

ADMINISTRATIVE RECORD

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION VIII

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FILED  
EPA REGION VIII  
HEARING CLERK

IN THE MATTER OF:  
  
ANACONDA SMELTER SUPERFUND SITE  
OLD WORKS/EAST ANACONDA DEVELOPMENT  
AREA, OPERABLE UNIT NO.  
  
ATLANTIC RICHFIELD COMPANY,  
RESPONDENT.  
  
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.  
CERCLA VIII-94-08

ADMINISTRATIVE ORDER  
FOR REMEDIAL DESIGN/REMEDIAL ACTION

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ATTACHMENTS

Exhibit 1. Record of Decision

Exhibit 2. Remedial Design/Remedial Action Work Plan

## I. INTRODUCTION AND JURISDICTION

1. This Order directs Respondent to complete a remedial design for the remedy described in the Record of Decision for the Anaconda Smelter Superfund Site, Old Works/East Anaconda Development Area Operable Unit (OW/EADA OU) and the Mill Creek OU, dated March 8, 1994, and to implement the design by performing a remedial action. This Order is issued to Respondent by the United States Environmental Protection Agency (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, 42 U.S.C. § 9606(a), as amended (CERCLA). 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 VIII.

## II. FINDINGS OF FACT

2. The Respondent, the Atlantic Richfield Company, 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.

- a. The Respondent is now, and has been since on or about 1977, the owner and operator of the "facility," as defined below.
- b. 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 the Anaconda Copper Mining Company and/or its subsidiaries and related corporations or businesses.

3. The OW/EADA OU, encompassing some 1,300 acres, is located adjacent to and immediately northeast of the town of Anaconda, Montana. The OW/EADA OU contains large volumes of hazardous substances resulting mainly from smelter operations at the Upper and Lower Works, and the Washoe Reduction Works, by Respondent and predecessors-in-interest to Respondent.

4. The Mill Creek OU, encompassing some 140 acres, located about 2 miles southeast of the OW/EADA OU, is contaminated with hazardous substances, resulting mainly from operations at the Washoe Reduction Works, by Respondent and predecessors-in-interest to Respondent.

5. Pursuant to section 105 of CERCLA, 42 U.S.C. § 9605, EPA placed the Anaconda Smelter Superfund Site, including the OW/EADA and Mill Creek OUs, on the National Priorities List set forth at 40 C.F.R. Part 300, Appendix B, by publication in the Federal Register on September 8, 1983, 48 Fed. Reg. 40658.

6. EPA has divided the Site into operable units for response. This Order addresses the OW/EADA and Mill Creek OUs.

7. From about September 1992 to about September 1993, ARCO, with EPA oversight, undertook a Remedial Investigation and Feasibility Study (RI/FS) for the OW/EADA and Mill Creek OUs, pursuant to CERCLA and the National Oil and Hazardous Substances Pollution Contingency Plan, 40 C.F.R. Part 300 (NCP).

8. In accordance with section 117 of CERCLA, 42 U.S.C. § 9617, EPA published notice of the completion of the FS and of the proposed plan for remedial action on September 23, 1993 and provided an opportunity for public comment on the proposed remedial action.

9. EPA's remedial action decision for the OW/EADA and Mill Creek OUs is embodied in a Record of Decision (ROD), executed on March 8, 1994 with concurrence by the State of Montana, Exhibit 1. The ROD is supported by an administrative record that contains the documents and information upon which EPA based the selection of the response action.

10. Studies performed under the Remedial Investigation/Feasibility Study for the OW/EADA and Mill Creek OUs have documented the presence, release, and threat of release of arsenic, cadmium, lead, zinc, and copper at the OW/EADA OU and arsenic at the Mill Creek OU.

11. Large areas of surface contamination located within the OW/EADA and Mill Creek OUs, composed of contaminated soils and/or tailings and other debris, may subject humans and wildlife to risks from exposure. In particular, current and future recreational users of and workers at or near the OW/EADA and Mill Creek OUs are subject to exposure to waste materials, soils, and dust, containing arsenic, cadmium, copper, lead, and zinc via inhalation and ingestion pathways. In addition, terrestrial organisms and plant communities are subjected to exposure which may cause adverse affects. Run-off from copper and zinc in soils and tailings may cause damage to the recreational fishery in Warm Springs Creek. The area is also a source of releases or threats of releases of hazardous substances, pollutants, or contaminants into groundwater beneath and surrounding the OW/EADA OU. Additional information on the human health and environmental risks at the OW/EADA and Mill Creek OUs is presented in the Baseline Risk Assessment for the OW/EADA OU which is Appendix M to the RI/FS.

12. The ROD for the OW/EADA and Mill Creek OUs requires the following summarized activities. This summary amplifies the summary given in the ROD, based on preliminary design work done to date:

- a. Construction of engineered covers over waste materials in recreational and potential commercial/industrial areas exceeding arsenic levels of 1,000 parts per million (ppm);
- b. Treatment of soils exceeding arsenic levels of 1,000 ppm in recreational and potential commercial/industrial areas using innovative revegetation treatment techniques;
- c. Covering or treatment of soils exceeding arsenic levels of 500 ppm in current commercial/industrial areas;
- d. Arranging for future remediation of potential residential or commercial/industrial areas, at the time of development, to the action levels set through the Anaconda-Deer Lodge County (ADL) Development Permit System (DPS), as approved by EPA;
- e. Construction of surface controls to manage surface water runoff from Stuckey Ridge, Smelter Hill, and throughout the Site to minimize discharge to Warm Springs Creek;
- f. Upgrading or repairing of levees adjacent to Warm Springs Creek to contain the 100-year peak flood event and prevent erosion of waste materials into Warm Springs Creek;
- g. Replacement of bridges or culverts, as necessary, to safely pass the 100-year peak flood event;
- h. Implementation of institutional controls to protect the above engineering controls and manage future land and water use;
- i. Implementation of long term monitoring; and
- j. Preservation of historic features in the Old Works Historic District, to the extent practicable.

13. Response actions taken to date at the Site include the permanent relocation of residents at Mill Creek pursuant to the Mill Creek Relocation ROD, issued in October 1987; the stabilization of the Red Sands adjacent to Warm Springs Creek, the repair of breaks in various levees along Warm Springs Creek, and the installation of fencing to limit access to certain

portions of what is now the OW/EADA OU, all pursuant to the Old Works EE/CA, approved July 1991; and the removal of waste materials in the Arbiter ponds and bunkers pursuant to the Accelerated Removals Expedited Response action in 1992.

### III. CONCLUSIONS OF LAW AND DETERMINATIONS

14. 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 is a "facility" 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 migration 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(21);
- 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

15. EPA has notified the State of Montana (State), 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, and will continue to provide for State involvement in design and implementation of the remedy, 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

16. Respondent is hereby ordered to comply with all requirements of this Order, including but not limited to, all attachments to this Order and all documents incorporated by reference into this Order.

#### VI. DEFINITIONS

17. 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 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.

"**Dedicated Development**" shall mean any long term development constructed by the Respondent at the Site, which is permitted, but not required, by the ROD, Exhibit 1.

"**Deliverable**" means any written product, including but not limited to, plans, reports, memoranda, data, and other documents that Respondent 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 Plan developed by Respondent pursuant to this Order and approved by EPA.

"**Order**" means this Order, the exhibits attached to this Order, the EPA-approved work plan, 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 Record of Decision or the RD/RAWP that the remedial action and other Work performed under this Order must attain and maintain.

**"Record of Decision"** or **"ROD"** means the EPA Record of Decision for the OW/EADA OU of the Anaconda Smelter Superfund Site, signed on March 8, 1994 by the Regional Administrator, EPA Region VIII, and all attachments thereto, attached hereto as Exhibit 1, and incorporated herein by reference.

**"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 work plan approved by EPA, including any additional activities required under Sections X, XI, XII, XIII, and XIV of this Order.

**"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 the work plan.

**"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, also referred to herein as "Respondent" or "ARCO."

**"Remedial Design/Remedial Action Work Plan"** or **"RD/RAWP"** means the statement of work attached hereto as Exhibit 2 and incorporated herein by reference.

**"Site"** means the OW/EADA and Mill Creek OUs of the Anaconda Smelter Superfund Site, encompassing approximately 1440 acres, located north of and adjacent to Anaconda, Deer Lodge County, Montana, as described in the ROD, Exhibit 1, 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.



"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

18. ARCO shall provide, not later than 36 hours after the effective date of this Order, written notice to the EPA Remedial Project Manager and the EPA Enforcement Section Chief stating whether it will unconditionally and unequivocally comply with this Order. If Respondent does not unconditionally and 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

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

20. 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 interest in Respondent's assets, property rights, 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 5 days after the effective date of this Order or on the date such services are retained, whichever date occurs later. Respondent shall also provide a copy of this Order to each person representing Respondent with respect to the Work and 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.

21. Within 5 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 14 days after the effective date of this Order, send notice of such recording and indexing to EPA.

22. Not later than 30 days prior to any transfer of any real 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 effective date of the transfer.

#### IX. WORK TO BE PERFORMED

23. Respondent shall prepare, implement, perform, and complete all actions required by this Order, including all actions required under approved plans, in accordance with the standards, criteria, specifications, requirements, and schedule set forth herein and in the RD/RAWP, Exhibit 2. 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.

24. 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.

25. All Work shall be consistent with the ROD and the Performance Standards set forth in the ROD and the RD/RAWP, Exhibit 2, including all applicable or relevant and appropriate requirements (ARARs). Notwithstanding any action by EPA, Respondent remains fully responsible for achievement of the Performance Standards. Nothing in this Order, nor in EPA's approval of any document prepared by EPA 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 Work to achieve Performance Standards.

26. 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.

27. All Work shall be under the direction and supervision of a qualified project manager. Within 7 days after the effective date of this Order, Respondent shall notify EPA in writing of the name, address, telephone number, and qualifications of the project manager and the identity and qualifications of the 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 project manager, 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.

28. EPA will review Respondent's selection of and changes in project manager, 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 project manager, 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 its selection(s) within 14 days of receipt of EPA's written notice.

29. Respondent shall, no later than 3 days prior to any off-Site 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 the appropriate state environmental official in the receiving state and to EPA. However, the notification of shipments shall not apply to any off-Site 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.

30. 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.

31. In the event that Respondent seeks to construct a Dedicated Development, the design and construction of such development shall be implemented only with EPA and State review, approval, and oversight, and shall be consistent with the remedy.

#### **X. FAILURE TO ATTAIN PERFORMANCE STANDARDS**

32. In the event that EPA determines that response activities in addition to those set forth in the RD/RAWP, Exhibit 2, are necessary to attain Performance Standards, EPA may notify Respondent that additional response actions are necessary.

33. 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**

34. 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.

## **XII. ADDITIONAL RESPONSE ACTIONS**

35. EPA may determine that Work, in addition to that identified in this Order, may be necessary to protect human health and the environment. 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.

36. 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 work 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 work plan by EPA, Respondent shall implement the work plan according to the standards, specifications, and schedule in this Order and the approved work plan. 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.

## **XIII. ENDANGERMENT AND EMERGENCY RESPONSE**

37. 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 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. If neither the EPA Remedial Project Manager nor the Alternate Project Manager are available, Respondent shall notify the EPA Emergency Response Branch, EPA Region VIII. 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 not inconsistent with the NCP. Respondent shall pay the response costs in the manner described in Section XXII of this Order.

38. 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.

#### XIV. EPA REVIEW OF DELIVERABLES

39. 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) disapprove the submission and direct Respondent to re-submit the document after incorporating EPA's comments, or (d) 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.

40. 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.

41. Upon receipt of a notice of disapproval or a request for a modification, Respondent shall, within 7 days or such time as specified by EPA in its notice of disapproval or request for modification, correct the deficiencies 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.

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

#### XV. REPORTING REQUIREMENTS

43. Respondent shall submit to EPA and the State 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 month 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.

44. During construction, Respondent shall each day record information 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. Information recorded on a given day shall be available to EPA for inspection the following day. The daily records shall be compiled and delivered to EPA and the State monthly with the progress reports required under the preceding Paragraph.

45. Respondent shall prepare and submit to EPA and the State 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 appropriate criteria, and whether any exceedances 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 annually on or before the 10th day of January, commencing January 1997 and continuing until EPA notifies Respondent that the frequency of reporting may be reduced.

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

46. 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.

47. 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.

48. Respondent shall notify EPA 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 its authorized representatives of any samples collected by Respondent with regard to the Site or pursuant to the implementation of this Order. In addition, EPA and/or its



authorized representatives shall have the right to take any other samples that EPA deems necessary.

**XVII. COMPLIANCE WITH APPLICABLE LAWS**

49. All Work shall be performed in accordance with the requirements of all federal and State laws and regulations. Except 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.

50. This Order is not, and shall not be construed to be, a permit issued pursuant to any federal or State statute or regulation.

51. All materials removed from the Site 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 off-site policy entitled "Procedures for Planning and Implementing Off-Site Response Actions," 58 Fed. Reg. 49200-49218, adding 40 C.F.R. 300.440; and with all other applicable federal, State, and local requirements.

**XVIII. REMEDIAL PROJECT MANAGER AND ENFORCEMENT SECTION CHIEF**

52. The EPA Remedial Project Manager is:  
Charles Coleman, 8MO  
EPA Region VIII, Montana Office  
301 South Park  
Drawer 10096  
Helena, Montana 59624  
(406) 449-5720

The 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:  
Andrew J. Lensink, 8RC  
Assistant Regional Counsel  
EPA Region VIII  
999 18th Street, Suite 500  
Denver, Colorado 80202  
(303) 294-7574

EPA may change its Remedial Project Manager or Alternate Project Manager at any time and will inform Respondent of such changes.

53. 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.

54. All communications, whether written or oral, from Respondent to EPA shall be directed from Respondents' project manager to the EPA Remedial Project Manager or Alternate Project Manager. Respondent shall submit to EPA five copies 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.

#### **XIX. ACCESS AND DATA/DOCUMENT AVAILABILITY**

55. Respondent shall allow EPA and its authorized representatives 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 and its authorized representatives to enter the Site, 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.

56. If the Site, any off-Site area that is to be used for access, 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 and its authorized representatives and Respondent and its contractors and shall specify that Respondent is not EPA's representative 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.

57. 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, 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.

58. Respondent shall provide to EPA, upon request, copies of all documents and information within its possession and/or control or that of its contractors 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 for purposes of investigation, information gathering, or testimony, its employees, agents, or representatives with knowledge of relevant facts concerning the performance of the Work.

59. 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.

## **XX. RECORD PRESERVATION**

60. 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 the United States at least 90 days prior to the destruction of any such records or documents, and upon request by the United States, Respondent shall deliver any such records or documents to EPA at no cost to EPA.

## **XXI. ASSURANCE OF ABILITY TO COMPLETE WORK**

61. 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 EPA approval of the work plan, 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 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 the estimate of cost for the RD and RA contained in the ROD. If Respondent seeks to demonstrate 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.

62. 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 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. Respondent shall ensure that such insurance or indemnification is maintained for the duration of the Work required by this Order.

## **XXII. REIMBURSEMENT OF RESPONSE COSTS**

63. 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 of such costs. The accounting shall consist of a cost summary. Within 30 days of receipt of each EPA accounting, 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.

64. 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-Old Works/East Anaconda Development Area OU, Anaconda Smelter Superfund Site," and include the payor's name and address, the Site identification number 18, 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**

65. The United States, by 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.

66. 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).

#### XXIV. ENFORCEMENT AND RESERVATIONS

67. 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).

68. 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.

69. Nothing in this Order shall preclude EPA from taking any additional enforcement actions, 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.

70. 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.

71. 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 at least equal to, and not more than three times the amount of any costs incurred by the Fund as a result of such failure to take proper action.

72. Nothing in this Order shall constitute or be construed as a release from any claim, cause of action or demand in law or

equity against any person for any liability it may have arising out of or relating in any way to the Site.

73. 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**

74. This Order shall be effective immediately upon signing. All times for performance of ordered activities shall be calculated from this effective date.

**XXVI. OPPORTUNITY TO CONFER**

75. Respondent may, within 24 hours after the date this Order is signed, 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. Such conference shall not delay the performance of any Work.

76. Requests for a conference must be by telephone followed by written confirmation mailed that day to:

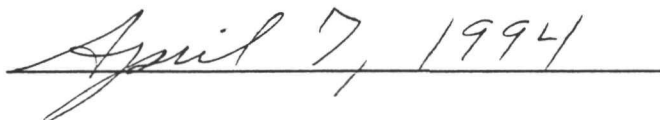
Andrew J. Lensink (8RC)  
EPA Region VIII  
999 18th Street, Suite 500  
Denver, Colorado 80202-2405  
(303) 294-7574

IT IS SO ORDERED

BY:

  
Robert L. Duprey, Director  
Hazardous Waste Management Division  
U.S. Environmental Protection Agency

DATE:

  
April 7, 1994

**REMEDIAL DESIGN/REMEDIAL ACTION WORK PLAN  
ANACONDA SMELTER NPL SITE  
OLD WORKS/EAST ANACONDA DEVELOPMENT AREA OPERABLE UNIT**

**1.0 INTRODUCTION**

**1.1 Purpose and Scope**

The purpose of this Remedial Design/Remedial Action Work Plan (RD/RAWP) is to outline the approach and schedule for completing the final design, including drawings and specifications, of the major elements of work to be implemented under the Remedial Action (RA) at the Old Works/East Anaconda Development Area (OW/EADA) and Mill Creek Operable Units (OUs). In addition, this Work Plan provides the approach, methods and schedule for implementing the RA. The RD/RAWP is an extension of the ongoing design analyses between EPA, MDHES and ARCO. Design activities are currently being conducted in accordance with a Draft OW/EADA Design Work Plan which was based upon the OW/EADA Proposed Plan. Appendix A, attached hereto and by this reference incorporated herein, provides the section of the Draft Work Plan describing the design tasks.

The purpose of the Work described in this RD/RAWP is to implement the remedy for the site (described in Section 1.2 below) in accordance with the OW/EADA Record of Decision (ROD). The RD/RAWP identifies the Performance Standards, attached hereto as Appendix B, and by this reference incorporated herein which shall be met during and upon completion of the RA. This Work Plan sets forth the schedule and tasks necessary to complete the final plans, construction drawings, technical specifications, and other design plans or reports, and identify the methods and procedures necessary to meet the performance standards established in this RD/RAWP through the implementation of the RA.

**1.2 Description of the OW/EADA Selected Remedy**

The OW/EADA OU was divided into six subareas based on the similarity of waste characterization and present or future land uses (see Figure 1). These subareas include:

- **Subarea 1** - Old Works structural areas;
- **Subarea 2** - Heap Roast Slag, Miscellaneous Waste Piles, and a portion of the Warm Springs Creek floodplain;



- **Subarea 3** - Extension of the Warm Springs Creek floodplain and the industrial park;
- **Subarea 4** - Red Sands, Arbiter Plant, and the Anaconda Industrial Park;
- **Subarea 5** - East Anaconda Yard and Benny Goodman Park; and
- **Subarea 6** - Drag strip.

In addition, since the anticipated land uses, site characteristics, and contaminants of concern are similar to the OW/EADA OU, the Mill Creek Operable Unit was included in the selected remedy for the OW/EADA OU.

The principal contaminant of concern at the OW/EADA and Mill Creek OUs is arsenic, which is contained in the large quantities of milling and smelting wastes and in surficial soils from past aerial emissions. The objective of the selected remedy as presented in the ROD is to achieve the following:

- Reduction of risk to human health through:
  - Reduction of surface soil arsenic concentrations to acceptable levels, and
  - Prevention of direct human contact with waste materials exceeding acceptable levels.
- Reduction of risk to the environment through:
  - Minimization of infiltration and deep percolation of metal-laden pore water to ground water, and
  - Minimization of erosion and metal loading via transport of waste and contaminated soil to Warm Springs Creek.
- Preservation, to the extent practical, of historic features at the site.

The ROD establishes action levels for arsenic at the OW/EADA OU and identifies the major components of the remedy which include requirements to:

- Construct engineered covers over waste materials in recreational and potential commercial/industrial areas exceeding arsenic levels of 1,000 parts per million (ppm);

- Treat soils exceeding arsenic levels of 1,000 ppm in recreational and potential commercial/industrial areas using innovative revegetation treatment techniques;
- Cover or treat soils exceeding arsenic levels of 500 ppm in current commercial/industrial areas;
- Provide for future remediation of potential residential or commercial/industrial areas, at the time of development, to the appropriate arsenic action levels through the Anaconda-Deer Lodge County (ADL) Development Permit System (DPS);
- Construct surface controls to manage surface water runoff from Stuckey Ridge, Smelter Hill, and throughout the site to minimize discharge to Warm Springs Creek;
- Upgrade or repair levees adjacent to Warm Springs Creek to contain the 100-year peak flood event and prevent erosion of waste materials into Warm Springs Creek;
- Replace bridges or culverts, as necessary, to safely pass the 100-year peak flood event;
- Implement institutional controls to protect the above engineering controls and manage future land and water use;
- Implement long-term monitoring; and
- Preserve, to the extent practicable, historic features in the Old Works Historic District.

The ROD for the OW/EADA OU was executed on March 8, 1994. The remedy outlined in the ROD represents the final remedial action for contaminated soil and waste materials within the OW/EADA and Mill Creek OUs. The purpose of the remedy presented in the ROD is to prevent human and environmental exposure, by inhalation and ingestion, to contaminated soil and smelter waste materials. Remedial actions for other media (e.g., surface and ground water) and areas specifically excluded (e.g., black slag pile) are deferred to other OUs. However, the Remedial Action to be undertaken at the OW/EADA OU is intended to be consistent with the remedial action objectives and goals identified for the Anaconda Regional Water and Waste (ARWW) OU and other investigations.

## 2.0 PROJECT MANAGEMENT AND COMMUNICATIONS

The purpose of this section is to provide guidance to efficiently manage the RD/RA, including defining lines of authority, communication, project coordination, project meetings

and submittal requirements. The roles and responsibilities of the organizations involved in the RD/RA are described below.

## 2.1 Lines of Authority, Communication and Coordination

The organizations that will be involved in the RD/RA include the following:

1. EPA Region VIII;
2. Montana Department of Health and Environmental Sciences (MDHES);
3. Atlantic Richfield Company (ARCO);
4. Owners (ADL and private landowners);
5. Golf Course Authority (GCA);
6. Design Engineer (ESA);
7. Golf Course Designer (Golden Bear);
8. Construction Manager (ARCO);
9. Quality Assurance/Quality Control (QA/QC) Oversight Engineer (ESA); and
10. Construction Contractor.

The EPA will have the authority for final approval of the RD based on their review of final plans, drawings, specifications and other deliverables for compliance with State and Federal requirements. ARCO shall provide the design deliverables to the agencies as outlined in the approach and schedule of this RD/RAWP.

ESA has been retained by ARCO as the Design Engineer to perform the RD work and to provide technical support during the RD/RA activities. ESA's primary responsibility is to develop comprehensive plans for the construction, operation and maintenance (O&M) of the selected remedy that will fulfill the needs of ARCO and meet the requirements of the ROD.

Golden Bear has been retained by ARCO to design the proposed golf course and to provide technical support during construction activities as they relate to the golf course.

Property owners and the Golf Course Authority will be consulted during the design process as it effects areas of their concern and will be notified thereafter of any designs changes.

The EPA will also have the authority for final approval of the RA based on their observations and review of the construction QA/QC results. ARCO shall periodically provide results to the agencies to keep them informed on the RA's progress. The agencies will also be responsible for reviewing project schedules and submittals provided to them by ARCO. The EPA will address all communications to ARCO or to the designated ARCO project representative.

ARCO, or their project representative, shall be responsible for providing construction management and verifying that the RA complies with the performance standards set forth in the RD/RAWP. ARCO shall manage the project to focus on attaining the objectives listed in Section 1.0. ARCO, MDHES and EPA will coordinate to handle all project-related communications with the federal, state and local agencies, the public and all other parties. RA activities shall be coordinated by ARCO to adhere to the milestone dates in the RA schedule.

ESA has also been retained as the QA/QC Oversight Engineer and shall provide ARCO with technical assistance for the project by performing QA/QC oversight of the contractor's work. The QA/QC Oversight Engineer shall evaluate the contractor's compliance with this plan, and any applicable site performance standards. Any deviations from this work plan shall require the approval of EPA, MDHES and ARCO.

The Contractor(s) shall be responsible for performing designated activities associated with the RA in accordance with this plan and all applicable documents. The Contractor(s) shall be responsible to communicate directly with ARCO or their designated project representative on all issues and concerns. The Contractor(s) shall be responsible for scheduling the project activities with its subcontractors to complete the projects by the milestone dates designated by the construction schedule. The Contractor(s) shall designate a contact person as the Contractor's Site Representative with authority to make field decisions and direct work.

## **2.2 Project Meetings**

A preconstruction conference including representatives from ARCO, ADL, MDHES, EPA, the QA/QC Oversight Engineer, the Design Engineer (as necessary) and the Contractor shall be scheduled before initiating any work at the site. The purpose of the meeting will be to assure that all parties understand their respective responsibilities and the procedures that shall be used to assure efficient completion of the work. The meeting will discuss scheduling (including critical milestone dates), submittal procedures, recordkeeping, use of premises, site security, health and safety procedures, and material and equipment delivery and storage procedures.

Progress meetings including representatives from ARCO, EPA, MDHES, ADL, the QA/QC Oversight Engineer, Design Engineer (as necessary) and the Contractor's Site Representative shall be held weekly at the jobsite. Progress meeting agenda will include at a minimum the status of work items initiated to date, scheduled items for the following week, problems encountered and proposed solutions, and any health and safety or historical issues that have arisen in the past week or are pertinent to the work scheduled for the following week.

### 3.0 REMEDIAL DESIGN

This section of the RD/RAWP describes remediation requirements identified in the ROD, the remedial design strategy, and the approach for completing remaining RD tasks, including the Final Design Report. The approach and schedule for accomplishing these tasks is provided below.

#### 3.1 Remediation Requirements

The remediation requirements for soils and waste material is to reduce surface arsenic concentrations to below action levels for existing or designated future land use. As noted previously in this document, final remediation requirements for surface and ground water at the OW/EADA OU are not within the scope of this action, but rather will be determined under the ARWW OU. However, remediation goals for this project do include (1) minimizing infiltration and deep percolation of soil moisture through contaminated waste material which may cause degradation of existing ground water quality in the shallow alluvial aquifer; and (2) minimizing erosion and transport of contaminated soil and waste material which may cause degradation of existing surface water quality of Warm Springs Creek.

The specific remediation requirements for the Selected Remedy are to:

- **Reduce arsenic concentrations at the surface to below 1,000 ppm using a combination of revegetation treatment techniques and/or engineered covers.**
  - Revegetation techniques, which may include deep tilling, lime additions and soil amendments, shall reduce surface soil arsenic concentrations to below 1,000 ppm and establish a diverse, effective, and permanent vegetative cover.
  - Engineered covers shall be designed to provide an effective and permanent barrier to waste materials. Soil covers shall be stabilized with revegetation that provides a diverse, effective, and permanent cover.

- Waste sources associated with structures in Subarea 1 are excluded in order to preserve the historic integrity at the site.

• **Reduce arsenic concentrations at the surface to below 500 ppm in current industrial or commercial areas using a combination of revegetation techniques and/or engineered covers.**

- Revegetation techniques, which may include deep tilling, lime additions, and soil amendments, shall reduce surface soil arsenic concentrations to below 500 ppm and establish a diverse, effective, and permanent vegetative cover.
- Engineered covers shall be designed to provide an effective and permanent barrier to waste materials. Soil covers shall be stabilized with revegetation that provides a diverse, effective, and permanent cover.

• **Minimize any discharge, seepage, infiltration, or flow from waste sources (i.e., Miscellaneous Waste Piles, Heap Roast Slag, Jig Tailings, and Red Sands) to prevent the degradation of existing water quality by consolidating and grading wastes, surface controls and using a combination of vegetative and/or engineered covers.**

- Consolidation and grading shall reduce areas of infiltration and promote drainage off of or away from waste materials while minimizing sedimentation, erosion, and instability of waste materials.
- Surface controls shall be designed using Best Management Practices, such as described in *Montana Sediment and Erosion Control Manual*, MDHES, May 1993 (MDHES 1993), to control storm water runoff from the site to Warm Springs Creek.
- Vegetative covers shall be designed to stabilize soil covers and reduce infiltration through evapotranspiration.

• **Minimize washout of waste materials from the Warm Springs Creek 100-year peak flood event through the upgrade or repair of levees adjacent to Warm Springs Creek and the replacement of existing culverts as necessary to safely pass the 100-year flood event.**

- Stream channel controls shall be designed and constructed to minimize potential erosion from a flood of 100-year frequency as well as safely withstand up to a flood of 100-year frequency.
- Stream channel controls shall be designed to not increase the elevation of the 100-year frequency flood, increase erosion upstream, downstream, or across stream.

**Institutional controls shall be developed to restrict and manage future land and ground water use.**

- Assure that future land and water use at the site is consistent with EPA's determination of the health and environmental risks posed by contaminants left on site;
- Provide for the preservation and maintenance of Superfund remedial structures on the site, including but not limited to caps, berms, waste repositories, and vegetated areas;
- Require that future development at the site employ construction practices that are consistent with the protection of public health and the environment, as determined by Superfund remedial actions;
- As development occurs at the site, implement the remediation of soil arsenic contamination to levels appropriate for the intended use, as determined by Superfund remedial actions; and
- Provide for implementation of other laws applicable to development, such as subdivision and floodplain requirements.

**Preserve, to the extent practicable, historic features in the Old Works Historic District and/or mitigate loss of historic features pursuant to the approved historic resource mitigation agreements.**

- Design and construction shall avoid, to the extent practicable, historic features or design to maintain historic integrity.
- An Historic Trail System shall be designed and constructed to mitigate the unavoidable loss of or impact to historic features.

## 3.2 Design Strategy

### 3.2.1 Design Strategy for Waste Sources

The RD/RA will address all remaining waste sources within the site, including the following:

- Red Sands
- Floodplain Wastes (Jig Tailings)
- Heap Roast Slag
- Miscellaneous Waste Piles (including Waste Piles 1-8)
- Upper and Lower Works Demolition Debris
- Flue Debris
- Railroad Beds
- Mixed Wastes

Engineered covers and/or revegetation treatment techniques will be used to reduce surface arsenic concentrations to below the recreational action level of 1,000 ppm in current and potential recreational use areas and potential commercial/industrial use areas. Wastes generally exceeding 1,000 ppm arsenic include the Red Sands, Jig Tailings, Miscellaneous Waste Piles, Heap Roast Slag, Mixed Wastes, and Railroad Beds.

An engineered cover, generally soil, will be used to prevent direct human contact with waste sources in areas where revegetation treatment techniques alone will not reduce arsenic concentrations to below the recreational action level (1,000 ppm). Revegetation treatment techniques such as deep tilling, lime additions and soil amendments may be used if proven effective to reduce arsenic concentrations to below 1,000 ppm, stabilize waste material, and promote a permanent vegetative cover. Wastes will be consolidated and graded as necessary to reduce infiltration and control runoff (minimize erosion).

Portions of the Red Sands and Heap Roast Slag will remain uncovered to preserve historic integrity at the site. Also, wastes associated with historic structures in Subarea 1 will be left in place and uncovered because of their historic nature and inaccessibility and limited use of the area. Institutional controls, discussed below, will be used when wastes are left uncovered to minimize human contact by restricting access and regulating land use at the site. Drainage controls will be used to minimize runoff in Subarea 1.

All current commercial/industrial areas will be remediated to the 500 ppm arsenic action level. Future remediation of arsenic contamination to the 500 ppm level in potential commercial/industrial use areas will be implemented through the ADL DPS (see institutional controls below) at the time



development occurs, except as otherwise determined by EPA, MDHES, in consultation with the affected landowner.

### **3.2.2 Design Strategy for Contaminated Soils**

Revegetation treatment techniques will be used to reduce arsenic concentrations in contaminated soils exceeding 1,000 ppm in current and potential recreational areas. Revegetation treatment techniques will also be used, as appropriate, in potential commercial/industrial areas, including Mill Creek. Revegetation treatment techniques, such as deep tilling with lime and soil amendments, will be used to reduce surface concentrations to below the recreational action level of 1,000 ppm arsenic, stabilize contaminants, and create a suitable growth medium for a permanent vegetative cover.

Revegetation treatment techniques and/or engineered covers will be used to reduce arsenic concentrations in contaminated soils exceeding 500 ppm in current commercial/industrial areas. Final remediation of arsenic contamination in commercial/industrial areas to the action level of 500 ppm will be implemented through the ADL DPS (see institutional controls below) at the time development occurs, except as otherwise determined by EPA, MDHES, in consultation with the affected landowner.

### **3.2.3 Design Strategy for Surface and Erosion Controls**

Surface controls will be implemented to manage surface water runoff from Stuckey Ridge (drainage through Old Works areas), Smelter Hill (drainage through East Anaconda Yard area), and within the site (drainage from Heap Roast Slag, Red Sands and other waste sources). Surface controls will be implemented in conjunction with site grading and revegetation to prevent contaminated runoff from degrading the existing water quality of Warm Springs Creek and minimize the migration of contaminated soils and/or metal-laden pore water. Surface controls include three primary components (erosion control, drainage control, and dust control):

- Erosion control will consist of erosion protection (e.g., riprap, lined ditches, and vegetation), waste consolidation or isolation, sedimentation containment (e.g., check dams, basins), and runoff management (e.g., runoff routing);
- Drainage controls will be implemented to control storm water runoff, minimize water ponding to reduce infiltration, and control sediment transport. In addition to the erosion controls above, existing and man-made drainage systems for Stuckey Ridge and the East Yard Area will be upgraded as necessary to safely

route the appropriate design storm event. Open pits and depressions that are subject to water ponding will be backfilled and/or drainage routed away; and

- Dust control in disturbed or barren areas will be addressed through the use of vegetation and other dust suppression techniques as necessary.

The Warm Springs Creek flood levees will be replaced, upgraded, or repaired as necessary to safely route the 100-year peak flood event. Contaminated material susceptible to erosion will be covered or moved where necessary. This work will also include replacement, upgrade, or repair of the existing Landfill Road bridge and culverts. The Warm Springs Creek stream channel controls will be implemented to prevent the washout of waste material at the site.

### 3.2.4 Design Strategy for Institutional Controls

A number of institutional controls will be used in conjunction with the above engineering controls, primarily public land use and ground water controls, controls through private land ownership, dedicated developments, and restricted access.

ADL has adopted a land use Master Plan and the DPS to control future actions at the site including the drilling of wells. Any proposed new development activity or land use anywhere on the site, such as drilling wells, excavation, or new construction, will be regulated by the County under the DPS, irrespective of land ownership. The DPS will:

- Assure that future land and water use at the site is consistent with EPA's determination of the health and environmental risks posed by contaminants left on site;
- Provide for the preservation and maintenance of Superfund remedial structures on the site, including but not limited to caps, berms, waste repositories and vegetated areas;
- Require that future development at the site employ construction practices that are consistent with the protection of public health and the environment, as determined by Superfund remedial actions;
- As development occurs at the site, implement the remediation of soil arsenic contamination to levels appropriate for the intended use, as determined by Superfund remedial actions; and

Provide for implementation of other laws applicable to development, such as subdivision and floodplain requirements.

Institutional controls will also be imposed by means of deed restriction within the site. Deed restrictions, covenants, and/or easements will be implemented to limit future uses by any party to those consistent with the Selected Remedy. In addition to imposing requirements similar to those in the DPS, deed restrictions shall provide for access for remedial purposes to ARCO, EPA, and MDHES. Subsequent conveyances of the property shall impose the same deed restrictions.

Temporary ground water use restrictions will be imposed to prevent its use for drinking purposes. Other uses will be granted only by EPA and MDHES if deemed protective. Ground and surface water restrictions promulgated pursuant to the OW/EADA remedial action will be subject to revision based upon the EPA ROD for the ARWW OU. Additional institutional controls, such as establishment of State controlled ground water areas, may be imposed at that time.

Dedicated developments may also be used to ensure that land and water development is consistent with the OW/EADA remedy. Such developments may include a golf course. To ensure that dedicated developments do not interfere with Superfund remedial actions at the site, design approval shall be obtained from EPA and MDHES. Other developments will be regulated through the DPS.

### **3.2.5 Design Strategy for Historic Preservation**

The Regional Historic Preservation Plan (RHPP), developed by a variety of parties, including EPA, MDHES, the State Historical Preservation Officer, ARCO, and local historic groups, has identified and designated uses for certain cultural historic resources within the site. These resources include the remains from the Upper and Lower Works, the Interstate Lumber buildings, Red Sands, and Heap Roast Slag. Consistent with the RHPP, the Selected Remedy will provide for the protection of certain resources to the maximum extent possible and mitigate the loss or impact to others.

Foundations and remains in the Upper and Lower Works along with certain waste piles will be avoided where practicable, as well as the Interstate Lumber buildings. However, the majority of the Red Sands and Heap Roast Slag will be consolidated, graded, and covered. A portion of these features will remain uncovered in order to preserve the historic integrity of the site.

To mitigate the loss of some historic features, including impacts to the Red Sands and Heap Roast Slag, a historic

interpretive trail will be constructed on the site to provide controlled access to remaining historic features, as well as interpretive signs explaining the significance of these features to the mining and smelting history of the area. Access will be restricted to covered trails through the area. Access to other areas, including areas not fully remediated, will be restricted through the use of fencing, barriers, security systems, or other means.

### **3.3 Remedial Design Tasks**

Initial Remedial Design tasks, Appendix A, were previously identified by EPA for inclusion into a Draft Design Work Plan in December 1993. The OW/EADA RD has been proceeding with a draft design package recently submitted to EPA and MDHES. With the exception of certain design tasks for contaminated soils, major components of the RD have been or are nearing completion. In addition, EPA, MDHES, ADL and ARCO have been proceeding with the development of an institutional controls package through the development of the Real Property Conveyance Document between ARCO, ADL and Anaconda's Old Works Golf Course Authority and the Prospective Purchaser Agreement between EPA, MDHES and ADL.

The following Remedial Design tasks identify remaining design activities necessary to complete the design for contaminated soils and preparation of the final design package for all work elements.

#### **3.3.1 Contaminated Soils**

Design activities for contaminated soils have been and will continue to be conducted in conjunction with the Anaconda Revegetation Treatability Study (ARTS). ARTS is expected to provide data and information which will be necessary to complete final designs for the remediation of contaminated soils. ARTS is expected to continue for the next couple years. Also, because the anticipated amount of required revegetation would take several years to complete at the OW/EADA OU, both design and implementation will also be phased over the next couple of years. A revegetation RD/RA program shall be established to effectively coordinate ARTS and RD/RA activities necessary to implement revegetative treatment techniques in a timely manner.

The revegetation RD/RA program shall include the following tasks:

1. Identify specific areas which contain soils with arsenic levels exceeding the established action levels for a designated land use. Areas suspected of containing contaminated soils have been identified in the ROD. Additional sampling shall be conducted in accordance with an EPA approved Sampling and Analysis

Plan to further define areas to be remediated using revegetative treatment techniques.

2. Sample contaminated soil areas in accordance with an EPA approved Sampling and Analysis Plan to provide data and information necessary to determine the appropriate revegetative treatment technique, including equipment, amendments, application rates, or determine that revegetative treatment techniques may not be appropriate. Collected data shall be compared with information provided from ARTS to support determinations.
3. Provide data to demonstrate the effectiveness of revegetative treatment techniques in reducing arsenic concentrations and establishing permanent vegetation. ARTS data may be utilized if specific to the area of concern, otherwise additional data collection will be required.
4. Provide final design plans and specifications as discussed below.

#### **3.3.2 Final Design Package**

As indicated above, a draft design package has been provided to EPA and MDHES. Upon receipt of EPA and MDHES comments, a final design package shall be provided to EPA containing the following:

1. Final design analysis detailing compliance with the Performance Standards.
2. Incorporation of agency comments on the draft design package.
3. Detailed rationale and basis for all final design components.
4. Data collection results, including QA/QC, if applicable.
5. Treatability study results, including QA/QC, if applicable.
6. Detailed construction drawings and technical specification.

### 3.4 Schedule

The Final Design Package shall be submitted to EPA and MDHES no later than 30 days from receipt of EPA and MDHES comments.

In addition, a schedule and outline of activities to be conducted under a revegetative RD/RA program shall be submitted to EPA and MDHES within 30 days from the effective date of this Work Plan.

## 4.0 REMEDIAL ACTION

This section of the RD/RAWP describes the Remedial Action (RA) work to be completed at the OW/EADA OU. The purpose of this section is to identify the methods and procedures necessary to meet the performance standards, Appendix B, established for the OW/EADA RD/RAWP. This section also identifies procedures for implementing the final design, as approved by EPA.

### 4.1 Remedial Action Tasks

Many of the following RA tasks have been initiated by ARCO with a draft design package and draft RA Work Plan recently submitted to EPA and MDHES. The following RA tasks identify activities to be completed and approved by EPA prior to the start of construction.

#### 4.1.1 Pre-Construction Tasks

1. Provide a Construction Quality Assurance Plan (CQAP) with the final design. The CQAP shall describe the construction and inspection activities necessary to verify that the RA is constructed and completed in accordance with the remedial design criteria, plans and specifications. The CQAP shall address quality assurance personnel qualifications, verification monitoring, reporting requirements and other considerations.

The CQAP shall also identify methods and procedures for inspecting and approving the use of materials, including soil, limestone, riprap and revegetation amendments. Specify testing methods when applicable.

2. Provide a Site Specific Health and Safety Plan (HSP) for implementation of RA activities with the final design. The HSP shall address health and safety considerations associated with implementing the RA.
3. Provide a Transportation Plan with the final design to describe the equipment, haul routes, fugitive dust control measures, safety requirements, and other

procedures associated with the transporting and placing materials at the site.

4. Provide a Sampling and Analysis Plan with the final design to describe the sampling and analytical procedures, if required, that may be associated with any of the construction or monitoring related activities.
5. Provide an Operation, Monitoring and Maintenance (O&M) Plan with the final design. The O&M Plan shall be developed to ensure that the remedy, as implemented, will continue to meet performance standards long after completion of the Remedial Action. The O&M Plan shall describe operation, inspection, monitoring and maintenance activities to be performed to ensure that engineered structures function as designed.

The O&M Plan shall also describe the implementation of institutional control activities established in the final design, including the protection of engineered remedies, access restrictions, site security, and land use management, including land and groundwater use restrictions.

6. In addition to the O&M Plan, procedures shall be developed to ensure that institutional controls, as identified in the ROD and final design, are implemented in the event that the Prospective Purchaser Agreement and Conveyance Document are not executed.
7. Develop a protocol for evaluating current commercial/industrial property to determine if remediation is necessary. Evaluation of existing data, visual observation, and discussions with affected landowners shall be required. Additional data collection may also be required if sufficient information is not available.

Protocol shall identify procedures for documenting the evaluations and decisions made (remediation/no remediation) with EPA, MDHES, ADL and the affected landowners.

8. Develop an environmental compliance program to assure compliance with performance standards during construction. The program shall include requirements for:
  - Protecting riparian vegetation and the stream during construction.

- Control of dust and runoff.
- Monitoring air quality during construction.
- Monitoring surface water quality during construction in or adjacent to Warm Springs Creek.

The program shall factor in consultation with other federal and state agencies as required under the performance standards.

9. Develop a program, if necessary, to evaluate potential discharge from surface water control structures to determine if additional measures will be needed to comply with final remediation requirements to be established under the Anaconda Regional Water and Waste OU.
10. Develop procedures to ensure compliance with historical and cultural resource preservation requirements.

#### **4.1.2 Post-Construction Tasks**

The following Remedial Action tasks identify activities to be completed after implementation of the Remedial Action.

1. Provide Pre-final Inspection Forms (PIFs) documenting completion and approval of each segment of the construction.
2. Provide a Remedial Action Completion Report (RACR) to document that the construction was completed in accordance with the design specifications and is in compliance with the performance standards identified in Appendix B. The RACR shall include the PIFs, updated construction schedule, description of construction activities, as-built drawings, quality assurance control documentation, sampling results and other considerations. The RACR shall also document efforts to comply with the institutional control measures identified in the ROD and final design. The RACR shall also identify changes or modifications to the final Operation and Maintenance Plan.

#### **4.2 Reporting and Recordkeeping**

The Contractor shall record on a daily basis during construction, the following information, as applicable, during the RA:

1. Accidents;



2. Product delivery and usage;
3. QA/QC on required products;
4. Laboratory analytical tests performed and results; and
5. Location maps for waste material relocated under cover material.

The QA/QC Oversight Engineer shall record on a daily basis during operation, the following information:

1. Field observations; and
2. Geotechnical and chemical test frequencies and results.

ARCO shall submit the monthly report of construction activities during performance of the RA. ADL shall submit the annual monitoring reports to the agencies as outlined in the Operations and Maintenance Plan.

#### **4.3 Remedial Action Schedule**

Two approximate RA project schedules are provided as Figures 2(a) and (b) and 3. The project schedules are based on whether a dedicated development is to occur as part of this RA. The first scenario assumes that a Prospective Purchaser Agreement (PPA) and conveyance document can be executed for this OU. The second scenario assumes that a PPA is not able to be executed and therefore, the proposed dedicated developments would not occur. Under the first scenario, a UAO, PPA and conveyance document are executed prior to May 1, 1994 (Figure 2a) or prior to April 1995 (Figure 2b). Under the second scenario, the UAO is executed in 1994 and work proceeds as outlined in Figure 3.

A final schedule and outline of all remaining RA activities shall be submitted to EPA and MDHES for approval after determination of the above scenario.



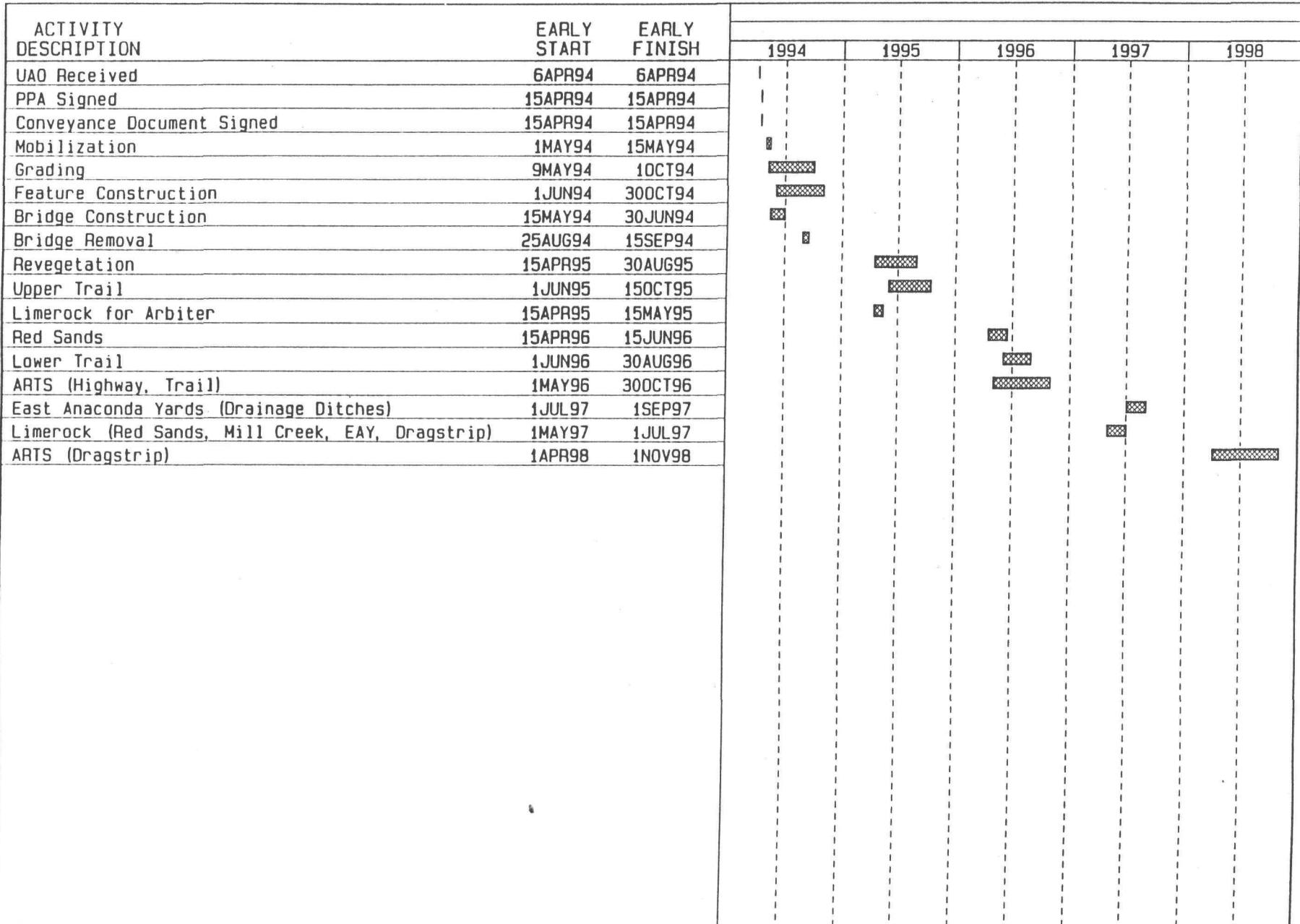
Town of Anaconda



10 ft. contour lines

Figure 1

Six subareas of the Old Works/East Anaconda Development Area operable unit.



Plot Date 28MAR94  
 Data Date 1JAN94  
 Project Start 1JAN94  
 Project Finish 1NOV98

▣ Activity Bar/Early Dates  
 ▣ Critical Activity  
 ▣ Progress Bar  
 ◊/P Milestone/Flag Activity

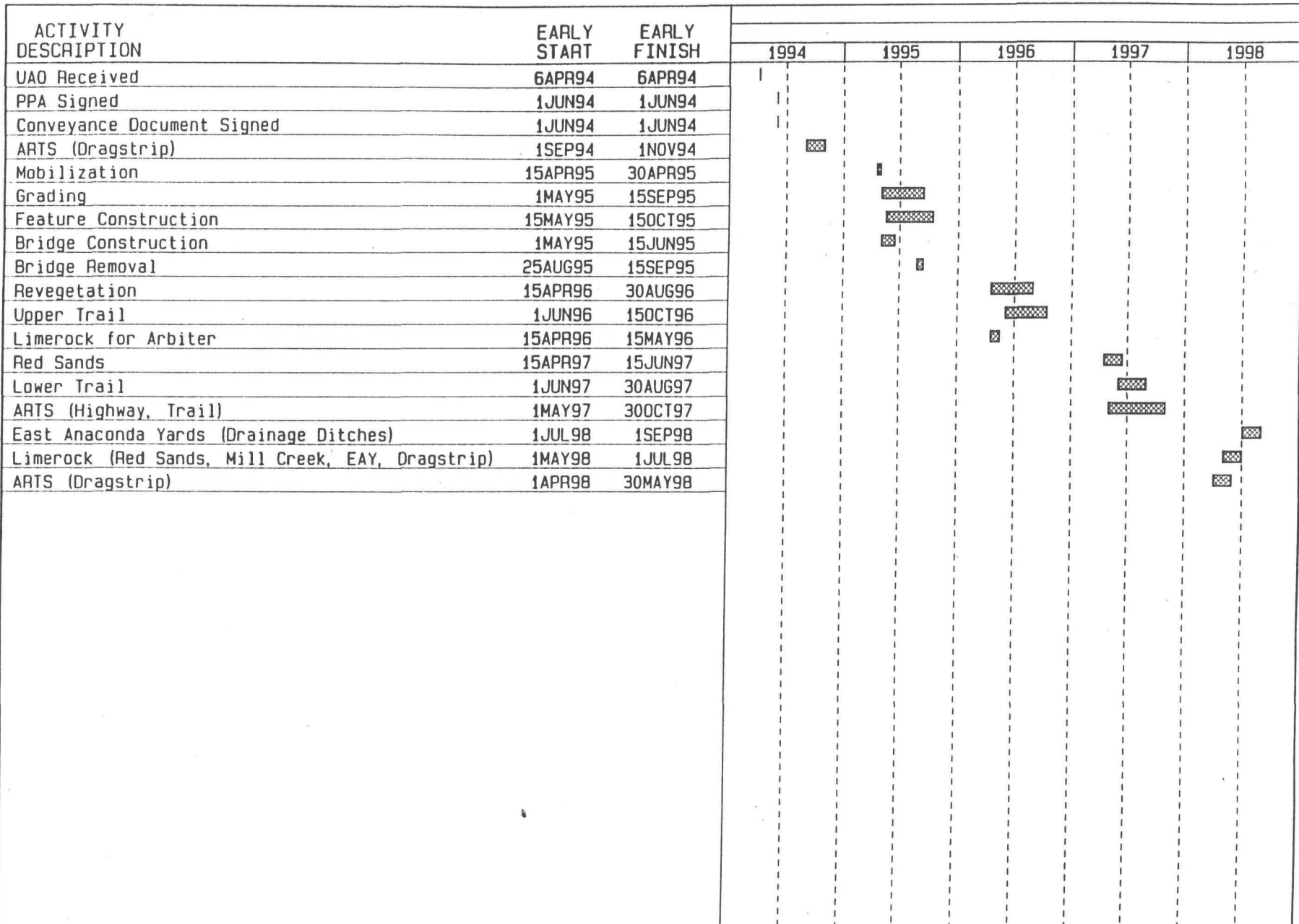
RA3A

Sheet 1 of 1

FILL

Remedial Action Schedule  
 Figure 2a

Date	Revision	Checked	Approved



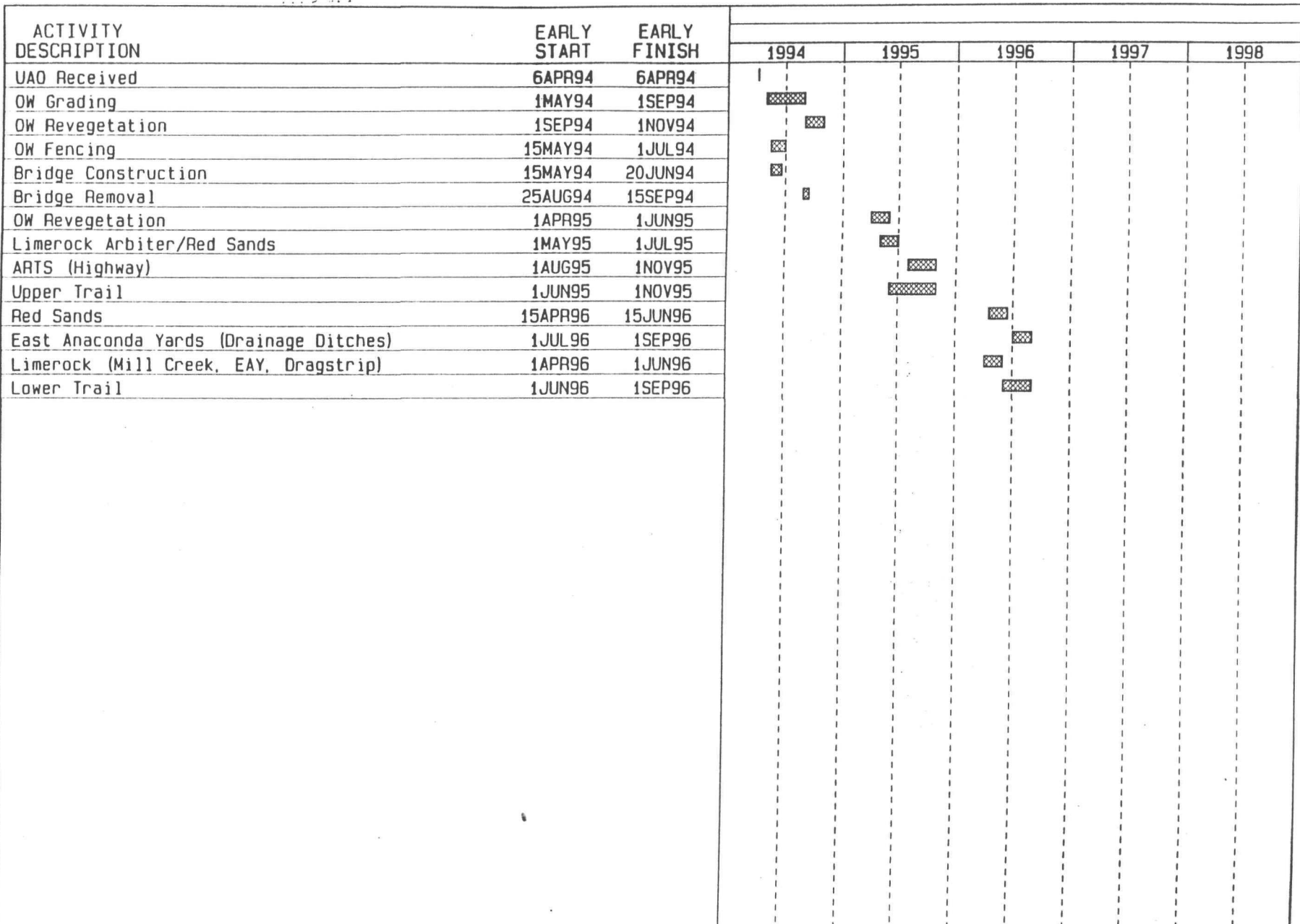
Plot Date 28MAR94  
 Data Date 1JAN94  
 Project Start 1JAN94  
 Project Finish 1SEP98

Activity Bar/Early Dates  
 Critical Activity  
 Progress Bar  
 Milestone/Flag Activity

RA3B Sheet 1 of 1  
**Remedial Action Schedule**  
**Figure 2b**

FILL x

Date	Revision	Checked	Approved



Plot Date 20MAR94  
 Data Date 1JAN94  
 Project Start 1JAN94  
 Project Finish 1SEP96

Activity Bar/Early Dates  
 Critical Activity  
 Progress Bar  
 Milestone/Flag Activity

Sheet 1 of 1  
 Remedial Action Schedule  
 Figure 3

Date	Revision	Checked	Approved

## APPENDIX A

### TO REMEDIAL DESIGN/REMEDIAL ACTION WORK PLAN FOR THE OLD WORKS/EAST ANACONDA DEVELOPMENT AREA OPERABLE UNIT, ANACONDA SMELTER SUPERFUND SITE - DRAFT DESIGN WORK PLAN

#### 6.0 Remedial Management Strategy

This section of the RD Work Plan describes the remedial Management Strategy, which will address the RD activities for the OW/EADA OU of the Anaconda Smelter NPL Site. Certain specific tasks have been identified as necessary to develop a design plan to meet the intent of the Proposed Plan and the anticipated remedy to be presented in the Record of Decision. The approach for accomplishing these tasks is described below in the following sections.

#### 6.1 Remedial Design Tasks

The Proposed Plan (September 1993) identified the major components for the intended remedy. These are presented in Section 2.0 of this Work Plan. The design tasks have been organized into the following major components:

- Revegetation
- Engineered Covers
- Surface Controls
- Warm Springs Creek Channel Controls
- Historic Preservation and Interpretive Trail System
- Institutional Controls

The goals for each component as provided by the risk assessment and ARARs, the plan as provided in the Proposed Plan and the major design tasks are summarized below.

##### 6.1.1 Revegetation

###### 6.1.1.1 Goals

1. Reduce arsenic concentrations at the surface to below 1000 ppm (based on the risk assessment) for the entire site, with exception, using a combination of revegetation techniques and/or engineered covers.
2. Reduce arsenic concentrations at the surface to below 500 ppm (based on the risk assessment) in current industrial or commercial areas using a combination of revegetation techniques and/or engineered covers.
3. Prevent any discharge, seepage, infiltration, or flow from waste sources (wastes piles, heap roast, jig tailings and red sands) which may result in the

pollution (i.e. degradation or exceedance of standards) of State waters (based on ARARs (40 CFR 125, 40 CFR 257.3-3,4, MCA 75-5-303 & 605 and ARM 16.20.633) and consistency with final remedy (RWW)) by consolidating and grading wastes, surface controls and using a combination of vegetative and/or engineered covers.

Revegetation techniques, which may include deep tilling, lime additions and soil amendments, shall reduce surface soil arsenic concentrations to below 1000 ppm and establish a diverse, effective and permanent vegetative cover (ARM 26.4.711) .

Vegetative covers shall be designed to stabilize soil covers, reduce erosion to wind and water, and reduce infiltration through evapotranspiration.

#### 6.1.1.2 Plan

Apply revegetation techniques to areas of the OW/EADA site to reduce surface concentrations, reduce erosion (wind and water) and reduce infiltration. Potential areas shown on the attached map include:

- o The golf course area of Subareas 1 and 2.
- o The area north of the ball fields, Teressa Ann Terrace in Subarea 3.
- o The area north, northwest of the Arbiter Plant, the Old Works Tailings Ponds, the area east of the Arbiter Plant and along Highway 1 in subarea 4.
- o The unreclaimed areas of Subarea 5.
- o The areas along Warm Springs Creek and Highway 48 in Subarea 6.
- o The area west of the highway in Mill Creek.

#### 6.1.1.3 Tasks

1. Identify specific areas where revegetative techniques may meet remediation goals.\*
2. Identify data needs for determining the appropriate revegetative technique (i.e. deep tilling, amendments, soil cover) and design criteria (i.e. amendment mixtures, mix and soil depths, etc.).\*
3. Develop performance standards for monitoring the success of the revegetation techniques.\*
4. Determine process/schedule for collecting data and making design decisions.

5. Develop preliminary design plans.\*
6. Provide support for preliminary plans by comparing collected data to ARTS study.
7. Develop final design plans and specifications at the time of implementation.

\*Provide sufficient rationale and analysis of data to support the determinations in the above tasks.

## 6.1.2 Engineered Covers

### 6.1.2.1 Goals

Reduce arsenic concentrations at the surface to below 1000 ppm (based on the risk assessment) for the entire site, with exception, using a combination of revegetation techniques and/or engineered covers.

Reduce arsenic concentrations at the surface to below 500 ppm (based on the risk assessment) in current industrial or commercial areas using a combination of revegetation techniques and/or engineered covers.

Prevent any discharge, seepage, infiltration, or flow from waste sources (waste piles, heap roast, jig tailings and red sands) which may result in the pollution (i.e. degradation or exceedance of standards) of State waters (based on ARARs (40 CFR 125, 40 CFR 257.3-3,4, MCA 75-5-303 & 605 and ARM 16.20.633) and consistency with final remedy (RWW)) by consolidating and grading wastes, surface controls and using a combination of vegetative and/or engineered covers.

Engineered covers shall be designed to provide an effective and permanent barrier to waste materials. Soil covers shall be stabilized with revegetation that provides a diverse, effective and permanent cover.

Vegetative covers shall be designed to stabilize soil covers and reduce erosion and infiltration.

### 6.1.2.2 Plan

Apply engineered covers to waste sources posing a potential threat to human health and the environment. Specifically those areas which contain wastes greater than 1000 ppm arsenic such as Red Sands, Waste Piles and Jig Tailings and wastes susceptible to erosion and/or infiltration.



#### 6.1.2.3 Tasks

1. Determine which wastes are to be consolidated and covered or just covered to meet the goals for:  
risk reduction,  
erosion control, and  
infiltration reduction
2. Determine design criteria for cover designs to meet remediation goals (i.e. permeability, drainage, erosion protection, growing depth, etc.).
3. Develop preliminary cover design plans for the various wastes and end uses.
4. Develop revegetation requirements for stabilizing covers where appropriate.
5. Develop final design plans and specifications.

#### 6.1.3 Surface Controls

##### 6.1.3.1 Goals

Prevent any discharge, seepage, infiltration, or flow from waste sources (wastes piles, heap roast, jig tailings and red sands) which may result in the pollution (i.e. degradation or exceedance of standards) of State waters (based on ARARs (40 CFR 125, 40 CFR 257.3-3,4, MCA 75-5-303 & 605 and ARM 16.20.633) and consistency with final remedy (RWW)) by consolidating and grading wastes, surface controls and using a combination of vegetative and/or engineered covers.

Consolidation and grading shall be provided to reduce areas of infiltration and promote drainage off of or away from waste materials while minimizing sedimentation, erosion and instability of waste materials.

Surface controls shall be designed using Best Management Practices to control storm water runoff from the site to Warm Springs Creek.

##### 6.1.3.2 Plan

Prevent contaminated runoff from entering Warm Springs Creek which may cause degradation of water quality by reducing the erosion of, and runoff from, waste sources including Red Sands, Heap Roast, Jig Tailings, Waste

Piles and Flue Areas. Surface controls could include erosion protection (i.e. consolidation, grading, diking, vegetation), barriers to waste (i.e. liners, covers), sedimentation containment (i.e. check dams basins), and runoff management (i.e. runoff routing)

#### 6.1.3.3 Tasks

1. Identify surface controls to be used in conjunction with the various wastes sources or areas.
2. Determine design criteria necessary to meet remediation goals (i.e. design storm, erosion protection, metal concentrations).
3. Develop preliminary design.
4. Provide data (i.e. calculations, models) to support preliminary design.
5. Develop design plans and specifications.

#### 6.1.4 Warm Springs Creek Stream Channel Controls

##### 6.1.4.1 Goals

Prevent the washout of waste materials from the Warm Springs Creek 100-year peak flood event (based on ARARs 40 CFR 257.3-1, ARM 36.15.603,606 & 703) through the use of stream channel controls, removal of obstructions (i.e. bridges), or removal of waste materials.

Stream channel controls shall be designed and constructed to minimize potential erosion from a flood of 100-year frequency as well as safely withstand up to a flood of 100-year frequency.

Stream channel controls shall be designed to not increase the elevation of the 100-year frequency flood, increase erosion upstream, downstream or across stream.

Waste materials not adequately protected from washout shall be removed from the floodway/plain.

##### 6.1.4.2 Plan

Upgrade or repair the existing dike system or construct a new dike system which will prevent the washout of remaining "in place" waste materials within the OW/EADA OU.

#### 6.1.4.3 Tasks

1. Determine flows from 100-year flood for current conditions. Evaluate predicted flood flows above Cedar St. bridge as well as downstream of the landfill bridge.
2. Determine criteria for meeting remediation goals (i.e. dike stability, permeability and erosion protection).
3. Investigate stability of existing dike system and ability of existing structures to pass flood flows (i.e. modeling, geotechnical sampling).
4. Develop preliminary design plans.
5. Provide data to support preliminary design plans (i.e results of investigation).
6. Develop design plans and specifications.

#### 6.1.5 Historic Preservation and Interpretive Trail System

##### 6.1.5.1 Goals

Preserve, to the extent practicable, historic features in the Old Works Historic District and/or mitigate loss of historic features (based on ARAR) by development of historic trail system.

Remedial design and construction shall avoid to the extent practicable historic features, and/or design to maintain historic integrity.

Historic Trail System shall be designed and constructed to mitigate the unavoidable loss or impact to certain historic features within the Old Works Historic District, such as the Red Sands, Heap Roast Piles, Refinery Wastes and railroad beds.

##### 6.1.5.2 Plan

Avoid to the extent practicable impacts to the flues, ovens and other structures located on Stuckey Ridge. Design (consolidate, grade and cover certain waste sources (i.e. Red Sands and Heap Roast) to retain some historic integrity. Restrict access to exposed waste sources through the use of institutional controls.

Construct an interpretive trail system to mitigate for

unavoidable losses.

#### 6.1.5.3 Tasks

1. Identify historic features to be avoided and areas where historic integrity may be preserved.
2. Develop plans to preserve historic resources (avoidance) and plans to minimize impacts to other sources (i.e. Red Sands, Heap Roast).
3. Develop plans for the interpretive historic trail system.
4. Develop final designs and specifications.

#### 6.1.6 Institutional Controls

##### 6.1.6.1 Goals

Restrict access to exposed waste sources (based on risk assessment) through the use of institutional controls.

Protect engineered remedies (based on NCP) through the use of institutional controls.

Manage future land use and activities based on risk assessment) through the use of institutional controls.

Institutional controls including public and private land use controls shall be developed to restrict and manage land and groundwater use and activities.

##### 6.1.6.2 Plan

Provide for the protection of engineering controls constructed under the remedial action and institutional management of future land use, and development activities.

##### 6.1.6.3 Tasks

1. Review the ADL Development Permit System to determine appropriate amendments (i.e. action levels, mechanism for identification of private land use controls and others).
2. Develop private land use controls through restrictive covenants (conveyance document) to restrict access, activities and use of land and

groundwater.

3. Develop an Institutional Control Plan for implementing both public and private land use controls.

## APPENDIX B

### TO REMEDIAL DESIGN/REMEDIAL ACTION WORK PLAN - OLD WORKS/EAST ANACONDA DEVELOPMENT AREA OPERABLE UNIT, ANACONDA SMELTER SUPERFUND SITE - PERFORMANCE STANDARDS

This Appendix identifies Performance Standards for the Remedial Design/Remedial Action (RD/RA) at the Old Works/East Anaconda Development Area Operable Unit (OW/EADA OU) of the Anaconda Smelter Superfund Site and clarifies the extent to which Applicable or Relevant and Appropriate Requirements (ARARs) identified in the OW/EADA OU Record of Decision (ROD), as clarified in the FS, apply to the RD/RA activities to be conducted under this RD/RA. Requirements identified below are identified as they are promulgated on March 8, 1994, the date of the OW/EADA ROD.

The following remediation requirements, as described in the ROD, Exhibit 1, to Administrative Order EPA Docket No. CERCLA VIII-94-08 shall be Performance Standards for this action:

- Reduce arsenic concentrations at the surface to below 1000 parts per million (ppm) using a combination of revegetation treatment techniques and/or engineered covers.

Revegetation techniques, which may include deep tilling, lime additions, and soil amendments, shall reduce surface soil arsenic concentrations to below 1000 ppm and establish a diverse, effective and permanent vegetative cover.

Engineered covers shall be designed to provide an effective and permanent barrier to waste materials. Soil covers shall be stabilized with revegetation that provides a diverse, effective and permanent cover.

Waste sources associated with structures in Subarea 1, as identified in the ROD, are excluded in order to preserve the historic integrity of the site.

- Reduce arsenic concentrations at the surface to below 500 ppm in current industrial or commercial areas using a combination of revegetation techniques and/or engineered covers.

Revegetation techniques, which may include deep tilling, lime additions, and soil amendments, shall reduce surface soil arsenic concentrations to below 1000 ppm and establish a diverse, effective and permanent vegetative cover.

Engineered covers shall be designed to provide an effective and permanent barrier to waste materials. Soil covers shall be stabilized with revegetation that provides a diverse, effective and permanent cover.

- Minimize discharge, seepage, infiltration, or runoff from identified waste sources (i.e. Miscellaneous Waste Piles, Heap Roast Slag, Jig Tailings and Red Sands) to prevent the degradation of existing water quality by consolidating and grading wastes, surface controls and using a combination of vegetative and/or engineered covers.

Consolidation and grading shall reduce areas of infiltration and promote drainage off of or away from waste materials while minimizing sedimentation, erosion and instability of waste materials.

Surface controls shall be designed using Best Management Practices, such as described in *Montana Sediment and Erosion Control Manual*, MDHES, May 1993 (MDHES 1993) to control storm water runoff from the site to Warm Springs Creek.

Vegetative covers shall be designed to stabilize soil covers and reduce infiltration through evapotranspiration.

- Minimize the washout of waste materials from the Warm Springs Creek 100-year peak flood event through the upgrade or repair of levees adjacent to Warm Springs Creek and the replacement of existing culverts as necessary to safely pass the 100-year flood event.

Stream channel controls shall be designed and constructed to minimize potential erosion from a flood of 100-year frequency as well as safely withstand up to a flood of 100-year frequency.

Stream channel controls shall be designed such that they do not increase the elevation of the 100-year frequency flood, increase erosion upstream, downstream or across stream.

- Institutional controls shall be developed to restrict and manage future land and ground water use.

Assure that future land and water use at the site is consistent with EPA's determination of the

health and environmental risks posed contaminants left on site;

Provide for the preservation and maintenance of Superfund remedial structures on the site, including but not limited to caps, berms, waste repositories, and vegetated areas;

Require that future development at the site employ construction practices that are consistent with the protection of public health and the environment, as determined by Superfund remedial actions;

As development occurs at the site, implement the remediation of soil arsenic contamination to levels appropriate for the intended use, as determined by Superfund remedial actions; and

Provide for implementation of other laws applicable to development such as subdivision and floodplain requirements.

- Preserve, to the extent practicable, historic features in the Old Works Historic District and/or mitigate loss of or impact to historic features pursuant to the approved historic mitigation agreements.

Design and construction shall avoid to the extent practicable historic features, or design to maintain historic integrity.

A Historic Trail System shall be designed and constructed to mitigate the unavoidable loss of or impact to historic features.

Although final remediation of groundwater and surface water within the OW/EADA OU is not within the scope of the anticipated response action, this response action shall not degrade existing water quality. Further, the RA at the OW/EADA OU shall be consistent with the groundwater and surface water ARARs for the Anaconda Regional Water and Waste (RWW) OU, which will be the final remedial action for these media. Consistency will be achieved through minimization of releases from surface sources to water media.

Substantive provisions of the requirements listed below are identified as Performance Standards pursuant to 40 C.F.R. § 300.400. These Performance Standards must be attained during and at the completion of the remedial action, unless otherwise specified. No permits are required for the remedial action for the OW/EADA OU in accordance with Section 121(e) of CERCLA.



I. CONTAMINANT SPECIFIC PERFORMANCE STANDARDS

A. Federal and State Groundwater and Surface Water ARARs.

Final remediation of groundwater and surface water is not within the scope of the OW/EADA OU and will be addressed, as appropriate, under the RWW OU. On this basis, groundwater and surface water requirements have not been identified as final ARARs or Performance Standards for the OW/EADA. However, consistency between the RWW OU and the OW/EADA OU will be achieved through identification of sources of releases and minimization of releases that would result in the degradation of groundwater and surface water quality.

B. Federal and State Air Quality Requirement.

1. National Ambient Air Quality Standards, 40 C.F.R. § 50.6 (PM-10); 40 C.F.R. § 50.12 (lead). These provisions establish standards for PM-10 and lead emissions to air. Corresponding state standards are found at A.R.M. § 16.8.815 (lead) and A.R.M. § 16.8.821 (PM-10).

POINT OF COMPLIANCE: At the OW/EADA site boundary.

TIME OF COMPLIANCE: Upon completion of the RD/RA.

2. Montana Ambient Air Quality Regulations.

a. A.R.M. § 16.8.807. This provision establishes sampling, data collection and analytical requirements to ensure compliance with ambient air quality standards.

POINT OF COMPLIANCE: At the OW/EADA site boundary.

TIME OF COMPLIANCE: Upon completion of the RD/RA.

b. A.R.M. § 16.8.815. Lead emissions to ambient air shall not exceed a ninety (90) day average of 1.5 micrograms per cubic liter of air.

POINT OF COMPLIANCE: At the OW/EADA site boundary.

TIME OF COMPLIANCE: Upon completion of the RD/RA.

c. A.R.M. § 16.8.818. Settled particulate matter shall not exceed a thirty (30) day average of 10 grams per square meter.

POINT OF COMPLIANCE: At the OW/EADA site boundary.

TIME OF COMPLIANCE: Upon completion of the RD/RA.

d. A.R.M. § 16.8.821. PM-10 concentrations in ambient air shall not exceed a 24 hour average of 150 micrograms per cubic meter of air and an annual average of 50 micrograms per cubic meter of air.

POINT OF COMPLIANCE: At the OW/EADA site boundary.

TIME OF COMPLIANCE: Upon completion of the RD/RA.

## II. LOCATION SPECIFIC REQUIREMENTS

### A. Federal Location Specific Requirements.

The statutes and regulations set forth below relate to the preservation of certain cultural, historic, natural or other national resources which may be adversely affected by the OW/EADA remedial action. They require that such resources be identified, and that steps be done to minimize the impact of the remedial action upon any such resources.

1. National Historic Preservation Act, 16 U.S.C. § 470, 40 C.F.R. § 6.301(b), 36 C.F.R. Part 800 ("NHPA"). Compliance with NHPA requirements is expected to be attained through the Regional Historic Preservation Plan as implemented pursuant to agreements entered into with EPA and Anaconda/Deer Lodge. EPA, in consultation with the State Historic Preservation Officer, has determined that the Old Works Historic District, portions of the Red Sands, and the Interstate Lumber Buildings are eligible for listing on the National Register of Historic Places. Procedures for notification and documentation of cultural and historic resources and mitigation of unavoidable losses shall be established by EPA, in consultation with ARCO and the SHPO.

POINT OF COMPLIANCE: Within the OW/EADA OU.

TIME OF COMPLIANCE: During implementation and upon completion of the RD/RA.

2. Archaeological and Historic Preservation Act, 16 U.S.C. § 469, 40 C.F.R. § 6.301(c). This Act requires the preservation of data concerning scientific, prehistoric, or archaeological artifacts. Based upon available information and investigations to date, no irreparable loss or destruction of significant scientific, prehistoric or archeological data is anticipated under this remedial action. It is anticipated that no further actions will be required for compliance with these requirements under this remedial action. However, if significant scientific, prehistorical, historic or archeological data is found at the site, it must be preserved in an appropriate manner in accordance with the procedures set forth in the preceding provision.

the Warm Springs Creek stream corridor and the Floodplain Jig Tailings as being contained within the current floodplain. RA activities including bridge replacement and dike upgrade along Warm Springs Creek will occur within the Warm Springs Creek Floodway. The bridge replacement at the Dump Road will remove the Floodplain Jig Tailings from the 100-year floodplain or floodway. Based upon available information and investigations to date, it is anticipated that there will be no adverse impacts associated with direct and indirect development in a floodplain under this remedial action.

POINT OF COMPLIANCE: At sites of existing wetlands within the area of RD/RA activities within the 100-year floodplain.

TIME OF COMPLIANCE: During implementation and upon completion of the RD/RA.

6. Historic Sites, Buildings and Antiquities Act, 16 U.S.C. § 461 et seq.; 40 C.F.R. § 6.310(a). This provision requires federal agencies to consider the existence and location of land marks on the National Registry of National landmarks and to avoid undesirable impacts on such landmarks. To date, no such landmarks have been identified within the OW/EADA OU. It is anticipated that no further actions will be required for compliance with these requirements under this remedial action.

POINT OF COMPLIANCE: At locations of land marks on the National Registry of National landmarks within the OW/EADA OU.

TIME OF COMPLIANCE: During implementation and upon completion of the RD/RA.

7. Fish and Wildlife Coordination Act, 16 U.S.C. §§ 1531-1566; 40 C.F.R. § 6.302(g). These provisions require consultation when a federal agency proposes or authorizes any modification of any stream or other water body in order to provide adequate protection of fish and wildlife resources. EPA will consult with the U.S. Fish and Wildlife Service and the State of Montana, in determining that the remedial action as outlined in the Final Design Report, will provide adequate protection of fish and wildlife resources through the use of standard engineering and construction practices.

POINT OF COMPLIANCE: At locations where there are modifications to streams or other water bodies within the OW/EADA OU.

TIME OF COMPLIANCE: During implementation and upon completion of the RD/RA.

**B. Montana Location-Specific Requirements.**

1. Floodplain and Floodway Management Act, M.C.A. §§ 76-5-401, -403; A.R.M. §§ 36.15.216, -218, -606, and -703.

POINT OF COMPLIANCE: Within the OW/EADA OU.

TIME OF COMPLIANCE: During implementation and upon completion of the RD/RA.

3. Endangered Species Act, 16 U.S.C. § 1531, 40 C.F.R. § 6.302(h), 50 C.F.R. Parts 17 and 402. This statute and implementing regulations provide that federal activities not jeopardize the continued existence of any threatened or endangered species. Based upon available information and investigations to date, and consultation with the U.S. Fish and Wildlife Service, no designated threatened or endangered species or their habitats are expected to be affected by this remedial action. It is anticipated that no further actions will be required for compliance with these requirements under this remedial action.

POINT OF COMPLIANCE: Area of RD/RA activities.

TIME OF COMPLIANCE: During implementation and upon completion of the RD/RA.

4. Wetlands Protection, 40 C.F.R. § 6.302(a), and Executive Order No. 11990. These provisions require the avoidance of adverse impacts to wetlands and the avoidance of construction in wetlands if practicable. An inventory of wetlands has been compiled in the Wetlands and Threatened/Endangered Species Inventory with Determination of Effective Wetland Area, ARCO, 1993. Wetlands were delineated for the OW/EADA and include the riparian corridor of Warm Springs Creek, the upper portion of the middle gulch on Stuckey Ridge and the upper portion of the gulch north of the Anaconda Deer Lodge Landfill. Wetlands mitigation activities required for the OW/EADA OU remedial action shall utilize a basin-wide approach for establishing the nature and location of mitigation activity that is consistent with the evaluation criteria established in the Determination of Wetland Functional Value and Effective Wetland Area, ARCO, 1992. A description of potential mitigation measures shall be included within the Final Design Report.

POINT OF COMPLIANCE: At the sites of existing wetlands within the area of RD/RA activities.

TIME OF COMPLIANCE: During implementation and upon completion of the RD/RA.

5. Floodplain Management, 40 C.F.R. § 6.302(b), and Executive Order No. 11988. This provision requires that actions be taken to avoid, to the extent possible, adverse effects associated with direct or indirect development of a floodplain, or to minimize adverse impacts if no practicable alternative exists. The 100-year floodplain was delineated within the Old Works Engineering Evaluation/Cost Analysis Report, PTI, 1991. The report identifies

These provisions outline uses prohibited and permitted within floodway, flood fringe, and floodplain and variances for prohibited uses. The uses proposed to be implemented through this remedial action, bridge construction and replacement, and dike repair, are permitted uses within the floodplain and floodway of Warm Springs Creek. It is anticipated that the activities identified in the Final Design Report, using standard engineering and construction practices, will meet the requirements of this provision and that no further action will be required.

POINT OF COMPLIANCE: Within the 100-year floodplain and floodway of the Warm Springs Creek within the OW/EADA OU.

TIME OF COMPLIANCE: During implementation and upon completion of the RD/RA.

2. Natural Stream Bed and Land Preservation Act, M.C.A. § 75-7-102 and A.R.M. § 36.2.404. Streambed and bank preservation and protection as well as compliance with floodway regulations are required under this provision. It is expected that remedial activities will take place in or adjacent to Warm Springs Creek. However, this remedial action shall be conducted so as to minimize soil erosion and sedimentation to Warm Springs Creek. Appropriate agencies (Fish, Wildlife, and Parks, Water Quality Bureau, and COE) shall be consulted during the review of design plans.

POINT OF COMPLIANCE: Within the 100-year floodplain and floodway of Warm Springs Creek within the OW/EADA site boundary.

TIME OF COMPLIANCE: During implementation of the RD/RA.

### III. ACTION SPECIFIC REQUIREMENTS

#### A. RCRA Subtitle D Requirements.

40 C.F.R. Part 257 establishes criteria under Subtitle D of the Resource Conservation and Recovery Act for use in determining which solid waste disposal facilities and practices pose a reasonable probability of adverse effects on health or the environment. 40 C.F.R. § 257.1(a). This part comes into play whenever there is a "disposal" of any solid or hazardous waste from a "facility." "Disposal" is defined as "the discharge, deposit, injection, dumping, spilling, leaking, or placing of any solid waste or hazardous waste into or on any land or water so that such solid waste or hazardous waste or any constituent thereof may enter the environment or be emitted into the air or discharged into any waters, including ground waters." 40 C.F.R. § 257.2. "Facility" means "any land and appurtenances thereto used for the disposal of solid wastes." Portions of the OW/EADA OU may be or may become "facilities" which have been or may be used for the "disposal" of solid waste.

1. 40 C.F.R. Part 257. Criteria for Classification of Solid Waste Disposal Facilities and Practices. The activities to be performed for the OW/EADA OU remedial action are expected to comply with the following requirements. It is anticipated that these Performance Standards will be attained through the use of standard engineering and construction practices.

POINT OF COMPLIANCE: At the solid waste disposal facility.

TIME OF COMPLIANCE: During implementation and upon completion of the RD/RA.

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

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

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

d. 40 C.F.R. § 257.3-4. A facility shall not contaminate an underground source of drinking water beyond the solid waste boundary or beyond an alternative boundary specified in accordance with this section, although remediation of groundwater and surface water is outside the scope of this remedial action.

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

2. State of Montana Solid Waste Requirements.

POINT OF COMPLIANCE: At the solid waste disposal facility and on haul roads.

TIME OF COMPLIANCE: During implementation and upon completion of the RD/RA.

a. A.R.M. § 16.14.505(1). Sets forth standards that solid waste disposal sites must meet.

b. A.R.M. § 16.14.523. Specifies that solid waste must be transported in such a manner as to prevent its discharge, dumping, spilling or leaking from the transport vehicle.

B. Montana Strip and Underground Mine Reclamation Act, M.C.A. § 82-4-201 and following.

Certain discrete portions of the following regulatory provisions, to the extent they address changes in water quality and quantity, grading requirements, erosion control, and stabilization measures at certain locations addressed by the remedial action at the OW/EADA OU are Performance Standards. If a portion of a regulation is not specifically referred to below, then that portion of the regulation is not considered to be a Performance Standard. In lieu of certain of these requirements at certain areas, EPA may approve the application of revegetation treatment techniques.

1. A.R.M. § 26.4.501(3)(a) and (d) and (4). Backfill shall be placed as specified in the Final Design Report so as to minimize sedimentation, erosion, and leaching of acid or toxic materials into waters, unless otherwise approved. It is anticipated that the backfill areas will be filled with a combination of adjacent surrounding soils and/or imported soils from EPA approved borrow areas.

POINT OF COMPLIANCE: Certain RD/RA areas.

TIME OF COMPLIANCE: Upon completion of the RD/RA.

2. A.R.M. § 26.4.501(A)(1)(a) and (2). Final graded slopes shall be 5:1 unless otherwise approved. If steeper, slopes must have a long term static safety factor of 1.3, not to exceed the angle of repose unless the existing grade of the area from which the waste will be excavated is steeper, in which case the existing grade meets this requirement. Disturbed areas must be blended with undisturbed ground to provide a smooth transition in topography. In lieu of this certain of these requirements, EPA may approve the application of ARTS revegetation treatment techniques.

POINT OF COMPLIANCE: Certain RD/RA areas.

TIME OF COMPLIANCE: Upon completion of the RD/RA.

3. A.R.M. § 26.4.514. Final grading shall be done along the existing contour in order to minimize subsequent erosion and instability, unless otherwise approved.

POINT OF COMPLIANCE: Certain RD/RA areas.

TIME OF COMPLIANCE: Upon completion of the RD/RA.

4. A.R.M. § 26.4.519. Pertinent areas of the OW/EADA OU where excavation will occur shall be regraded to minimize settlement.

POINT OF COMPLIANCE: Certain RD/RA areas.

TIME OF COMPLIANCE: Upon completion of the RD/RA.

5. A.R.M. § 26.4.631(1), (2), (3)(a) and (b). Disturbances to the prevailing hydrologic balance shall be minimized. Changes in water quality and quantity, in the depth to groundwater and in the location of surface water drainage channels will be minimized, to the extent consistent with the selected remedial alternatives.

POINT OF COMPLIANCE: Certain RD/RA areas.

TIME OF COMPLIANCE: During implementation and upon completion of the RD/RA.

6. A.R.M. § 26.4.638(1)(a) and (c). Practices to prevent or minimize sedimentation and erosion shall be employed to the extent possible.

POINT OF COMPLIANCE: Certain RD/RA areas.

TIME OF COMPLIANCE: During implementation and upon completion of the RD/RA.

7. A.R.M. § 26.4.634. Disturbed drainages shall be restored to the approximate pre-disturbance configuration, to the extent consistent with the selected remedial alternatives.

POINT OF COMPLIANCE: Certain RD/RA areas.

TIME OF COMPLIANCE: Upon completion of the RD/RA.

8. A.R.M. § 26.4.641. Practices to prevent drainage from acid or toxic forming spoil material into ground and surface water shall be employed.

POINT OF COMPLIANCE: Certain RD/RA areas.

TIME OF COMPLIANCE: During implementation and upon completion of the RD/RA.

9. A.R.M. § 26.4.702(4), (5) and (6). Practices to prevent compaction, slippage, erosion, and deterioration of biological properties of soil shall be employed.

POINT OF COMPLIANCE: Certain RD/RA areas.



TIME OF COMPLIANCE: During implementation and upon completion of the RD/RA.

10. A.R.M. § 26.4.711. Requires that a diverse, effective and permanent vegetative cover of the same seasonal variety and utility as the vegetation native to the area of land to be affected must be established. In lieu of this requirement at certain areas, EPA may approve the application of revegetation treatment techniques.

POINT OF COMPLIANCE: Certain RD/RA areas.

TIME OF COMPLIANCE: During implementation and upon completion of the RD/RA.

11. A.R.M. § 26.4.721. Specifies that rills or gullies deeper than 9 inches shall be stabilized in disturbed areas.

POINT OF COMPLIANCE: Certain RD/RA areas.

TIME OF COMPLIANCE: During implementation and upon completion of the RD/RA.

12. A.R.M. § 26.4.751. Measures to prevent degradation of fish and wildlife habitat shall be employed.

POINT OF COMPLIANCE: Certain RD/RA areas.

TIME OF COMPLIANCE: During implementation and upon completion of the RD/RA.

13. A.R.M. § 26.4.761(2)(a), (e), (h), (j), and (k). These provisions specify that fugitive dust control measures shall be employed during excavation and construction activities to minimize the emission of fugitive dust in the OW/EADA OU. These provisions are addressed below in Section III.C.

POINT OF COMPLIANCE: Certain RD/RA areas.

TIME OF COMPLIANCE: During implementation of the RD/RA.

C. Air Requirements.

1. A.R.M. § 16.8.1401(2), (3), and (4). Airborne particulate matter. There shall be no production, handling, transportation, or storage of any material, use of any street, road, or parking lot, or operation of a construction site or demolition project unless reasonable precautions are taken to control emissions of airborne particles. Accordingly, reasonable precautions may include such actions as watering work areas, or minimizing or limiting load size.

POINT OF COMPLIANCE: At the excavated areas and on haul roads.

TIME OF COMPLIANCE: Whenever this standard is exceeded, the activity resulting in such exceedance shall immediately be suspended until such time as conditions improve. Suspension of such activities and implementation of appropriate preventive and corrective measures shall be deemed compliance with this Performance Standard.

2. A.R.M. § 16.8.1404(2). Visible Air Contaminants. Emissions into the outdoor atmosphere shall not exhibit an opacity of 20% or greater averaged over 6 consecutive minutes.

POINT OF COMPLIANCE: At the excavated areas and on haul roads.

TIME OF COMPLIANCE: Whenever this standard is exceeded, the activity resulting in such exceedance shall immediately be suspended until such time as conditions improve. Suspension of such activities and implementation of appropriate preventive and corrective measures shall be deemed in compliance with this Performance Standard.

3. A.R.M. § 16.8.1427. Nuisance or odor bearing gases. Gases, vapors and dusts will be controlled such that no public nuisance is caused outside the OW/EADA OU. It is anticipated that the utilization of standard engineering and construction practices in implementing the remedial action specified in the ROD as clarified in the RD will attain this ARAR and that no further action will be required.

POINT OF COMPLIANCE: At the OW/EADA site boundary.

TIME OF COMPLIANCE: During implementation of the RD/RA.

4. A.R.M. § 26.4.761(2)(a), (e), (h), (j), and (k). Fugitive dust control measures such as 1) watering, stabilization, or paving of roads, 2) vehicle speed restrictions, 3) stabilization of surface areas adjoining roads, 4) restriction of travel on other than authorized roads, 5) enclosing, covering, watering, or otherwise treating loaded haul truck, 6) minimizing area of disturbed land, and 7) revegetation, shall be planned and implemented, if any such measure or measures are appropriate for this remedial action.

POINT OF COMPLIANCE: At certain areas within the OW/EADA including work areas, haul routes, and areas of excavation and consolidation.

TIME OF COMPLIANCE: During implementation of the RD/RA.

D. Air Quality Requirements.

Remedial activities will comply with the following requirements to ensure that existing air quality will not be adversely affected by the OW/EADA OU remedial action.

1. A.R.M. § 16.8.815. The concentration of lead in ambient air shall not exceed a 90 day average of 1.5 micrograms per cubic meter of air.

POINT OF COMPLIANCE: At the OW/EADA site boundary.

TIME OF COMPLIANCE: During implementation of the RD/RA.

2. A.R.M. § 16.8.818. Settled particulate matter shall not exceed a 30 day average of 10 grams per square meter.

POINT OF COMPLIANCE: At the OW/EADA site boundary.

TIME OF COMPLIANCE: During implementation of the RD/RA.

3. A.R.M. § 16.8.821. The concentration of PM-10 in ambient air shall not exceed a 24 hour average of 150 micrograms per cubic meter of air and an annual average of 50 micrograms per cubic meter of air.

POINT OF COMPLIANCE: At the OW/EADA site boundary.

TIME OF COMPLIANCE: During implementation of the RD/RA.

#### E. Water Quality Requirements.

1. 40 C.F.R. Part 230. (Guidelines for Specification of Disposal Sites for Dredged or Fill Material) In the event that the remedial action results in the discharge of dredge or fill material to waters of the United States, the substantive provisions of this requirement, including but not limited to 40 C.F.R. §§ 230.10 et seq., and 230.70, et seq., shall be met.

2. 40 C.F.R. §§ 122.26 and 125. (Stormwater Discharge Requirements, Criteria and Standards for Best Management Practices) The substantive requirements of 40 C.F.R. § 125.100, which sets forth best management practices are Performance Standards and shall be complied with.

POINT OF COMPLIANCE: Within the OW/EADA site boundary, in connection with any discharges of stormwaters to waters of the United States.

TIME OF COMPLIANCE: During implementation and upon completion of the RD/RA.

### 3. State Water Quality Requirements.

Remediation of ground and surface water is outside the scope of this operable unit. The requirements identified below will be pertinent only in the case of structures created under the OW/EADA RD/RA from which there are discharges to ground and surface water as a result of the implementation of the OW/EADA RD/RA and only for the purpose of minimizing or preventing degradation of water quality as a result of implementation of the OW/EADA RD/RA.

Montana Water Quality Act, M.C.A. § 75-5-303, and 605, and implementing regulations at A.R.M. 16.20.604, -618, -632, -633, -702, -703, -1002, -1003, and -1011. These provisions establish Montana's water standards and requirements and nondegradation policy. Waste disposal areas and any discharge to surface or groundwater must be constructed or maintained so as to comply with these requirements. It is recognized that there may be temporary exceedances of these requirements during the remedial action.

POINT OF COMPLIANCE: At discharge points within the OW/EADA.

TIME OF COMPLIANCE: During implementation and upon completion of the RD/RA.