



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8

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JUL 31 2009

Ref: 8ENF-L

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Jerry Glazier
Silver Reef Properties, LLC
155 West 100 South
Hurricane, Utah 84737

Re: 5M Staging Area Superfund Site, Washington County, Utah
Unilateral Administrative Order to Conduct Clean-up

Dear Mr. Glazier:

The US Environmental Protection Agency, Region 8 (EPA), hereby issues to Silver Reef Properties, LLC ("Silver Reef"), a Unilateral Administrative Order for Removal Response Activities (Order)(enclosed) at the 5M Staging Area Superfund Site, Washington County, Utah (Site). The Order is effective ten (10) days from the date of signing by EPA. The Order requires Silver Reef to conduct certain removal actions ("clean-up") at the Site, as specified in the Order and the Statement of Work attached to the Order, and, among other things, to submit a final report on the cleanup performed. The Order also requires Silver Reef's payment of EPA costs in overseeing the performance of the removal action following your receipt of EPA's bill, which is anticipated to be issued after completion of the removal action. Please note the schedule for conducting the required work, including selecting a contractor and project coordinator, submitting a detailed work plan and health and safety plan, and completing the clean-up, as well as mandatory time frames for indicating your intent to comply with the Order and requesting a conference, if desired, are set forth in the Order. As previously discussed with you, the Order, including work requirements and schedules for conduct and completion of the work, are not negotiable.

As confirmed in our telephone conversation of May 8, 2009, negotiations for an Administrative Order on Consent did not achieve an agreement for your voluntary conduct of these activities. Nonetheless, the removal action required under the Order is virtually the same as that discussed during the prior negotiations. After completion of the activities under this Order, EPA will evaluate the need for further work at the Site.

If you have any questions pertaining to the response action required, please contact Peter Stevenson, On-Scene Coordinator, at stevenson.peter@epa.gov or at (303) 312-6799. EPA has confirmed that you are not currently represented by legal counsel in this matter. If you have any questions regarding the enclosed Order or related requirements, please call me at (303) 312-6912.

If you decide to retain counsel in this matter, I would be happy to discuss any related issue with him/her. Any such discussions will not by themselves extend any pertinent response deadline or schedule.

Sincerely,



James Stearns
Staff Attorney

Enclosure: Unilateral Administrative Order with appendices

cc: Peter Stevenson, 8EPR-ER
Maureen O'Reilly, 8ENF-RC.
Craig Barnitz, Utah DEQ



UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION 8

IN THE MATTER OF:

5M Staging Area Site
Washington County, Utah

Silver Reef Properties, LLC,

Respondent.

UNILATERAL ADMINISTRATIVE ORDER
FOR REMOVAL RESPONSE ACTIVITIES

U.S. EPA Region 8
CERCLA Docket No. **CERCLA-08-2009-0004**

Proceeding Under Section 106(a)
of the Comprehensive
Environmental Response,
Compensation, and Liability
Act, as amended, 42 U.S.C.
§9606(a)

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- APPENDICES:
- 1 - Site Maps
 - 2 - Action Memorandum, with attachments
 - 3 - Statement of Work

I. JURISDICTION AND GENERAL PROVISIONS

1. This Order is issued pursuant to 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"), and delegated to the Administrator of the United States Environmental Protection Agency ("EPA") by Executive Order No. 12580, January 23, 1987, 52 Federal Register 2923, and further delegated to the Regional Administrators by EPA Delegation Nos. 14-14-A and 14-14-B and to the undersigned EPA officials.

2. This Order pertains to property located at approximately 1 mile northwest of the town of Leeds, Utah, and generally described as "Jumbo Claim, Silver Reef Mining District," in Washington County, Utah [Sec. 1, T41S, R14W (37.2465° N / 113.3748° W)], at the 5M Staging Area Site (Site). The Site is generally depicted on the maps attached to this Order as Appendix 1, and to the Action Memorandum for the Site, also attached hereto as Appendix 2. This Order requires the Respondent to conduct removal actions described herein to abate an imminent and substantial endangerment to the public health, welfare or the environment that may be presented by the actual or threatened release of hazardous substances at or from the Site.

3. EPA has notified the State of Utah of this action pursuant to section 106(a) of CERCLA, 42 U.S.C. § 9606(a).

II. PARTIES BOUND

4. This Order applies to and is binding upon Respondent and Respondent's agents, officers, successors and assigns. Any change in ownership or corporate status of Respondent including, but not limited to, any transfer of assets or real or personal property shall in no way alter Respondent's responsibilities under this Order.

5. Respondent shall ensure that its contractors, subcontractors, and representatives receive a copy of this Order and comply with this Order. Respondent shall be responsible for any noncompliance with this Order.

III. DEFINITIONS

6. 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 in such regulations. Whenever terms listed below are used in this Order or in the appendices attached hereto and incorporated hereunder, the following definitions shall apply:

a. "Action Memorandum" shall mean the Action Memorandum issued by EPA for the 5M Staging Area Site on approximately December 17, 2008, and attached to this Order as Appendix 2.

b. "CERCLA" shall mean the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, 42 U.S.C. §§ 9601, et seq.

c. "Day" shall mean a calendar day unless expressly stated to be a working day. "Working day" shall mean a day other than a Saturday, Sunday, or Federal holiday. 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 close of business of the next working day.

d. "Effective Date" shall be the effective date of this Order as provided in Section XVIII.

e. "EPA" shall mean the United States Environmental Protection Agency and any successor departments or agencies of the United States.

f. "National Contingency Plan" or "NCP" shall mean the National Oil and Hazardous Substances Pollution Contingency Plan promulgated pursuant to section 105 of CERCLA, 42 U.S.C. § 9605, codified at 40 C.F.R. Part 300, and any amendments thereto.

g. "Order" shall mean this Unilateral Administrative Order for Removal Response Activities and all appendices attached hereto, which are hereby incorporated by reference. In the event of conflict between this Order and any appendix, this Order shall control.

h. "Paragraph" shall mean a portion of this Order identified by an arabic numeral.

i. "RCRA" shall mean the Solid Waste Disposal Act, as amended, 42 U.S.C. §§ 6901, et seq., (also known as the Resource Conservation and Recovery Act).

j. "Removal Actions" shall mean those activities to be undertaken by Respondent in accordance with the 5M Staging Pile Repository Statement of Work, attached to this Order as Appendix 3, and the detailed 5M Staging Area Removal Work Plan, as approved by EPA pursuant to this Order.

k. "Section" shall mean a portion of this Order identified by a roman numeral.

l. "Site" shall mean the 5M Staging Area Site, encompassing approximately 10 acres, located approximately 1 mile northwest of the town of Leeds, in Washington County, Utah, described as "Jumbo Claim, Silver Reef Mining District, Washington County, Utah [Sec. 1, T41S, R14W (37.2465° N / 113.3748° W)], and depicted generally on the map attached to this Order as Appendix 1. The Site also encompasses any areas that hazardous substances or pollutants or contaminants from Site activities are found to have been placed on or to have migrated.

m. "State" shall mean the State of Utah.

n. "Statement of Work" shall mean the statement of work for implementation of the removal action, termed "5M Staging Pile Repository Statement of Work," attached to this Order as Appendix 3, and any modifications made thereto in accordance with this Order.

o. "UDEQ" shall mean the Utah Department of Environmental Quality and any successor departments or agencies of the State.

p. "Waste Material" shall mean 1) any "hazardous substance" under section 101(14) of CERCLA, 42 U.S.C. § 9601(14); 2) any pollutant or contaminant under section 101(33) of CERCLA, 42 U.S.C. § 9601(33); 3) any "solid waste" under section 1004(27) of RCRA, 42 U.S.C. § 6903(27); and 4) any "hazardous material" under Utah State law and regulation

q. "Work" shall mean all activities Respondent is required to perform under this Order.

r. "Work Plan" shall mean the plan entitled "5M Staging Area Removal Work Plan" required to be submitted by Respondent and any modifications made to the Work Plan in accordance with this Order, as approved by EPA pursuant to this Order.

IV. FINDINGS OF FACT

Site Description and History

7. a. Silver was mined in the Leeds area of Washington County, Utah, from approximately 1878 to around 1909, the last year of full-scale production in the Silver Reef Mining District ("District").

b. The Site is located in Washington County, Utah, at an elevation of approximately 3,680 feet above mean sea level, in a rural area, with a gentle slope to the southeast. The predominant feature at the Site, and subject of this removal action, is the unsecured tailings pile.

c. In or around 1979, 5M, Inc., apparently intending to re-process available tailings using an acid leach process, consolidated several District piles, placing most of the accumulated tailings onto a heap leach pad constructed approximately one-quarter mile from the 5M Staging Area Site. This heap leach area is known as the Leeds Silver Reclamation Superfund site and has been previously addressed in a separate clean-up action by EPA.

d. In approximately 1979, 5M, Inc., an inactive corporation previously registered in the State of Utah, placed approximately 8,000 cubic yards of additional tailings in a pile at the 5M Staging Area Site for "staging" ("Tailings Pile"). Respondent has asserted that the intent of staging was preparation for eventual re-processing of the materials in the Tailings Pile at the Site. The accumulated materials in the Tailings Pile have not to date been re-processed.

e. The Tailings Pile at the Site is uncovered and is located in the open, susceptible to wind and precipitation erosion. Several homes have been built near the Site, additional residences are being built in the area, and the Site has been and is expected to continue to be heavily-used for recreational purposes by off-road enthusiasts.

f. The uncapped, unprotected Tailings Pile contains residual mercury amalgam and un-amalgamated elemental mercury created as bi-products of the silver extraction process used on ores mined in the District. This residual mercury is being further released from the Tailings Pile at the Site and potentially off-site. In addition to mercury, other heavy metals, including, but not limited to, selenium, may also be present at elevated levels in the Tailings Pile.

g. The UDEQ Division of Environmental Response and Remediation (UDEQ/DERR) and EPA, conducted previous studies and assessments in the Leeds area. EPA concluded the primary Site-related health risk is associated with human exposure to elevated concentrations of mercury residuals found in or emanating from Site tailings.

h. EPA Region 8 has tentatively proposed an action level for mercury residues in soils available for human exposure of 80 mg/kg.

i. In April 2007, EPA and UDEQ/DERR representatives conducted a joint sampling excursion to the Site. Analysis of samples collected from the tailings pile at the Site showed total mercury concentrations to be as high as 192 mg/kg in some of the tailings (UOS 05/31/07 REMOVAL ASSESSMENT TRIP REPORT; final report dated June 2007). None of the surface samples submitted for TCLP analysis showed metal concentration exceeding federal regulatory limits. EPA Removal experience at other sites in the area suggest the likely presence of free mercury in the pile and/or in discarded mercury casks usually found co-mingled with District tailings. Sample data also showed the presence of elevated selenium, lead and arsenic in the tailings pile.

Release or Threatened Release

j. Placement of the Tailings Pile at the Site, and wind-blown dust from the Tailings Pile at the Site, seepage of contaminated leachate from the pile into soil and subsoil strata, migration of contamination from the pile by rain and other precipitation events, and wind-blown dust and direct transport of contaminated materials by human disturbance and other activities constitute releases, as defined by section 101(22) of CERCLA, 42 U.S.C. § 9601(22).

Endangerment

k. The above-described hazardous substances and pollutants and contaminants are contained in the Tailings Pile in concentrations and quantities that may pose an imminent and substantial endangerment to the public health or the environment. Risks associated with exposure to mercury in and from the Tailings Pile include inhalation and ingestion of contaminants when dust is produced by recreational vehicles driving across the Site. In addition, the slope of the

Tailings Pile is steep, increasing the likelihood that the contaminants will migrate off-Site if disturbed by vehicular or foot traffic, wind and/or adverse weather events. An unnamed surface stream leading to Leeds Creek is located to the south of the Site and a wetlands is located 0.5 miles from the Site. The Tailings Pile shows evidence of ongoing erosion due to wind and weather, and the use of tailings as a borrow source by nearby residents. Increased residential development in the area would likely lead to increased recreational use of the Site by pedestrians and 'off-road' vehicles.

l. Migration pathways and exposure routes exist at or from the Site through which the public and the environment may be exposed to toxic concentrations of the contaminants of concern. The principal pathways at or from the Site are the migration off-site of contaminants of concern, including mercury and other metals, by the action of wind blowing contaminated dust to nearby residences, precipitation causing run-off of contaminated materials from the Site, and recreationists use of the Site exacerbating the generation and migration of contaminated dust at the Site. Nearby residents and recreationists using the area could ingest and inhale contaminated soil particulates and dust.

m. Exposure to high levels of metallic, inorganic or organic mercury can permanently damage the brain, kidneys and developing fetus. Effects on brain functioning may result in irritability, tremors, changes in vision or hearing, and memory problems.

n. Mercury is a hazardous substance as defined by section 101(14) of CERCLA. For elemental mercury, the most important route of absorption is through inhalation. Because of the chemical nature of elemental mercury vapor, deposition and retention in the lungs are quite high (on the order of 80 percent in humans). Chronic mercury poisoning due to intake of elemental mercury vapor is a disease of the central nervous system.

o. Elemental mercury (Hg^0) is rapidly oxidized in the body to inorganic mercury (Hg^{2+}), which has an affinity for the kidney. The major target organs of elemental mercury are the central nervous system and the kidney. The effects of mercury vapor exposure (Hg^0) are neuropsychiatric in nature, and described as excessive shyness, insomnia, and emotional instability with depressive moods and irritability.

p. Saltation of metals which occurs during the drier months may cause crystallization of metal salts, and during storm events these salts may be flushed into down-gradient waters. If the high mercury concentrations on-Site reach a pond or waterway downstream from the Site, anaerobic conditions could promote the methylation of mercury to its more toxic organometallic form. Methyl mercury can accumulate in fish and bio-magnify within the food web, posing a concern for humans and wildlife in the area.

Respondent / Site Ownership and Operation

q. Respondent Silver Reef Properties, LLC, is a limited liability company registered in the State of Utah, active and in good standing, organized in the State of Utah on July 31, 2003.

r. 5M, Inc., owned the Site property and rights to the tailings pile at the Site from at least as early as approximately 1979 and up to approximately 2003. Silver Reef Properties, LLC, has owned the Site property and rights to the tailings pile at the Site since approximately 2003 to the present.

s. The tailings pile at the Site was deposited during the time of ownership and control by 5M, Inc.

t. Since taking over ownership in 2003, Respondent has had, and continues to have, the ability to control, in whole or significant part, access to and security of the Site and the Tailings Pile. Respondent has undertaken actions relating to control and management of the Site, but has not effectively secured the Site.

Response Costs

u. EPA has incurred response costs in carrying out response actions at and in connection with the Site, including, but not limited to, costs related to investigatory and design work, and anticipates incurring additional costs at and in connection with the Site, including, but not limited to, costs of overseeing work required under this Order, and potentially related to implementing the removal actions outlined in the Action Memorandum, if work under this Order is not effectively and completely performed in accordance with the schedules set forth in or approved pursuant to this Order.

V. CONCLUSIONS OF LAW AND DETERMINATIONS

8. Based on the Findings of Fact set forth above, and the Administrative Record supporting this removal action, EPA has determined that:

a. The 5M Staging Area Site is a "facility" as defined by section 101(9) of CERCLA, 42 U.S.C. § 9601(9).

b. The contaminants found at the Site, as identified in the Findings of Fact above, include "hazardous substance(s)" as defined by section 101(14) of CERCLA, 42 U.S.C. § 9601(14).

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

d. Respondent is liable under section 107(a) of CERCLA, 42 U.S.C. § 9607(a).

e. Respondent is the "owner" and "operator" of the facility, as defined by section 101(20) of CERCLA, 42 U.S.C. § 9601(20), and within the meaning of section 107(a)(1) of CERCLA, 42 U.S.C. § 9607(a)(1).

f. The conditions described in the Findings of Fact above constitute an actual or threatened "release" of a hazardous substance from the facility as defined by section 101(22) of CERCLA, 42 U.S.C. § 9601(22).

g. The conditions present at the Site constitute an imminent and substantial endangerment to public health, welfare, or the environment. These factors include, but are not limited to, the following:

(1) actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants; this factor is present at the Site due to the Tailings Pile being an attraction for area recreational users. In addition, the slope of the Pile is steep, increasing the likelihood the areal extent of the Pile footprint will continue to increase;

(2) high levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface, that may migrate; this factor is present at the Site due to the existence of mercury concentrations in the Tailings

Pile to be as high as 97 mg/kg in some of the tailings. In addition to the vehicular traffic across the Pile, the Pile's steep angle of repose increases the likelihood that contaminated materials will migrate off-Site when disturbed by vehicular or foot traffic, wind and/or weather;

(3) weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released; this factor is present at the Site due to the Tailings Pile being located in the open, unprotected, susceptible to wind- and/or precipitation-induced erosion; and

(4) the unavailability of other appropriate federal or state response mechanisms to respond to the release; this factor supports the actions required by this Order at the Site because there are no other federal or state response funding or mechanisms available or planned to address Site response needs.

9. The actual or threatened release of hazardous substances from the Site may present an imminent and substantial endangerment to the public health, welfare, or the environment within the meaning of section 106(a) of CERCLA, 42 U.S.C. § 9606(a).

10. The removal actions required by this Order are necessary to protect the public health, welfare, or the environment, and are not inconsistent with the NCP and CERCLA.

VI. ORDER

Based upon the foregoing Findings of Fact, Conclusions of Law, Determinations, and the Administrative Record for this Site, EPA hereby orders that Respondent comply with the following provisions, including but not limited to all attachments to this Order, all documents incorporated by reference into this Order, and all schedules and deadlines in this Order, attached to this Order, or incorporated by reference into this Order, and perform the following actions:

11. Notice of Intent to Comply. Respondent shall notify EPA in writing within ten (10) days after the effective date of this Order of Respondent's irrevocable intent to comply with this Order. Failure of Respondent to provide such notification within this time period shall be a violation of this Order by Respondent.

12. Designation of Contractor, Project Coordinator, and On-Scene Coordinator

a. Respondent shall perform the removal action itself or retain a contractor or contractors to perform the removal action. Respondent shall notify EPA of Respondent's qualifications or the names and qualifications of such contractors within ten (10) business days of the effective date of this Order. Respondent shall also notify EPA of the names and qualifications of any other contractors or subcontractors retained to perform the removal action under this Order at least fifteen (15) days prior to commencement of the removal action. EPA retains the right to disapprove of any, or all, of the contractors and/or subcontractors retained by Respondent, or of Respondent's choice of itself to do the removal action. If EPA disapproves of a selected contractor or Respondent, Respondent shall retain a different contractor or notify EPA that it will perform the removal action itself within five (5) business days following EPA's disapproval and shall notify EPA of that contractor's name or Respondent's name and qualifications within five (5) business days of EPA's disapproval.

b. Within ten (10) business days after the effective date of this Order, Respondent shall designate a Project Coordinator who shall be responsible for administration of all the Respondent's actions required by the Order. Respondent shall submit the designated coordinator's name, address, telephone number, and qualifications to EPA. To the greatest extent possible, the Project Coordinator shall be present on site or readily available during site work. EPA retains the right to disapprove of any Project Coordinator named by the Respondent. If EPA disapproves of a selected Project Coordinator, Respondent shall retain a different Project Coordinator and shall notify EPA of that person's name and qualifications within five (5) business days following EPA's disapproval. Receipt by Respondent's Project Coordinator of any notice or communication from EPA relating to this Order shall constitute receipt by Respondent.

c. The EPA has designated Peter Stevenson of the Superfund Emergency Response Unit, EPA Region 8, as its On-

Scene Coordinator ("OSC"). Respondent shall direct all submissions required by this Order to the OSC at:

Peter Stevenson
OSC for 5M Staging Area Site
Emergency Response Unit
U.S. Environmental Protection Agency (8EPR-ER)
1595 Wynkoop Street
Denver, Colorado 80202-1129
stevenson.peter@epa.gov

d. Respondent shall submit to the OSC three (3) copies of all plans, reports or other submissions required by this Order, including, but not limited to, the Statement of Work, or any Work Plan approved by EPA pursuant to this Order. Upon request by EPA, Respondent shall submit such documents in electronic form. Respondent shall simultaneously submit one (1) copy of all plans, reports or other submissions required by this Order to UDEQ at:

Craig Barnitz
State Project Manager for 5M Staging Area Site
Utah Department of Environmental Quality
Division of Environmental Response and Remediation
168 North 1950 West
Salt Lake City, UT 84114-4850.

13. Work to Be Performed. Respondent shall perform, at a minimum, the following: all actions necessary to implement the Statement of Work, attached to this Order as Appendix 3, in accordance with the removal action described in the Action Memorandum, and in compliance with the detailed Work Plan to be submitted and approved by EPA pursuant to this Order. Respondent shall submit periodic work progress reports during performance of the Work, and a final report, including, but not limited to, as-built drawings, upon completion of all Work at the Site. The actions to be implemented generally include, but are not limited to, the following: on-site consolidation, shaping and encapsulation of mercury-contaminated tailings into an engineered repository with run-on and run-off controls and monitoring capability, and institutional controls, as determined necessary by EPA under this Order. EPA anticipates that UDEQ shall assist EPA in the conduct of oversight of the Work performed by Respondent under this Order. Respondent shall complete all Work specified in the Statement of Work and EPA-approved Work Plan by March 30, 2010.

14. Work Plan and Implementation

a. Within thirty (30) days after the effective date of this Order, Respondent shall submit to EPA for approval a draft Work Plan for performing the removal action generally described in Paragraph 13, above. The draft Work Plan shall provide a detailed description of, including, but not limited to, specifications and engineering drawings, and an expeditious schedule for performance of the actions required by the Statement of Work and this Order. The Work Plan shall also include a Quality Assurance Project Plan ("QAPP"). The QAPP shall be prepared in accordance with "EPA Requirements for Quality Assurance Project Plans (QA/R-5)" (EPA/240/B-01/003, March 2001), and "EPA Guidance for Quality Assurance Project Plans (QA/G-5)" (EPA/600/R-98/018, February 1998).

b. EPA may approve, disapprove, require revisions to, or modify the draft Work Plan. If EPA requires revisions, Respondent shall submit a revised draft Work Plan within fourteen (14) days of receipt of EPA's notification of the required revisions. Respondent shall implement the Work Plan as finally approved in writing by EPA in accordance with the schedule approved by EPA. Once approved, or approved with modifications, the Work Plan, the schedule, and any subsequent modifications shall be fully enforceable under this Order. Respondent shall notify EPA at least three (3) business days prior to performing any on-site work pursuant to the EPA approved Work Plan. Respondent shall not commence or undertake any removal actions at the Site without prior EPA approval.

c. Health and Safety Plan. Within thirty (30) days after the effective date of this Order, Respondent shall submit for EPA review and comment a plan that ensures the protection of the public health and safety during performance of on-site work under this Order. This plan shall be prepared in accordance with EPA's Standard Operating Safety Guide (PUB 9285.1-03, PB 92-963414, June 1992). In addition, the plan shall comply with all current applicable Occupational Safety and Health Administration (OSHA) regulations; Hazardous Waste Operations and Emergency Response; found at 29 CFR Part 1910. If EPA determines that it is appropriate, the plan shall also include contingency planning. Respondent shall incorporate all changes to the plan recommended by EPA, and implement the plan during the pendency of the removal action.

d. Quality Assurance and Sampling. All sampling and analyses performed pursuant to this Order shall conform to EPA direction, approval, and guidance regarding sampling, quality assurance/quality control (QA/QC), data validation, and chain

of custody procedures. Respondent shall ensure that the laboratory used to perform the analyses participates in a QA/QC program that complies with the appropriate EPA guidance. Respondent shall follow the following documents as appropriate as guidance for QA/QC and sampling: "Quality Assurance/Quality Control Guidance for Removal Activities: Sampling QA/QC Plan and Data Validation Procedures," OSWER Directive Number 9360.4-01; "Environmental Response Team Standard Operating Procedures," OSWER Directive Numbers 9360.4-02 through 9360.4-08. Respondent shall only use laboratories that have a documented Quality System that complies with ANSI/ASQC E-4 1994, "Specifications and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs" (American National Standard, January 5, 1995), and "EPA Requirements for Quality Management Plans (QA/R-2) (EPA/240/B-01/002, March 2001)," or equivalent documentation as determined by EPA. EPA may consider laboratories accredited under the National Environmental Laboratory Accreditation Program ("NELAP") as meeting the Quality System requirements.

e. Upon request by EPA, Respondent shall have such a laboratory analyze samples submitted by EPA for quality-assurance monitoring. Respondent shall provide to EPA the quality assurance/quality control procedures followed by all sampling teams and laboratories performing data collection and/or analysis.

f. Upon request by EPA, Respondent shall allow EPA or its authorized representatives to take split and/or duplicate samples of any samples collected by Respondent while performing actions under this Order. Respondent shall notify EPA not less than three (3) business days in advance of any sample collection activity. EPA shall have the right to take any additional samples that it deems necessary. Upon request, EPA shall allow Respondent to take split or duplicate samples of any samples EPA takes as part of its oversight of Respondent's implementation of the Work.

15. Post-Removal Site Control. In accordance with the Work Plan schedule, or as otherwise directed by EPA, Respondent shall submit a proposal for post-removal site control consistent with Section 300.415(1) of the NCP and OSWER Directive No. 9360.2-02. Upon EPA approval, Respondent shall implement such controls and shall provide EPA with documentation of all post-removal site control arrangements.

16. Reporting. Respondent shall submit written progress reports to EPA concerning actions undertaken pursuant to this Order by the 1st day of each week during performance of field

activities after receipt of EPA's approval of the Work Plan, and monthly progress reports by the 30th day of each month during other times until termination of this Order, unless otherwise directed by the OSC. These reports shall describe all significant developments during the preceding period, including the actions performed and any problems encountered, analytical data received during the reporting period, and the developments anticipated during the next reporting period, including a schedule of work to be performed, anticipated problems, and planned resolutions of past or anticipated problems.

17. Conveyance of Property. Respondent and Successor in title shall, at least 30 days prior to the conveyance of any interest in real property at the Site, give written notice that the property is subject to this Order to the transferee and written notice to EPA and the State of the proposed conveyance, including the name and address of the transferee. Respondent in conveying such an interest shall require that the transferee comply with this Paragraph 19 of this Order - Access to Property and Information.

18. Final Report. Within sixty (60) days after completion of all removal actions required under this Order, Respondent shall submit for EPA review and approval a final Site Response Action Report summarizing the actions taken to comply with this Order. The final report shall conform, at a minimum, with the requirements set forth in Section 300.165 of the NCP entitled "OSC Reports". The final report shall include a good faith estimate of total costs or statement of actual costs incurred in complying with the Order, a listing of quantities and types of materials removed, a discussion of removal and disposal options considered for those materials, a listing of the ultimate destinations of those materials, a presentation of the analytical results of all sampling and analyses performed, and accompanying appendices containing all relevant documentation generated during the removal action (e.g., manifests, invoices, bills, contracts, and permits). The final report shall also include the following certification signed by a person who supervised or directed the preparation of that report:

Under penalty of law, I certify that to the best of my knowledge, after appropriate inquiries of all relevant persons involved in the preparation of the report, the information submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

19. Access to Property and Information

a. Respondent shall provide and/or obtain access to the Site and off-site areas to which access is necessary to implement this Order, and provide access to all records and documentation related to the conditions at the Site and the action conducted pursuant to this Order. Such access shall be provided to EPA employees, contractors, agents, consultants, designees, representatives, and State representatives. These individuals shall be permitted to move freely at the Site and appropriate off-site areas in order to conduct actions which EPA determines to be necessary. Respondent shall promptly submit to EPA, the results of all sampling or tests and all other data generated by Respondent or its contractor(s), or on the Respondent's behalf during implementation of this Order.

b. Where action under this Order is to be performed in areas owned by or in possession of someone other than Respondent, Respondent shall use its best efforts to obtain all necessary access agreements within thirty (30) days after the effective date of this Order, or as otherwise specified in writing by the OSC. Respondent shall immediately notify EPA if after using its best efforts it is unable to obtain such agreements. For purposes of this Paragraph, "best efforts" includes the payment of reasonable sums of money in consideration of access. Respondent shall describe in writing its efforts to obtain access. EPA may then assist Respondent in gaining access, to the extent necessary to effectuate the removal actions described herein, using such means as EPA deems appropriate. EPA reserves the right to seek reimbursement from Respondent for all costs and attorney's fees incurred by the United States in obtaining access for Respondent.

c. If EPA determines that land or water use restrictions in the form of state or local laws, regulations, ordinances or other governmental controls are needed to implement this Order, the Action Memorandum, Statement of Work or Work Plan, or to ensure the integrity and protectiveness thereof, or ensure noninterference therewith, Respondent shall cooperate with EPA's efforts to secure such governmental controls.

d. Commencing on the effective date of this Order, Respondent shall refrain from using the Site, or such other property, in any manner that would interfere with or adversely affect the implementation, integrity, or protectiveness of the response actions to be performed pursuant to this Order. Such restrictions include, but are not limited to, not disturbing the final cap or cover and not allowing public use of the

tailings pile for borrow material or for recreation; provided that, if Respondent wish to use or remove the tailings pile materials for metals reprocessing, Respondent may do so after notice to, and approval by, EPA, and provided that any remaining tailings pile materials and residual contamination must be immediately re-covered or capped, in accordance with the approved design, Statement of Work and Work Plan under this Order.

e. If EPA so requests, Respondent shall execute and record in the Recorder's Office or other appropriate land records office of Washington County, State of Utah, an easement, running with the land, that (i) grants a right of access for the purpose of conducting any activity related to this Order, including, but not limited to, those activities listed in Paragraphs 13, 14 and 15 of this Order, and (ii) grants the right to enforce the land/water use restrictions listed in Paragraph 19.c. and d. of this Order, or other restrictions that EPA determines are necessary to implement, ensure non-interference with, or ensure the protectiveness of the response actions to be performed pursuant to this Order. Respondent shall grant the access rights and the rights to enforce the land/water use restrictions to one or more of the following persons, as determined by EPA: (i) the United States, on behalf of EPA, and its representatives, (ii) the State and its representatives, and/or (iii) other appropriate grantees.

f. Respondent shall, within 45 days of receipt of EPA's request, submit to EPA for review and approval with respect to such property:

(1) A draft easement, in substantially the form as will be provided by EPA, or submitted by Respondent within 30 days from EPA's request, and approved by EPA, that is enforceable under the laws of the State of Utah, and

(2) A current title insurance commitment or some other evidence of title acceptable to EPA, which shows title to the land described in the easement to be free and clear of all prior liens and encumbrances (except when those liens or encumbrances are approved by EPA or when, despite best efforts, Respondent is unable to obtain release or subordination of such prior liens or encumbrances).

g. Notwithstanding any provision of this Order, EPA and the State retain all of their access authorities and

rights, as well as all of their rights to require land/water use restrictions, including enforcement authorities related thereto, under CERCLA, RCRA, and any other applicable statutes or regulations. EPA reserves the right to seek reimbursement from Respondent for all costs and attorney's fees incurred by the United States in the implementation of necessary institutional controls.

20. Record Retention, Documentation, Availability of Information

a. Respondent shall preserve all documents and information relating to work performed under this Order, or relating to the hazardous substances found on or released from the Site, for ten years following completion of the removal actions required by this Order. At the end of this ten year period and 30 days before any document or information is destroyed, Respondent shall notify EPA that such documents and information are available to EPA for inspection, and upon request, shall provide the originals or copies of such documents and information to EPA. In addition, Respondent shall provide documents and information retained under this Section at any time before expiration of the ten year period at the written request of EPA.

b. Respondent may assert a business confidentiality claim pursuant to 40 C.F.R. § 2.203(b) with respect to part or all of any information submitted to EPA pursuant to this Order, provided such claim is allowed by section 104(e)(7) of CERCLA, 42 U.S.C. § 9604(e)(7). Analytical and other data specified in section 104(e)(7)(F) of CERCLA shall not be claimed as confidential by the Respondent. EPA shall only disclose information covered by a business confidentiality claim to the extent permitted by, and by means of the procedures set forth at, 40 C.F.R. Part 2, Subpart B. If no such claim accompanies the information when it is received by EPA, EPA may make it available to the public without further notice to Respondent.

c. Respondent shall maintain a running log of privileged documents on a document-by-document basis, containing the date, author(s), addressee(s), subject, the privilege or grounds claimed (e.g., attorney work product, attorney-client), and the factual basis for assertion of the privilege. Respondent shall keep the "privilege log" on file and available for inspection. EPA may at any time challenge claims of privilege through negotiations or otherwise as provided by law or the Federal Rules of Civil Procedure.

21. Off-Site Shipments. All hazardous substances, pollutants or contaminants removed off-site pursuant to this Order for treatment, storage, or disposal shall be treated, stored, or disposed of at a facility in compliance, as determined by EPA, with 42 U.S.C. § 9621(d)(3) and the EPA "Revised Procedures for Implementing Off-Site Response Actions," OSWER Directive Number 9834.11, November 13, 1987. EPA will provide information on the acceptability of a facility under section 121(d)(3) of CERCLA and the above directive. Unless impracticable, prior notification of out-of-state waste shipments should be given consistent with OSWER Directive 9330.2-07.

22. Compliance With Other Laws

a. Respondent shall perform all actions required pursuant to this Order in accordance with all applicable local, state and federal laws and regulations except as provided in CERCLA section 121(e) and 40 C.F.R. § 300.415(i). EPA has determined that the activities contemplated by this Order are not inconsistent with the National Contingency Plan (NCP). In accordance with 40 C.F.R. § 300.415(i), all on-site actions required pursuant to this Order shall, to the extent practicable, as determined by EPA, considering the exigencies of the situation, attain applicable or relevant and appropriate requirements (ARARs) under federal environmental, state environmental, or facility siting laws. (see "The Superfund Removal Procedures for Consideration of ARARs During Removal Actions," OSWER Directive No. 9360.3-02, August 1991). Certain ARARs for the Site have been identified in the Action Memorandum. Respondent shall identify any additional pertinent ARARs in the Work Plan subject to EPA approval.

b. Except as provided in section 121(e) of CERCLA 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 applications and take all other actions necessary to obtain and to comply with all such permits or approvals. This Order is not, and shall not be construed to be, a permit issued pursuant to any Federal or state statute or regulation.

23. Emergency Response and Notification of Releases

a. If any incident, or change in site conditions, during the actions conducted pursuant to this Order causes or threatens to cause an additional release of hazardous substances from the Site or an endangerment to the public

health, welfare, or the environment, the Respondent shall immediately take all appropriate action. The Respondent shall take these actions in accordance with all applicable provisions of this Order, including, but not limited to the Health and Safety Plan, in order to prevent, abate or minimize such release or endangerment caused or threatened by the release. Respondent shall also immediately notify the OSC or, in the event of his/her unavailability, shall notify the Regional Duty Officer, Emergency Response Unit, EPA Region 8, at (303) 293-1788, of the incident or Site conditions. If Respondent fails to take action, EPA may respond to the release or endangerment and reserves the right to pursue cost recovery for costs incurred related to such actions.

b. In addition, in the event of any release of a hazardous substance from the Site, Respondent shall immediately notify the OSC at (303) 293-1788, and the National Response Center at (800) 424-8802. Respondent shall submit a written report to EPA within seven (7) days after each release, setting forth the events that occurred and the measures taken or to be taken to mitigate any release or endangerment caused or threatened by the release and to prevent the reoccurrence of such a release. This reporting requirement is in addition to, and not in lieu of, reporting under section 103(c) of CERCLA, 42 U.S.C. § 9603(c), and section 304 of the Emergency Planning and Community Right-To-Know Act of 1986, 42 U.S.C. § 11004, et seq.

VII. AUTHORITY OF THE EPA ON-SCENE COORDINATOR

24. The OSC shall be responsible for overseeing the proper and complete implementation of this Order. The OSC shall have the authority vested in an OSC by the NCP, 40 C.F.R. § 300.120, including the authority to halt, conduct, or direct any action required by this Order, or to direct any other removal action undertaken by EPA or Respondent at the Site. Absence of the OSC from the Site shall not be cause for stoppage of work unless specifically directed by the OSC.

25. Subject to the provisions of Paragraph 12, EPA and Respondent shall have the right to change their designated OSC or Project Coordinator. EPA shall notify the Respondent, and Respondent shall notify EPA five (5) days before such a change is made. Notification may initially be made orally, but shall be followed promptly by written notice.

VIII. ENFORCEMENT: PENALTIES FOR NONCOMPLIANCE

26. Violation of any provision of this Order may subject Respondent to civil penalties of up to thirty-seven thousand and five hundred dollars (\$37,500) per violation per day, as provided in section 106(b)(1) of CERCLA, 42 U.S.C. § 9606(b)(1). Respondent may also be subject to punitive damages in an amount up to three times the amount of any cost incurred by the United States as a result of such violation, as provided in section 107(c)(3) of CERCLA, 42 U.S.C. § 9607(c)(3). Should Respondent violate this Order or any portion hereof, EPA may carry out the required actions unilaterally, pursuant to section 104 of CERCLA, 42 U.S.C. § 9604, and/or may seek judicial enforcement of this Order pursuant to section 106 of CERCLA, 42 U.S.C. § 9606.

IX. RESERVATION OF RIGHTS

27. Except as specifically provided in this Order, nothing herein shall limit the power and authority of EPA or the United States to take, direct, or order all actions necessary to protect public health, welfare, or the environment or to prevent, abate, or minimize an actual or threatened release of hazardous substances, pollutants or contaminants, or hazardous or solid waste on, at, or from the Site. Further, nothing herein shall prevent EPA from seeking legal or equitable relief to enforce the terms of this Order, from taking other legal or equitable action as it deems appropriate and necessary, or from requiring the Respondent in the future to perform additional activities pursuant to CERCLA or any other applicable law. 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 this Order or the Site and not reimbursed by Respondent.

X. OTHER CLAIMS

28. By issuance of this Order, the United States and EPA assume no liability for injuries or damages to persons or property resulting from any acts or omissions of Respondent. The United States or EPA shall not be deemed a party to any contract entered into by the Respondent or its directors, officers, employees, agents, successors, representatives, assigns, contractors, or consultants in carrying out actions pursuant to this Order.

29. This Order does not constitute a pre-authorization of funds under section 111(a)(2) of CERCLA, 42 U.S.C. § 9611(a)(2).

30. Nothing in this Order shall constitute a satisfaction of or release from any claim or cause of action against the Respondent or any person not a party to this Order, for any liability such person may have under CERCLA, other statutes, or the common law, including but not limited to any claims of the United States for costs, damages and interest under sections 106(a) and 107(a) of CERCLA, 42 U.S.C. §§ 9606(a) and 9607(a).

XI. MODIFICATIONS

31. Modifications to any plan or schedule or the attached Statement of Work may be made in writing by the OSC or at the OSC's oral direction. If the OSC makes an oral modification, it will be promptly memorialized in writing; provided, however, that the effective date of the modification shall be the date of the OSC's oral direction. The rest of the Order, or any other portion of the Order may only be modified in writing by signatures of the EPA officials duly delegated to issue this Order.

32. If Respondent seeks permission to deviate from any approved plan or schedule or Statement of Work, Respondent's Project Coordinator shall submit a written request to EPA for approval outlining the proposed modification and its basis.

33. No informal advice, guidance, suggestion, or comment by EPA regarding reports, plans, specifications, schedules, or any other writing submitted by the Respondent shall relieve the Respondent of its obligations to obtain such formal approval as may be required by this Order, and to comply with all requirements of this Order unless it is formally modified.

XIII. NOTICE OF COMPLETION

34. When EPA determines, after EPA's review of the Final Report, that all removal actions have been fully performed in accordance with this Order, with the exception of any continuing obligations required by this Order, including, but not limited to, post-removal site controls or record retention, EPA will provide notice to the Respondent. If EPA determines that any removal actions have not been completed in accordance with this Order, EPA will notify the Respondent, provide a list of the deficiencies, and require that Respondent modify the Work Plan to correct such deficiencies. The Respondent shall

implement the modified and approved Work Plan and shall submit a modified Final Report in accordance with the EPA notice. Failure by Respondent to implement the approved modified Work Plan shall be a violation of this Order.

XIII. ACCESS TO ADMINISTRATIVE RECORD

35. The Administrative Record supporting these removal actions is available for review during normal business hours at EPA Records Center, 1595 Wynkoop Street, Denver, CO 80202.

XIV. OPPORTUNITY TO CONFER

36. Within seven (7) days after this Order is signed, Respondent may request a conference with EPA's Preparedness, Assessment and Emergency Response Program Director to discuss this Order. Any such conference shall be held within seven (7) days after EPA's receipt of the request, unless extended by agreement of the parties at the EPA offices in Denver, CO. At any conference held pursuant to the request, Respondent may appear in person or be represented by an attorney or other representative.

37. If a conference is held, Respondent may present any information, arguments or comments regarding this Order. The purpose and scope of the conference shall be limited to 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, does not constitute a proceeding to challenge this Order, and 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. Requests for a conference, must be by telephone followed by written confirmation mailed that day to James Stearns, Legal Enforcement Program, 1595 Wynkoop Street, Denver, CO 80202, at 303-312-6912. Any other submittals under this Paragraph shall be directed to Mr. Stearns.

XV. INSURANCE

38. At least seven (7) days prior to commencing any on-site work under this Order, the Respondent shall secure, and shall maintain for the duration of this Order, comprehensive general liability insurance and automobile insurance with limits of \$1,000,000 (one million dollars), combined single limit, naming EPA as an additional insured. Within the same time period, Respondent shall provide EPA with certificates of

such insurance and a copy of each insurance policy. Respondent shall submit such certificates and copies of policies each year on the anniversary of the Effective Date of this Order. In addition, for the pendency of this Order, Respondent shall satisfy, or shall ensure that its contractors or subcontractors satisfy, all applicable laws and regulations regarding the provision of worker's compensation insurance for all persons performing the Work on behalf of Respondent in furtherance of this Order. If Respondent demonstrates by evidence satisfactory to EPA that any contractor or subcontractor maintains insurance equivalent to that described above, or insurance covering the same risks but in a lesser amount, then Respondent need provide only that portion of the insurance described above which is not maintained by such contractor or subcontractor.

XVI. ADDITIONAL REMOVAL ACTIONS

39. a. If EPA determines that additional removal actions not included in an approved plan are necessary to protect public health, welfare, or the environment, EPA will notify Respondent of that determination. EPA may also require Respondent to modify any plan, design, or other deliverable required by this Order, including any approved modifications. Unless otherwise stated by EPA, within thirty (30) days of receipt of notice from EPA that additional removal actions are necessary to protect public health, welfare, or the environment, Respondent shall submit for approval by EPA a Work Plan, or supplement to an existing Work Plan, for the additional removal actions. The plan shall conform to the applicable requirements of Section VI, including but not limited to Paragraph 14, of this Order. Upon EPA's approval of the plan pursuant to Section VI, Paragraph 14, Respondent shall implement the plan for additional removal actions in accordance with the provisions and schedule contained therein

b. Upon approval by EPA, the Work Plan or Supplement to an existing 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 according to the standards, specifications, and schedule in the approved Work Plan or supplemental Work Plan as appropriate. Respondent shall notify EPA of its intent to perform such additional response activities within seven (7) days after receipt of EPA's request for additional response activities. This Section does not alter or diminish the OSC's authority to make oral

modifications to any plan or schedule pursuant to Section XII of this Order.

XVII. SEVERABILITY

40. 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 or determined to be subject to a sufficient cause defense by the court's order.

XVIII. EFFECTIVE DATE

41. This Order shall be effective ten (10) days after the Order is signed by the Regional Administrator or his/her delegatee. If a conference is requested, as provided herein, this Order shall be effective on the third (3rd) day following the day of the conference unless modified in writing by EPA.

IT IS SO ORDERED

By: 

Date: 4/30/07

David A. Ostrander, Director
Preparedness, Assessment, and Emergency Response Program
Office of Ecosystems Protection and Remediation
U.S. Environmental Protection Agency, Region 8

EFFECTIVE DATE: August 10, 2009

Figure 1 Site Location Maps

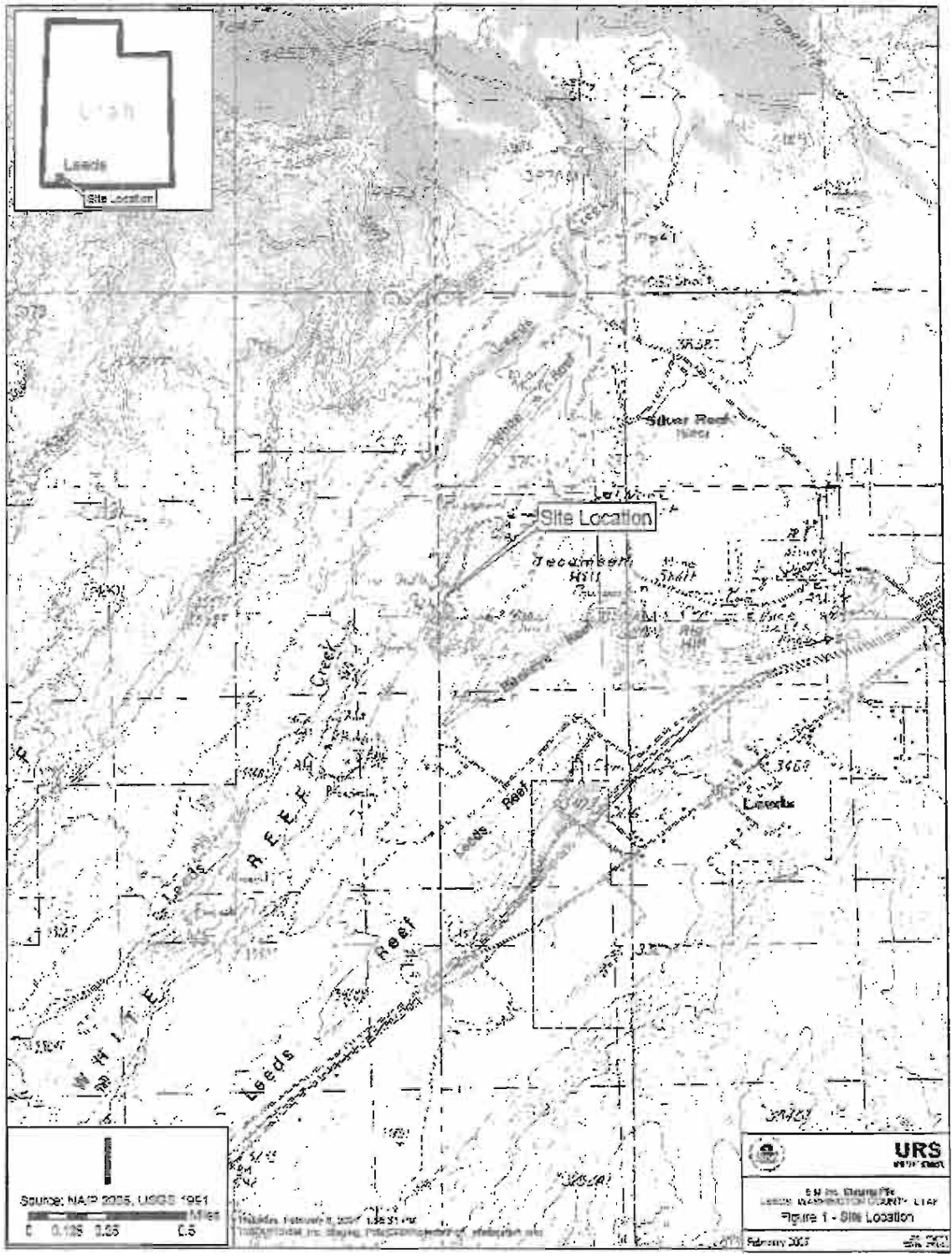
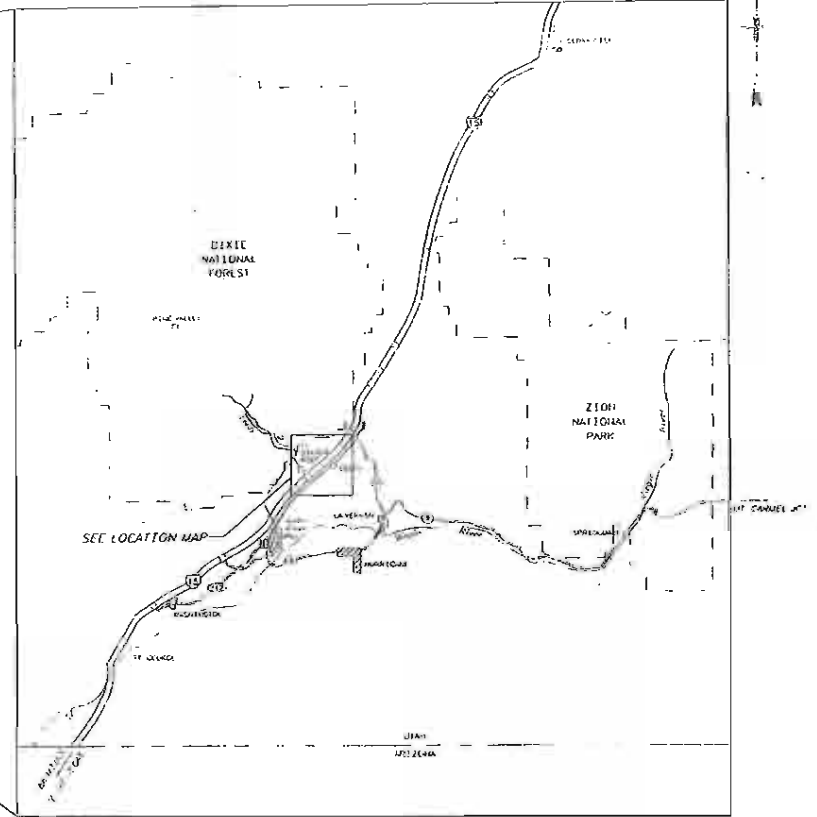
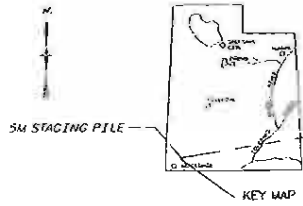
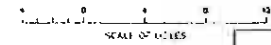


Figure 2 Leeds/Site Area Image





VICINITY MAP



Sheet no.	Drawing no.	Title
1	1556-418-350	Key Map, Vicinity Map, Location Map and Drawing List
2	1556-418-351	Overall Site
3	1556-418-352	Site Plan
4	1556-418-353	Pile Repository Sections

ALWAYS THINK SAFETY

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
U.S. ENVIRONMENTAL PROTECTION AGENCY
RECORD NO.

SM STAGING PILE
KEY MAP, VICINITY MAP, LOCATION MAP
AND DRAWING LIST

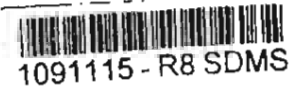
APPROVED: _____
DESIGNED: _____
CHECKED: _____
DATE: _____

DATE: _____

SHEET 1 OF 4

1556-418-350

DATE: 08/11/73
DRAWN BY: J. W. BERRY
CHECKED BY: J. W. BERRY
SCALE: AS SHOWN



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 8

1595 Wynkoop Street
DENVER, CO 80202-1129
Phone 800-227-8917
<http://www.epa.gov/region08>


Ref: 8EPR-ER

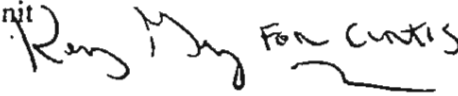
ACTION MEMORANDUM

SUBJECT: Request for Approval of and Funding for a Time Critical Removal Action (TCRA) at:

5M Inc. Staging Area
(approximately two miles west of)
Leeds, Washington County, UT

Lat / Long: 37.2475⁰ / -113.3739⁰

FROM: Peter Stevenson, On-Scene Coordinator
8EPR-ER 

THROUGH: Curtis Kimbel, Chief
Emergency Response Unit
8EPR-ER 

TO: David A. Ostrander, Program Director
Preparedness, Assessment & Emergency Response

ABSTRACT

Site ID#:	08-LE	Response Authority:	CERCLA
NPL Status:	Non NPL	Removal Category:	TCRA
CERCLIS ID #:	UTD988066239	Incident Type:	Mine/mill tailings
Removal Start Date:	(Mid - 2008)	Removal Compl. Date:	TBD

I. Purpose

The purpose of this ACTION MEMORANDUM is to request funding and document approval for a Removal at the 5M Inc. Staging Area ('Pile #2 or the 'Site'), located approximately two miles west of Leeds, Washington County, Utah.

II. Site Conditions and Background

Silver was mined in the Leeds area of Washington County generally from 1878 to around 1909, the last year of full-scale production in the Silver Reef Mining District.

This Removal action is to address and mitigate health threats to the local population and area recreational users, and threats to the environment, posed by excessive concentrations of mercury in tailings located on and about the Site. Mercury-contaminated tailings are currently being scattered around and from the Site as a result of ongoing vehicular and foot traffic across the Site, and tailings are moving from the Site as a result of continuing wind and sheet-flow erosion and pile slumping.

A. Site Description

Prior to 1996, the current Site owner, intending to 're-process' available tailings using an acid leach process, consolidated several District piles, placing most of the accumulated tailings onto a heap leach pad he constructed near the Site. In addition to the tailings staged on the heap leach pad, approximately 8,000 cubic yards of additional tailings were staged, uncovered, in a secondary pile ('Pile #2') located approximately ¼ mile north of the heap leach pad. The accumulated tailings, however, were never re-processed.

In 1996, during an earlier CERCLA Removal, EPA re-graded the tailings placed on the heap leach pad and capped them with a geosynthetic liner. Subsequent to that Removal, the Site has been heavily-used for recreational purposes by off-road enthusiasts, and numerous residential homes have been built near the Site.

The primary concern about Pile #2 is the residual mercury amalgam and un-amalgamated elemental mercury present in the tailings which were created as a by-product of the silver extraction process used on ores mined in the District. This residual mercury is being released from the Site. In addition to mercury, other heavy metals, such as selenium, may be also present at elevated levels in Site tailings.

1. Removal Site Evaluation

Several residences are in close proximity to the Site, and additional housing developments and/or businesses are being planned for the area. The Utah Department of Environmental Quality/Division of Environmental Response and Remediation (UDEQ/DERR) and EPA, conducting previous studies and assessments in the Leeds area, concluded the primary Site-related health risk is associated with human exposure to elevated concentrations of mercury residuals found in or emanating from Site tailings. EPA Region 8 has tentatively proposed an action level for mercury residues in soils available for human exposure of 80 mg/kg.

In April 2007, EPA and UDEQ/DERR representatives conducted a joint sampling/assessment excursion to Site Pile #2. During that excursion, EPA estimated the

total volume of tailings in Pile #2 to be 8,000 cubic yards, and with a Pile footprint covering approximately one acre. Analysis of samples collected at the Site showed mercury concentrations to be as high as 97 mg/kg in some of the stockpiled Pile #2 tailings (UOS 05/31/07 REMOVAL ASSESSMENT TRIP REPORT). None of the surface samples submitted for TCLP analysis showed metal concentration exceeding federal regulatory limit(s). EPA Removal experience at other sites in the area suggest the likely presence of free mercury in the pile and/or in discarded mercury casks usually found co-mingled with District tailings.

2. Physical Location

The relatively-flat Site is at an elevation of approximately 3,680 feet above mean sea level, in a rural area, with a gentle slope to the southeast. A few residences are located nearby. The unsecured Pile #2 tailings are located in the open, susceptible to wind and precipitation erosion. [Jumbo Claim, Silver Reef Mining District, Washington County, Utah (Sec 1, T41S, R14W (37.2475⁰ N / -113.3739⁰ W))]

3. Release or Threatened Release Into the Environment of a Hazardous Substance, Pollutant, or Contaminant

Risks associated with exposure to mercury in the tailings pile include inhalation/ingestion of contaminants when dust is produced by recreational vehicles driving across the site. In addition, the slope of the pile(s) is steep, increasing the likelihood the contaminants will migrate off-Site if disturbed by vehicular or foot traffic, wind, and/or adverse weather events (heavy snows, torrential downpours, etc.).



Mother and Child on ATVs atop Pile #2 - 02/06/07

4. NPL status

This Site is not on the NPL, not being considered for NPL listing.

B. Other Actions to Date

1. Previous Actions

In 1996, EPA stockpiled and capped mercury-contaminated tailings on a heap leach pad near the Site. EPA actions pursuant to this Action Memorandum will address Pile #2-related issues which are separate and apart from those addressed in 1996.

2. Current actions

There are no other Site-related actions being taken or proposed that are not discussed in this Action Memorandum. Anecdotal evidence suggests that some of the accumulated tailings have recently been removed from the Site for possible use as fill material in the nearby residential development area(s).

C. State and Local Authorities' role

1. State and Local Actions to Date

Analysis of Site samples collected by UDEQ/DERR confirmed the presence of mercury in the Pile #2 tailings. Subsequently, UDEQ/DERR expressed concerns about contaminants moving from Pile #2 as a result of recreational traffic across the Site, the ongoing erosion due to wind and weather, and the use of tailings as a borrow source by nearby residents. UDEQ/DERR also remarked that the increased residential development in the area would likely lead to increased recreational use of the Site by pedestrians and 'off-road' vehicles.

2. Potential for State / Local Response

No State or local resources are available to address and/or mitigate ongoing Site risks to current users or to present or future area residences.

III. Threats to Public Health or Welfare or the Environment

Conditions at this Site present an imminent and substantial endangerment to human health and the environment and meet the criteria for initiating a Removal action under 40 CFR Section 300.415 (b)(2) of the NCP. The following factors from NCP § 300.415 (b) (2) form the basis for EPA's determination of the threat and the appropriate action to be taken:

- (i) Actual or potential exposure to nearby human populations; animals, or the food chain from hazardous substances or pollutants or contaminants;

The pile of contaminated tailings at the Site is a well-documented attraction for area recreational users. As such, while in unrestricted use, direct human exposure to pile contaminants occurs. In addition, the slope of the pile(s) is steep, increasing the likelihood the aerial extent of the pile footprint will continue to increase.

- (iv) High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface that may migrate;

Analysis of samples collected at the Site in 2007 showed mercury concentrations to be as high as 97 mg/kg in some of the stockpiled Pile #2 tailings. In addition to the constant vehicular traffic across the Pile, the Pile's steep angle of repose increases the likelihood contaminated tailings will migrate off-Site when disturbed by vehicular or foot traffic, wind and/or weather.

- (v) Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released; and,

The unsecured Pile #2 tailings are located in the open, susceptible to wind- and/or precipitation-induced erosion.

- (vii) The availability of other appropriate federal or state response mechanisms to respond to the release.

There are no other federal or state response funding or mechanisms available or planned to address Site response needs.

A. Threats to Public Health or Welfare

The Site has a potential for continued human exposure to hazardous substances. There is a potential for 1) direct access to and trespassing on the Site where hazardous substances exist, 2) airborne migration of hazardous substances from the Site, and 3) migration of hazardous substances from the Site to surface water. The Site is not secure from trespassers, and is also located in an area heavily used for tourism and recreational purposes. In addition, reportedly, nearby residences are using Pile #2 as a convenient source of borrow material.

The semi-arid climate of the Leeds area is characterized by mild winters and hot summers. These weather patterns provide a mechanism whereby the hazardous substances on the Site can become airborne, migrating from the Site on dry, windy days. Also, significant precipitation events occur in the spring and the latter part of the summer when torrential thunderstorms, accompanied by strong winds, often scour the Site. These precipitation events often result in contaminated tailings washing from the Site into

down-gradient water courses, including Leeds Creek, the Virgin River (a designated fishery), and nearby un-named wetlands.

Mercury is a hazardous substance as defined by Section 101(14) of CERCLA. For elemental mercury, the most important route of absorption is through inhalation. Because of the chemical nature of elemental mercury vapor, deposition and retention in the lungs are quite high (on the order of 80 percent in humans). Chronic mercury poisoning due to intake of elemental mercury vapor is a disease of the central nervous system.

Elemental mercury (Hg^0) is rapidly oxidized in the body to inorganic mercury (Hg^{2+}), which has an affinity for the kidney. The major target organs of elemental mercury are the central nervous system and the kidney. The effects of mercury vapor exposure (Hg^0) are neuropsychiatric in nature, and described as excessive shyness, insomnia, and emotional instability with depressive moods and irritability.

B. Threats to the Environment

Saltation of metals which occurs during the drier months may cause crystallization of metal salts, and during storm events these salts may be flushed into down-gradient waters. If the high mercury concentrations on-Site reach a pond or waterway downstream from the Site, anaerobic conditions could promote the methylation of mercury to its more toxic organometallic form. Methyl mercury can accumulate in fish and bio-magnify within the food web, posing a concern for humans and wildlife in the area.

IV. Endangerment Determination

Actual or threatened release(s) of hazardous substances from this Site, if not addressed by implementing the response action described in this ACTION MEMORANDUM, present potential imminent and substantial endangerment to public health or welfare, or the environment.

V. Proposed Actions / Estimated Costs

A. Proposed Actions

Pile #2-related tailings will be consolidated within the present pile footprint and capped. Consolidation and capping will provide sufficient barrier against future human contact with mercury-contaminated material, and capping will provide sufficient barrier against future off-Site movement of contaminated material due to erosional forces (vehicle traffic, wind, and weather).

1. Proposed Action Description

Mercury-contaminated tailings and other Site-related waste material (including mercury-

contaminated sludge or waste water), and Site soils contaminated with mercury in amounts exceeding the U.S. EPA cleanup goal of 80 mg/kg, will be consolidated on location into an engineered repository, then covered with large rocks so as to eliminate future cap erosion. (The new repository will be sufficiently-sized so as to accommodate all Site-related contaminated tailings.)

2. Contribution to Remedial Performance

The proposed action will not affect or be inconsistent with any future remedial actions, should such actions be warranted.

3. Description of Alternative Technologies

Alternative technologies were not considered for work to be accomplished at this Site.

4. Engineering Evaluation/Cost Analysis (EE/CA)

An EE/CA is not required for a Time-Critical Removal Action.

5. Applicable or Relevant and Appropriate Requirements (ARARs)

This Removal action will attain, to the extent practicable, considering the exigencies of the situation, Federal ARARs or more stringent state environmental ARARs. Because this action is being conducted as a TCRA, all Federal and State ARARs have not been identified at this time, but the following is a partial list of ARARs typically applicable for this type of Removal:

FEDERAL

- a. National Historic Preservation Act (16 USC Section 470; 40 CFR Section 6.301 (b); and 36 CFR Part 800).
- b. Endangered Species Act of 1973 (16 USC Section 1531; 40 CFR Subpart C, Section 6.302 (h); and 50 CFR Part 402).
- c. Clean Water Act (33 USC Sections 1341 and 1344).
- d. Clean Water Act (40 CFR Part 230).
- e. Executive Order 11988 (Floodplain Management, 1977)(40 CFR Subpart C, Sec. 6.302 (b)).
- f. Executive Order 11990 (Wetlands Protection), (40 CFR Subpart C, Sec 6.302 [a]).
- g. Fish and Wildlife Coordination Act (16 USC Section 662); (40 CFR Subpart C, 6.302 (e)).
- h. Occupational Safety and Health Act of 1970 (29 USC Section 651) The Health & Safety Standards for Employees Engaged in Hazardous Waste Operations (50 CFR 45654).
- i. Resource Conservation and Recovery Act (RCRA), Subtitle C and Subtitle D.
- j. DOT Hazardous Material Transportation Regulations (49 CFR Parts 107, 171-177).

STATE

- a. Utah Safe Drinking Water Act (19-4-101 et seq. UCA; R309, UAC).
- b. Utah Groundwater Protection Rules (R317-6 UAC).
- c. Utah Water Pollution Control Act (19-5-101 et seq. UCA; R317-2 UAC, R317-8 UAC).
- d. Utah Air Conservation Act (19-2-101 et seq. UCA; R307 UAC).
- e. Utah Occupational Safety and Health Act (34-6-101 et seq. UCA; R614 UAC).
- f. Utah Wildlife Protection Act (23-15-6 UCA).
- g. Utah Channel Diversions (23-15-5 UCA).

6. Project Schedule

Site excavation is scheduled to begin in the fall of 2008. Duration of this Removal is expected to be approximately one month.

B. Estimated Costs

EXTRAMURAL EXPENSES

Equipment	\$ 42,745
Materials	149,885
Labor	90,375
Survey Control	4650
Inspection and Quality Control	2735
Design/As Built Drawings	<u>16,930</u>

SUB-Total Extramural Expenses \$ 307,320

Unlisted Items 10% 30,725
5% Contingency \$ 15,355

TOTAL EXTRAMURAL COSTS \$ 353,400

INTRAMURAL COSTS:

Design & Construction Oversight \$ 10,000
Sampling Activities \$ 9,000

SUB-Total Intramural Expenses \$ 19,000

TOTAL REMOVAL PROJECT CEILING \$ 372,400

Indirect Costs, 34.28%* \$ 127,600

TOTAL ESTIMATED PROJECT COSTS \$ 500,000

*Total EPA costs for this Removal action based on full-cost accounting practices that will be eligible for cost recovery are estimated to be \$500,000. Direct costs include direct extramural costs and direct intramural costs. Indirect costs are calculated based on an estimated indirect cost rate expressed as a percentage of Site-specific direct costs, consistent with the full cost accounting methodology effective October 2, 2000. These estimates do not include pre-judgment interest, do not take into account other enforcement costs, including Department of Justice costs, and may be adjusted during the course of a Removal action. The estimates are for illustrative purposes only and their use is not intended to create any rights for responsible parties. Neither the lack of a total cost estimate nor deviation of actual total costs from this estimate will affect the United States' right to cost recovery.

VI. Expected Change in Situation if Action is Delayed or Not Taken

Delayed or no action will increase public health risks and threats to the environment. Delay will allow continued access by trespassers to Site-related hazardous substances and/or their release onto adjacent properties or nearby residences. If a major storm event occurs at the Site, there is the potential for sheet flow or drainage water to carry hazardous substances down hill, onto adjacent properties or into area drainages. During dry, windy days Site-related, contaminated tailings will continue to become airborne, with subsequent deposition onto off-Site areas, residences, and/or drainages.

VII. Outstanding Policy Issues

No outstanding policy issues exist at this Site.


VIII. Enforcement

A separate addendum will provide a confidential summary of current and potential future enforcement actions.

IX. RECOMMENDATION

This decision document represents the selected Removal action for the 5M Inc. Staging Pile Site, Leeds, Washington County, Utah, developed in accordance with CERCLA as amended, and is not inconsistent with the NCP. This decision is based on the Administrative Record for the Site.

Conditions at the Site meet the NCP §300.415(b) (2) criteria for a Removal and I recommend your approval of this Time-Critical Removal Action. The total project ceiling is estimated to be \$ 500,000 and, of this, an estimated \$ 372,400 comes from the Regional removal allowance.

Approve:  Date: 12/17/08
David A Ostrander, Program Director
Preparedness, Assessment & Emergency Response

Disapprove: _____ Date: _____
David A Ostrander, Program Director
Preparedness, Assessment & Emergency Response

Attachments:

Figure 1 Site Location Maps

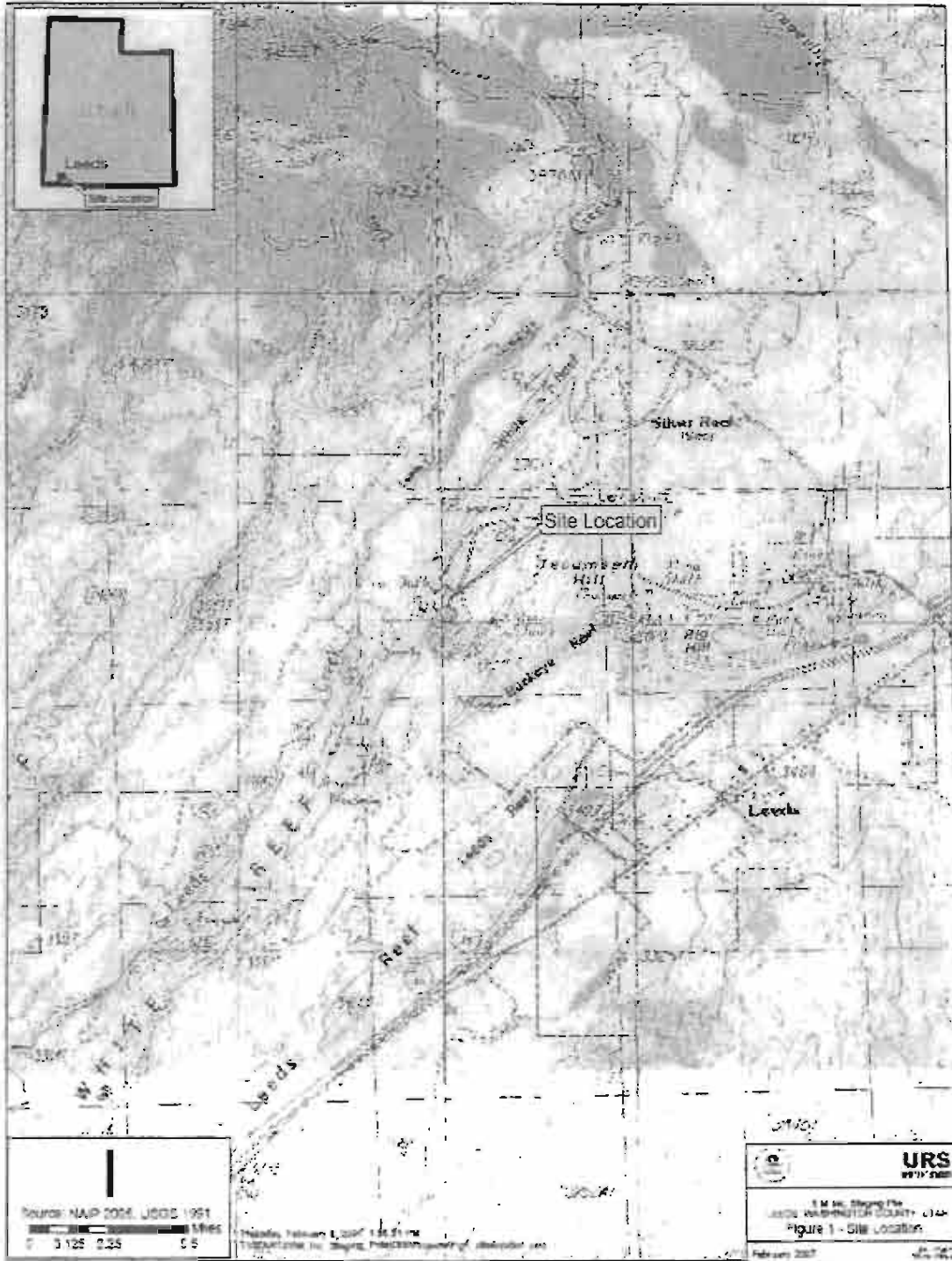


Figure 2 Leeds/Site Area Image



5M Staging Pile Repository

STATEMENT OF WORK

REQUIREMENT

Reshape and cap the existing contaminated 5M Staging Pile into an in-place repository. The existing pile is approximately 9,000 cubic yards. Approximately 3,000 cubic yards of contaminated material will be contoured in order to effectively place a geosynthetic clay liner (GCL) as a barrier cap and create an in-place repository. Approximately 40,000 square feet (4,500 sq. yards) of GCL will be required. A perimeter drain ditch will be constructed at the toe of the repository. The drain ditch will prevent surface water runoff from the surrounding areas from reaching the repository as well as collect surface water runoff from the repository. The ditch will drain to the existing low point near the southeast corner of the pile and drain through a culvert under the dirt road into the natural stream channel to the east of the repository.

COMPONENTS OF WORK

- A. Prepare repository:
 - 1. The repository shall be shaped and contoured with 2.5H:1V slopes as indicated on the drawings. The survey data utilized to create the drawings was approximated from GPS coordinates and may not be exact. Coordinates and elevations are given as a reference.
 - 2. Any areas of fill greater than 1-foot in thickness shall be compacted in 6-inch lifts to achieve 90% relative compaction as measured by a Standard Proctor test.
 - 3. Proof roll repository surface to smooth surface and remove any deleterious materials as recommended by the liner manufacturer.
 - 4. Adjust repository height, length, or width as necessary to insure perimeter drain ditch does not encroach upon existing dirt road. A clear space of 6 feet shall be maintained between the outside edge of the perimeter drain ditch and the road.

- B. Place geosynthetic clay liner:
 - 1. The liner shall be Bentomat DN GCL, or approved equal. This liner is a reinforced GCL designed for slopes steeper than 3H:1V and provides the necessary long-term stability for steeper slopes.
 - 2. Install liner according to manufacturer recommendations with required overlaps at seams, anchoring in trench at edges, and granular bentonite sealing clay placement at seams to prevent water from percolating into contaminated material.

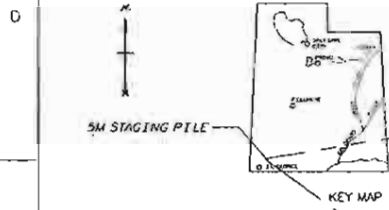
- C. Place soil and riprap cover over liner:
 - 1. Place 2-feet of soil cover on top of liner. Soil shall be free from deleterious materials and sharp objects and have a maximum particle diameter of 2-inches. Two feet of cover is required to prevent desiccation of the bentonite clay within the GCL. Approximately 3,000 cubic yards of soil cover will be required.
 - 2. An 8-oz. nonwoven polypropylene geotextile fabric shall be applied between the riprap and cover soil on side slopes of the repository and underneath the riprap

lined perimeter drain ditch. The geotextile shall be Mirafi 180N, or approved equal. Approximately 3,400 square yards of geotextile will be required on the side slopes and of the repository and drain ditches.

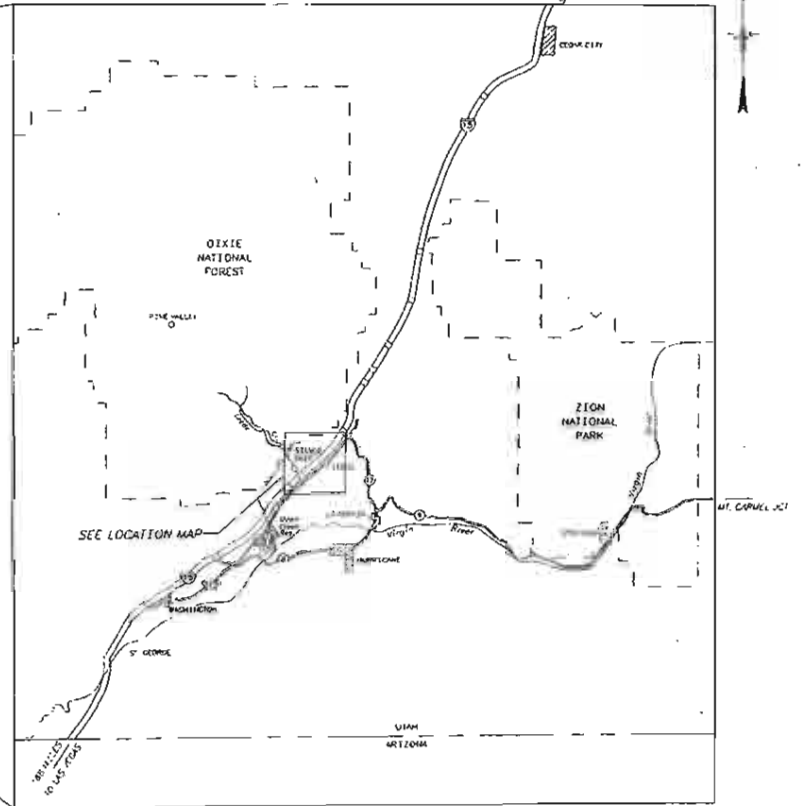
3. An 18-inch riprap layer shall be placed on top of the soil cover and geotextile to prevent erosion as well as prevent vehicles from driving on the repository. The riprap shall range in size from 12-24 inches in diameter. Approximately 3,200 cubic yards of riprap will be required to cap the repository.

D. Construct perimeter drain ditches:

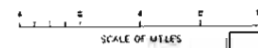
1. Perimeter drain ditches shall be constructed to the dimensions as shown on the plans at the toe of the repository around the entire length. Construction may require cut or fill to maintain a minimum 2 percent bottom slope to the culvert.
2. Perimeter drain ditches shall be lined with a 1-foot layer of riprap. The riprap shall range in size from 4-12 inches in diameter. Approximately 400 cubic yards of riprap will be required to line the ditches.
3. The ditches shall collect at a low point to be field located near the southeast corner of the repository and drain under the road through an approximately 80 foot long, 24-inch HDPE culvert. The outfall of the culvert shall be protected with a 3-foot layer of riprap, 12-24 inches in diameter.
4. Construction of perimeter drain ditch along hillside may require fill along outside edge to maintain a constant side slope for drainage into ditch from hillside to prevent ponding along edge of ditch.



LOCATION MAP



VICINITY MAP



Sheet no.	Drawing no.	Title
1	1556-418-350	Key Map, Vicinity Map, Location Map and Drawing List
2	1556-418-351	Overall Site
3	1556-418-352	Site Plan
4	1556-418-353	Pile Repository Systems

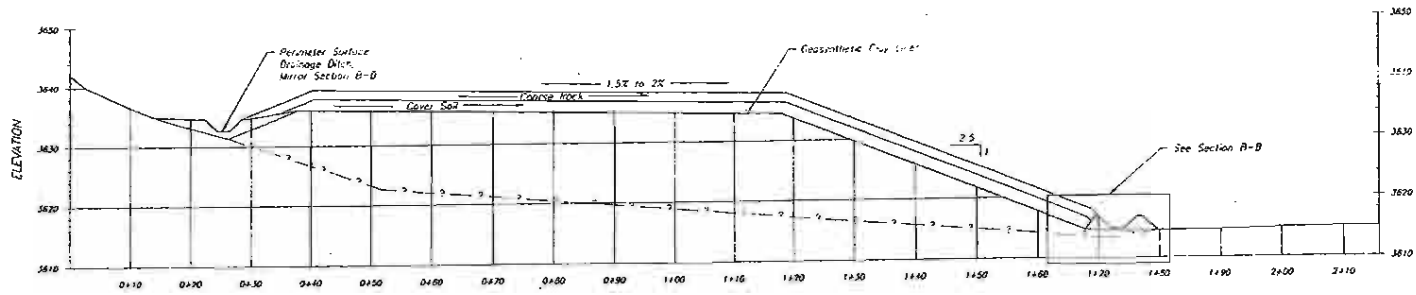
ALWAYS THINK SAFETY

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION 9

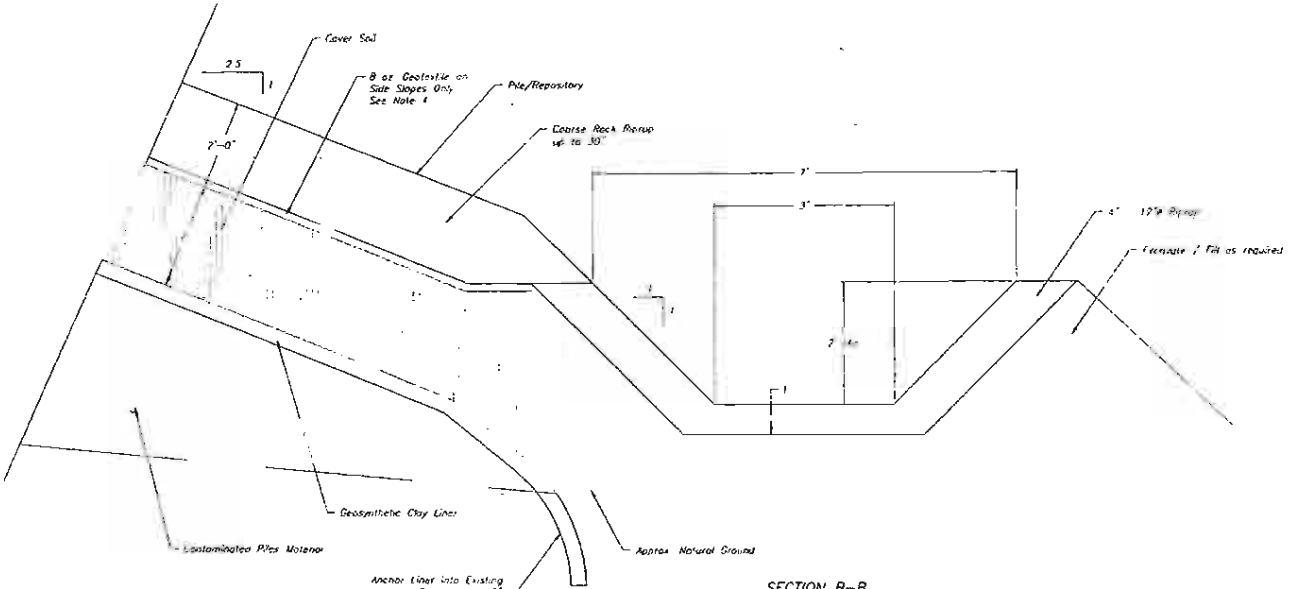
5M STAGING PILE
KEY MAP, VICINITY MAP, LOCATION MAP
AND DRAWING LIST

DESIGNED _____ CHECKED _____
DRAWN _____ TECH. ADVICE _____
APPROVED _____

PROJECT NO. 1556-418-350
SHEET 1 OF 4



SECTION A-A
PILE REPOSITORY CROSS-SECTION
SCALE = N.T.S.



SECTION B-B
REPOSITORY AND PERIMETER
SURFACE DRAIN DITCH
SCALE: N.T.S.

- NOTES:
1. Coarse rock shall be 12" - 24" diameter riprap interspersed with angular boulders.
 2. Cover soil shall be well graded topsoil/sands and gravels with a max. 2" diameter rocks.
 3. Geosynthetic clay liner shall be Geotextile Ltd. or approved equal.
 4. Geotextile shall be Marsh 180Y or approved Equal.

ALWAYS THINK SAFETY

BY DESIGN OF THE PROPOSER
BUREAU OF RECLAMATION
U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION VII

**5M STAGING PILE
PILE REPOSITORY SECTIONS**

DESIGNED	CHECKED
DRAWN	TECH APPR
APPROVED	ENV. QUAL. CONTROL
DATE: 10/11/88	SHEET 1 OF 1

1556-418-353

DATE: 10/11/88
 DRAWN: [Name]
 CHECKED: [Name]
 APPROVED: [Name]

1556-418-351

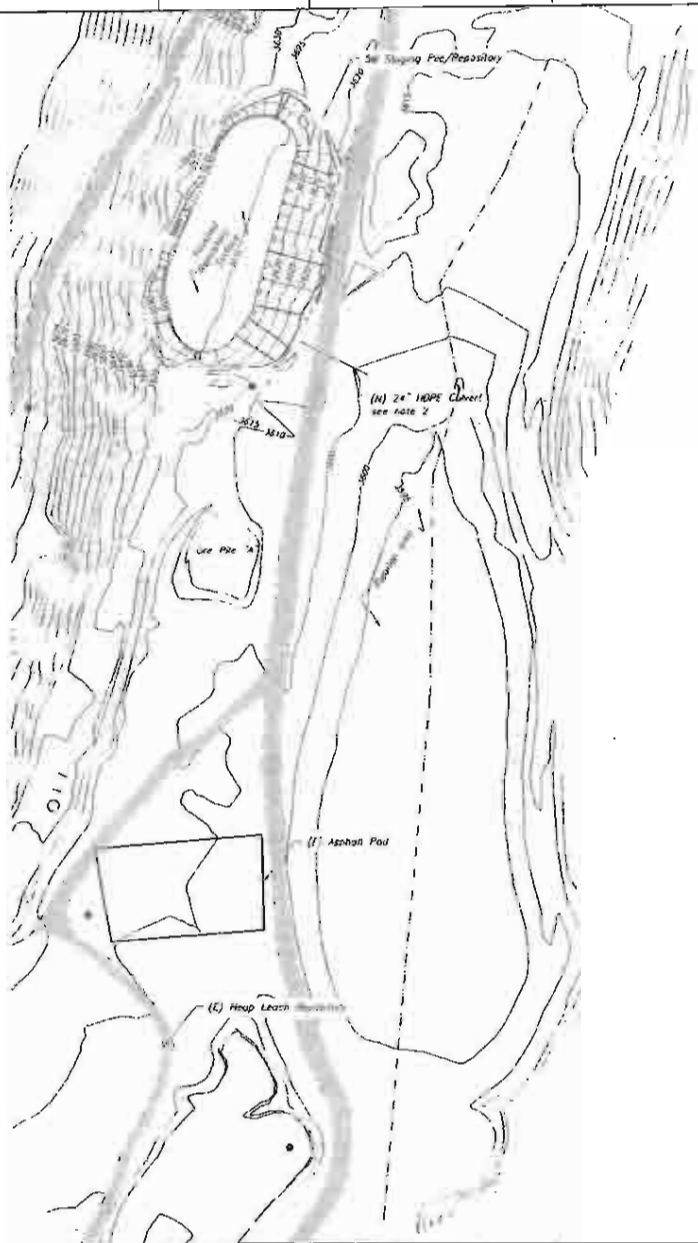
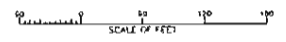
RECLAMATION

Managing Water in the West



- LEGEND**
- UTILITY POLES
 - DIRT ROAD
 - - - - - EXISTING DRAINAGE

- NOTES**
1. Approximate volume of contaminated pile is 9,000 cu yd
 2. Field locate culvert in existing water crossing at road



D

C

B

A

D

C

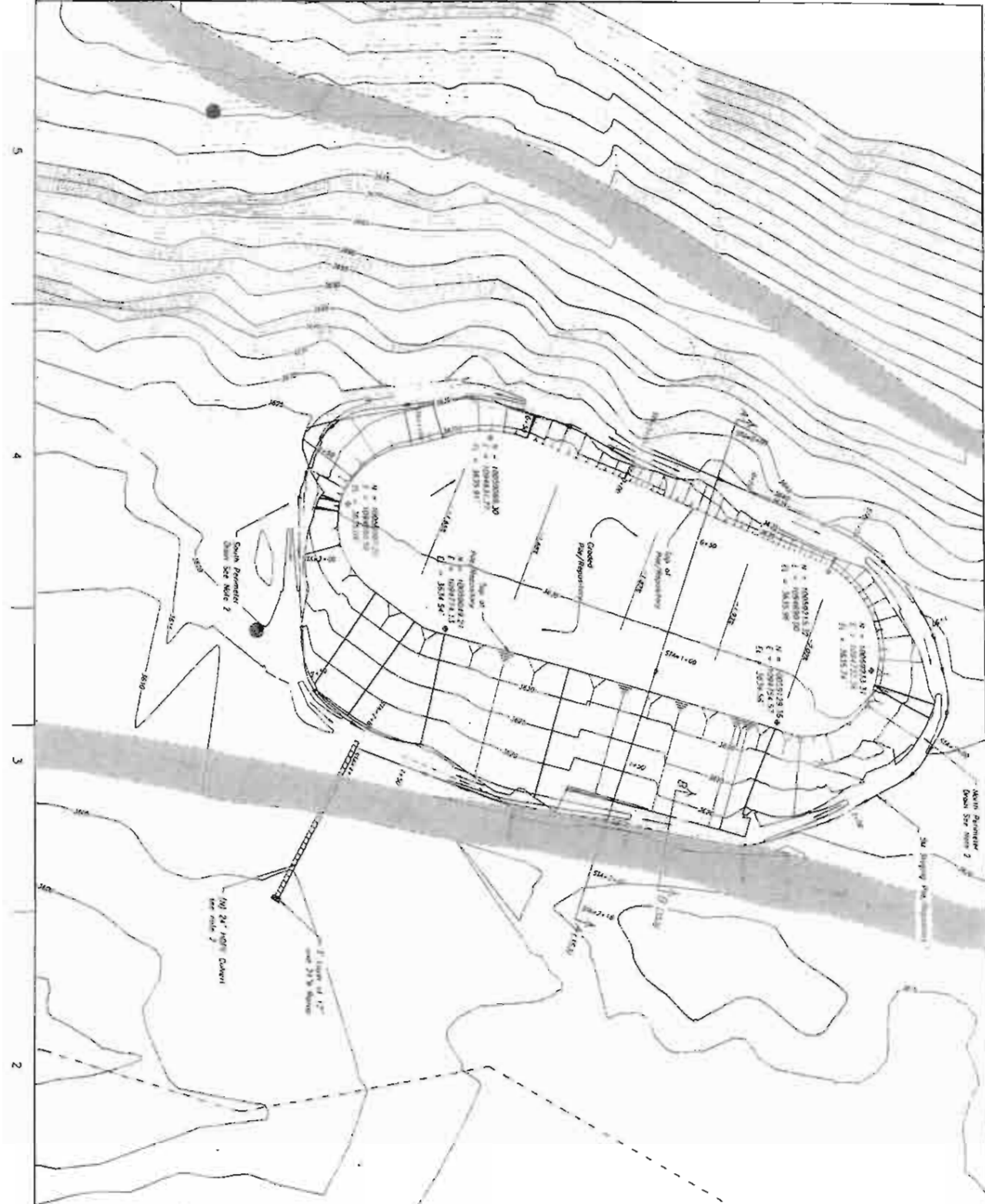
B

A

DATE AND TIME ACQUIRED:
BY: [illegible]
PROJECT NO.:

DATE ACQUIRED:
BY: [illegible]
PROJECT NO.:

ALWAYS THINK SAFETY	
<small>U.S. DEPARTMENT OF THE INTERIOR BUREAU OF RECLAMATION U.S. ENVIRONMENTAL PROTECTION AGENCY REGION 08</small>	
5M STAGING PILE OVERALL SITE	
PROJECT NO.:	CHECKED:
DATE:	TECH. APPROV.:
APPROVED:	DATE:
PROJECT NO.:	DATE:
SHEET 2 OF 4	1556-418-351



RECLAMATION

Managing Water in the West



LEGEND

- WHITE PILES
- GRAY PILES
- - - CRITICAL BOUNDARY

- NOTES**
1. Approximate 3000' by 3000' area enclosed in this plan view.
 2. Elevation shown shall be based on datum of 100' above mean sea level.
 3. Stationing shown on this plan view is for the purpose of showing stationing only.
 4. Stationing shown on this plan view is for the purpose of showing stationing only.



ALWAYS THINK SAFETY

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

SM STAGING PILE
SITE PLAN

DATE: 1/1/00

1556-418-352

DATE: 1/1/00
SCALE: 1\"/>

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SCALE: 1\"/>

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