within 24 hours by the EPA Montana Office, Helena, Montana, by phone, 449-5414.

6. Reports shall be submitted to the addresses in Part II.C., Reporting of Monitoring Results.

I. Other Noncompliance Reporting. Instances of noncompliance not required to be reported within 24 hours shall be reported at the time that monitoring reports for Part II.C. are submitted. The reports shall contain the information listed in Part II, H, 2 and 4.

J. Inspection and Entry. In additions to the requirements of the Unilateral Administrative Order, Respondent shall allow the Directors, or an authorized representative, including representatives of the State of Montana, upon the presentation of credentials and other documents as may be required by law, to:

1. Enter upon the Respondent's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Exhibit;

3. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Exhibit; and,

4. Sample or monitor at reasonable times, for the purpose of assuring compliance or as otherwise authorized by this Exhibit, any substances or parameters at any location.

K. Other Requirements

EPA and the Montana Water Quality Bureau shall be notified as specified above if Respondent proposes to utilize the Pond 3 discharge in lieu of discharging to Pond 2.

## III. COMPLIANCE RESPONSIBILITIES

A. Duty to Comply. Respondent must comply with all conditions of this Unilateral Administrative Order, including Exhibit 5. Any noncompliance constitutes a violation of the Unilateral Administrative Order and is grounds for enforcement action. Settling Respondent shall give the Director advance notice of any planned changes at the facility or of an activity which may result in noncompliance.

B. Penalties for Violations of Discharge Conditions. Except for Part III.G., Upset Conditions, nothing in this Exhibit shall be construed to relieve Respondent of the civil or criminal penalties for noncompliance.

C. Need to Halt or Reduce Activity not a Defense. It shall not be a defense in an enforcement action that it would have been necessary to halt or reduce the activity in order to maintain compliance with the conditions of the Unilateral Administrative Order, including this Exhibit.

D. Duty to Mitigate. Settling Respondent shall take all reasonable steps to minimize or prevent any discharge in violation of this Exhibit.

E. Proper Operation and Maintenance. Respondent shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used to achieve compliance with the conditions of this Unilateral Administrative Order, including the Exhibit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed only when the operation is necessary to achieve compliance with the conditions of the Unilateral Administrative Order including the Exhibit.

F. Removed Substances. Collected screening, grit, solids, sludges, or other pollutants removed in the course of treatment shall be buried or disposed of in such a manner so as to prevent any pollutant from entering any waters of the state or creating a health hazard.

G. Upset Conditions.

1. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with effluent limitations, if the requirements of paragraph 2. of this section are met. See "Upset" definition at I.A.6.

2. Conditions necessary for a demonstration of upset. To establish the affirmative defense of upset, Respondent shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

   a. An upset occurred and that Respondent can identify the cause(s) of the upset;

   b. The facility was at the time being properly operated;

   c. Respondent submitted notice of the upset as required under Part II.H., Twenty-four Hour Notice of Noncompliance Reporting; and,

   d. Respondent complied with any remedial measures required under Part III.D., Duty to Mitigate.

3. Burden of proof. In any proceeding, the party seeking to establish the occurrence of an upset has the burden of proof.

4. It is the goal of Section III.G. of this Exhibit (Upset Conditions) to reduce to zero the frequency of exceedances of discharge limits due to upset conditions.

H. The five year periodic review process, described in Unilateral Administrative Order, shall begin four (4) years after the effective date of the Unilateral Administrative Order and shall be concluded no later than five (5) years after the effective date of the Unilateral Administrative Order. The five year periodic review process shall involve public comment, as described in applicable EPA guidance and the NCP.

IV. GENERAL REQUIREMENTS

A. Signatory Requirements. All reports or information submitted to the Directors shall be signed and certified.

1. All reports required by this Exhibit shall be signed by a duly authorized representative of Settling Respondent. A person is a duly authorized representative only if:

a. The authorization is made in writing by a person described above and submitted to the Director, and,

b. The authorization specified either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.)

2. Changes to authorization. If an authorization under paragraph IV.A.1. is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of paragraph IV.A.1. must be submitted to the Director prior to or together with any reports, information, or applications to be signed by an authorized representative.

3. Certification. Any person signing a document under this section shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information