

2011 AUG -4 PM 1:33

FILED
EPA REGION VIII
HEARING CLERK

UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION 8

IN THE MATTER OF:
US Magnesium Site
Rowley, Utah

US Magnesium LLC,

Respondent.

ADMINISTRATIVE SETTLEMENT
AGREEMENT AND ORDER ON
CONSENT FOR REMEDIAL
INVESTIGATION/FEASIBILITY STUDY

U.S. EPA Region 8

CERCLA Docket No. **CERCLA-08-2011-0013**

Proceeding Under Sections 104, 107 and
122 of the Comprehensive Environmental
Response, Compensation, and Liability Act,
as amended, 42 U.S.C. §§ 9604, 9607 and
9622.

TABLE OF CONTENTS

I.	JURISDICTION AND GENERAL PROVISIONS.....	1
II.	PARTIES BOUND	1
III.	STATEMENT OF PURPOSE	2
IV.	DEFINITIONS	3
V.	EPA FINDINGS OF FACT	5
VI.	EPA CONCLUSIONS OF LAW AND DETERMINATIONS	6
VII.	SETTLEMENT AGREEMENT AND ORDER.....	7
VIII.	DESIGNATION OF CONTRACTORS AND PROJECT COORDINATORS	7
IX.	WORK TO BE PERFORMED.....	9
X.	EPA APPROVAL OF PLANS AND OTHER SUBMISSIONS.....	12
XI.	QUALITY ASSURANCE, SAMPLING, AND ACCESS TO INFORMATION	14
XII.	SITE ACCESS AND INSTITUTIONAL CONTROLS.....	16
XIII.	COMPLIANCE WITH OTHER LAWS	17
IV.	RETENTION OF RECORD.....	17
XV.	DISPUTE RESOLUTION	18
XVI.	STIPULATED PENALTIES	18
XVII.	FORCE MAJEURE	22
XVIII.	PAYMENT OF RI/FS RESPONSE COSTS	23
XIX.	COVENANT NOT TO SUE BY EPA	24
XX.	RESERVATIONS OF RIGHTS BY EPA.....	24
XXI.	RESPONDENT'S COVENANT NOT TO SUE AND RESERVAITON OF RIGHTS	26
XXII.	OTHER CLAIMS	27
XXIII.	CONTRIBUTION PROTECTION	27
XXIV.	INDEMNIFICATION.....	28
XXV.	INSURANCE.....	28
XXVI.	FINANCIAL ASSURANCE	29
XXVII.	INTEGRATION/APPENDICES	30
XXVIII.	ADMINISTRATIVE RECORD	30
XXIX.	EFFECTIVE DATE AND SUBSEQUENT MODIFICATION.....	30
XXX.	NOTICE OF COMPLETION OF WORK.....	31

ADMINISTRATIVE SETTLEMENT AGREEMENT AND ORDER ON CONSENT
FOR REMEDIAL INVESTIGATION/FEASIBILITY STUDY
FOR THE US MAGNESIUM SITE

I. JURISDICTION AND GENERAL PROVISIONS

1. This Administrative Settlement Agreement and Order on Consent (Settlement Agreement) is entered into voluntarily by the United States Environmental Protection Agency (EPA) and US Magnesium LLC (Respondent). The Settlement Agreement concerns the preparation and performance of a remedial investigation and feasibility study (RI/FS) at the US Magnesium National Priorities List Site located on the western shore of the Great Salt Lake in Tooele County, Utah (Site) and the reimbursement for RI/FS Response Costs incurred by EPA in connection with the RI/FS.

2. This Settlement Agreement is issued under the authority vested in the President of the United States by Sections 104, 107 and 122 of the Comprehensive Environmental Response, Compensation, and Liability Act, as amended, 42 U.S.C. §§ 9604, 9607 and 9622 (CERCLA). This authority was delegated to the Administrator of EPA on January 23, 1987, by Executive Order 12580, 52 Fed. Reg. 2926 (Jan. 29, 1987), and further delegated to Regional Administrators on May 11, 1994, by EPA Delegation Nos. 14-14-C and 14-14-D. This authority was further redelegated to the Director of the Superfund Remedial Program, Office of Ecosystems Protection and Remediation.

3. In accordance with Sections 104(b)(2) and 122(j)(1) of CERCLA, 42 U.S.C. §§ 9604(b)(2) and 9622(j)(1), EPA notified the federal and state natural resource trustees of negotiations with potentially responsible parties regarding the release of hazardous substances that may have resulted in injury to the natural resources under federal and/or state trusteeship.

4. EPA and Respondent recognize that this Settlement Agreement has been negotiated in good faith and that the actions undertaken by Respondent in accordance with this Settlement Agreement do not constitute an admission of any fact, conclusion of law, determination or liability. Respondent does not admit, and expressly reserves the right to deny or controvert in any subsequent proceeding other than a proceeding to implement or enforce this Settlement Agreement, the truth, accuracy and/or validity of the findings of fact, conclusions of law and determinations in Sections V and VI of this Settlement Agreement. Respondent agrees to comply with and be bound by the terms of this Settlement Agreement and further agrees that it will not contest the basis or validity of this Settlement Agreement or its terms.

II. PARTIES BOUND

5. This Settlement Agreement applies to and is binding upon EPA and upon Respondent and its 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 not alter Respondent's responsibilities under this Settlement Agreement.

6. Respondent shall ensure that its contractors, subcontractors, and representatives receive a copy of this Settlement Agreement and agree to comply with this Settlement Agreement. Respondent shall be responsible for any noncompliance with this Settlement Agreement.

7. Respondent certifies that it is fully authorized to enter into the terms and conditions of this Settlement Agreement and to execute and legally bind Respondent to this Settlement Agreement.

III. STATEMENT OF PURPOSE

8. a. In entering into this Settlement Agreement, the objectives of EPA and Respondent are: (a) to determine the nature and extent of contamination and any threat to the public health, welfare, or the environment caused by the release or threatened release of hazardous substances, pollutants or contaminants at or from the Site, by conducting a Remedial Investigation as more specifically set forth in the Statement of Work (SOW) attached as Appendix A to this Settlement Agreement and EPA-approved Sampling and Analysis Plans (SAPs) that will be issued during the pendency of the RI/FS; (b) to identify and evaluate remedial alternatives to prevent, mitigate or otherwise respond to or remedy any release or threatened release of hazardous substances, pollutants, or contaminants at or from the Site, by conducting a Feasibility Study as more specifically set forth in the SOW and SAPs; and (c) to recover RI/FS Response Costs incurred by EPA with respect to this Settlement Agreement.

b. The Parties recognize that the Site includes the Magnesium Plant, an active, operating magnesium manufacturing facility that is the subject of an enforcement action brought by the United States on behalf of EPA against Respondent, among others, entitled "*United States v. Magnesium Corporation of America*," Case No. 2:01CV0040B, pending in the United States District Court for the District of Utah (RCRA Litigation). Further, the Utah Department of Environmental Quality Division of Air Quality issued operating permit #4500030001 to the Respondent for the Magnesium Plant (Title V Operating Permit). The Parties recognize that the purpose of this Settlement Agreement is to provide for the performance of the RI/FS and not to address current waste management practices that are the subject of the RCRA Litigation or to circumvent the Clean Air Act with respect to the Title V Operating Permit. All activities conducted pursuant to this Settlement Agreement shall not unnecessarily interfere with Respondent's on-going manufacturing operations. Notwithstanding the foregoing, 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 taking waste management practices or air emissions at the Magnesium Plant into account when evaluating remedial alternatives in the Feasibility Study or from selecting a remedy the implementation of which would impact waste management practices or address any releases of hazardous substances caused by air emissions not in compliance with the aforementioned permit.

9. The Work conducted under this Settlement Agreement is subject to approval by EPA and shall provide all appropriate and necessary information to assess Site conditions and

evaluate alternatives to the extent necessary to select a remedy that will be consistent with CERCLA and the National Oil and Hazardous Substances Pollution Contingency Plan, 40 C.F.R. Part 300 (NCP). Respondent shall conduct all Work under this Settlement Agreement in compliance with CERCLA, the NCP, and unless otherwise approved by EPA all applicable EPA guidances, policies, and procedures.

IV. DEFINITIONS

10. Unless otherwise expressly provided herein, terms used in this Settlement Agreement that 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 Settlement Agreement or in the appendices attached hereto and incorporated hereunder, the following definitions shall apply:

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

b. "Day" shall mean a calendar day. In computing any period of time under this Settlement Agreement, 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.

c. "Effective Date" shall be the effective date of this Settlement Agreement as provided in Section XXIX.

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

e. "Institutional controls" shall mean non-engineered instruments, such as administrative and/or legal controls, that help to minimize the potential for human exposure to contamination and/or protect the integrity of a remedy by limiting land and/or resource use. Examples of institutional controls include easements and covenants, zoning restrictions, special building permit requirements, and well drilling prohibitions.

f. "Interest" shall mean interest at the rate specified for interest on investments of the EPA Hazardous Substance Superfund established by 26 U.S.C. § 9507, compounded annually, in accordance with 42 U.S.C. § 9607(a). The applicable rate of interest shall be the rate in effect at the time the interest accrues. The rate of interest is subject to change on October 1 of each year.

g. "Magnesium Plant" shall mean the active magnesium manufacturing, production, and waste management operations conducted at the Site by Respondent.

h. "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.

- i. "Paragraph" shall mean a portion of this Settlement Agreement identified by an Arabic numeral.
- j. "Parties" shall mean EPA and Respondent.
- k. "RCRA" shall mean the Resource Conservation and Recovery Act, also known as the Solid Waste Disposal Act, as amended, 42 U.S.C. §§ 6901, *et seq.*
- l. "Respondent" shall mean US Magnesium LLC, a limited liability company incorporated in the State of Delaware.
- m. "RI/FS Response Costs" shall mean all costs, including, but not limited to, direct and indirect costs, that the United States will incur after the Effective Date of this Settlement Agreement in reviewing or developing plans, reports and other items pursuant to this Settlement Agreement, verifying the Work, or otherwise implementing, overseeing, or enforcing this Settlement Agreement, including but not limited to, payroll costs, contractor costs, travel costs, laboratory costs, Agency for Toxic Substances and Disease Registry (ATSDR) costs, the costs incurred pursuant to Paragraph 52 (costs and attorneys fees and any monies paid to secure access, including the amount of just compensation), Paragraph 38 (Emergency Response), and Paragraph 80 (Work Takeover).
- n. "SAPs" shall mean sampling and analysis plans approved by EPA for activities to be performed as part of the RI/FS for the Site.
- o. "Section" shall mean a portion of this Settlement Agreement identified by a Roman numeral.
- p. "Settlement Agreement" shall mean this Administrative Order on Consent, the SOW, all appendices attached hereto (listed in Section XXVII) and all documents incorporated by reference into this document including without limitation EPA-approved submissions and documents concerning the RI/FS for the Site. EPA-approved submissions (other than progress reports) are incorporated into and become a part of the Settlement Agreement upon approval by EPA. In the event of conflict between this Settlement Agreement and any appendix or other incorporated documents, this Settlement Agreement shall control.
- q. "Site" or "US Magnesium Site" shall mean the US Magnesium Superfund Site located on the southwest edge of the Great Salt Lake in Tooele County, Utah and is depicted generally on the map attached as Appendix B.
- r. "SOW" or "Statement of Work" shall mean the initial plan for development of the RI/FS for the Site, as set forth in Appendix A to this Settlement Agreement. The SOW shall be followed up during the RI/FS process with EPA-approved sampling and analysis plans (SAPs) which shall further delineate the RI/FS process. The SOW is incorporated into this Settlement Agreement and is an enforceable part of this Settlement Agreement, as are the EPA-approved SAPs and any modifications made to either the SOW or SAPs in accordance with this Settlement Agreement.

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

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

u. "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 State law.

v. "Work" shall mean all activities Respondent is required to perform under this Settlement Agreement and SOW, except those required by Section XIV (Retention of Records).

V. EPA FINDINGS OF FACT

11. The US Magnesium Site is located in Rowley, Tooele County, Utah, approximately 15 miles north of Interstate 80 and 33 miles north of Grantsville and includes the magnesium processing facility and surrounding area located on the southwest edge of the Great Salt Lake.

12. The Site includes the Magnesium Plant, an active magnesium processing facility that has been in operation since 1972. Brine from the Great Salt Lake is the raw material upon which the manufacture of magnesium is based. The Site includes a series of large evaporation ponds (known as the Stansbury Basin evaporation ponds), a concentrator pond, large waste surface impoundments, a landfill and processing waste disposal areas where smut, barium sulfate and calcium sulfate are piled. A series of at least four earthen, open air ditches convey Magnesium Plant wastes away from the process areas to an earthen open air surface impoundment. Located just east of this impoundment is an inactive surface impoundment.

13. Operations at the Site involve removing mineral-laden water from the Great Salt Lake Stansbury Basin and concentrating it in a series of solar evaporation ponds. The concentrated brine from the solar evaporation operation is treated to remove boron and sulfates then spray dried to produce an impure anhydrous magnesium chloride powder. The powder is then melted and chlorinated to convert the residual magnesium oxide into magnesium chloride, which is then treated by an electrolysis process to separate molten magnesium metal from chlorine gas. The magnesium is refined and cast as ingot products. Chlorine gas is cleaned, compressed and liquefied, then either used in the process or sold. Hydrochloric acid derived from scrubbing plant emissions is used in producing other chemicals that are used in the process or sold.

14. Hazardous substances are released into the environment from the Magnesium Plant including polychlorinated biphenyls (PCBs) with the Chemical Abstract Service (CAS) number of 1336-36-3, polychlorinated dioxins/furans and dioxin-like PCBs expressed as 2,3,7,8-tetrachlorodibenzo-p-dioxins ([2,3,7,8, TCDD] toxic equivalency quotients (TEQs) CAS 1746-

01-06), hexachlorobenzene ([HCB] CAS 118-74-1), N-nitrosodimethylamine ([NDMA] CAS 62-75-9), chlorine gas (CAS 7782-50-5), and hydrochloric acid (CAS 7647-01-0).

Hazardous substances are released from multiple sources including process-related discharge pipes, stack and fugitive air emissions, process waste conveyance ditches, waste lagoons, and sludges pumped from waste-disposal areas. Sampling conducted by the Respondent and EPA in the ditches, spoils, and waste lagoons, revealed the presence of PCBs at 75,020 micrograms/kilogram (ug/kg), dioxins/furans and dioxin-like PCBs expressed as 2,3,7,8 TCDD at a concentration of 1,100 ug/kg TEQ (EPA, 1999), HCB at a concentration of 2,100,000 ug/kg, and NDMA at a concentration of 9.5 ug/kg (MWH 2003). The presence of acid releases is evidenced by the acidic pH values that are measured in the ditches and waste lagoons that range between a pH of 1 and 2.

15. Approximately 480 people work at the Magnesium Plant and are exposed to releases of hazardous substances. Workers at nearby industrial facilities may also be exposed to contaminant releases. In addition, many species of birds, including several designated as sensitive species by the State of Utah's Division of Wildlife Resources, may be detrimentally affected by exposure to hazardous substances at the Site. Concentrations of PCBs in bird eggs were found in levels shown to cause adverse effects to bird embryos.

16. PCBs are toxic to fish, birds, and mammals and may adversely affect reproduction, development, and endocrine functions and may cause wasting syndrome, immunotoxicity, and death. High levels of exposure in humans have been associated with the development of skin lesions, such as chloracne, rashes, and patchy darkening of the skin; altered liver function; diabetes; and increased risk of cancer. In birds and mammals, exposure to hexachlorobenzene (HCB) may adversely affect reproduction as well as liver and kidney function. Adverse human health effects associated with exposure to HCB include liver or kidney disease, reproductive difficulties, and increased risk of cancer. Exposure to chlorine can result in nose, throat, and eye irritation. At higher levels, breathing chlorine gas may result in changes in breathing rate and coughing, and damage to the lungs. Hydrogen chloride is irritating and corrosive to any tissue it contacts.

17. The Magnesium Plant is subject to regulation under Subtitle C of the Resource Conservation and Recovery Act of 1976, as amended (RCRA). In addition, the US Magnesium Site was listed on the National Priorities List (NPL) pursuant to CERCLA Section 105, 42 U.S.C. § 9605, on November 4, 2009.

18. The Respondent has owned and operated the Magnesium Plant since June 2002.

VI. EPA CONCLUSIONS OF LAW AND DETERMINATIONS

Based on the Findings of Fact set forth above, EPA has determined that:

19. The US Magnesium Site is a "facility" as defined in Section 101(9) of CERCLA, 42 U.S.C. § 9601(9).

20. The contamination found at the Site, as identified in the Findings of Fact above, include "hazardous substances" as defined in Section 101(14) of CERCLA, 42 U.S.C. § 9601(14).

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

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

23. Respondent is a responsible party under Sections 104, 107 and 122 of CERCLA, 42 U.S.C. §§ 9604, 9607, and 9622. Respondent is the current "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).

24. The actions required by this Settlement Agreement are necessary to protect the public health, welfare or the environment, are in the public interest, 42 U.S.C. § 9622(a), are consistent with CERCLA and the NCP, 42 U.S.C. §§ 9604(a)(1), 9622(a), and will expedite effective remedial action and minimize litigation, 42 U.S.C. § 9622(a).

25. EPA has determined that Respondent is qualified to conduct the RI/FS within the meaning of Section 104(a) of CERCLA, 42 U.S.C. § 9604(a), and will carry out the Work properly and promptly, in accordance with Sections 104(a) and 122(a) of CERCLA, 42 U.S.C. §§ 9604(a) and 9622(a), if Respondent complies with the terms of this Settlement Agreement.

VII. SETTLEMENT AGREEMENT AND ORDER

26. Based upon the foregoing Findings of Fact and Conclusions of Law and Determinations, it is hereby Ordered and Agreed that Respondent shall comply with all provisions of this Settlement Agreement, including, but not limited to, all appendices to this Settlement Agreement and all documents incorporated by reference into this Settlement Agreement.

VIII. DESIGNATION OF CONTRACTORS AND PROJECT COORDINATORS

27. Selection of Contractors, Personnel. All Work performed under this Settlement Agreement shall be under the direction and supervision of qualified personnel. Within 30 days after the Effective Date of this Settlement Agreement, and before the Work outlined below begins, Respondent shall notify EPA in writing of the names, titles, and qualifications of the personnel, including contractors, subcontractors, consultants and laboratories to be used in carrying out such Work. With respect to any proposed contractor, Respondent shall demonstrate that the proposed contractor has a quality system which complies with ANSI/ASQC E4-1994, "Specifications and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs," (American National Standard, January 5, 1995), by submitting a copy of the proposed contractor's Quality Management Plan (QMP). The

QMP should be prepared in accordance with "EPA Requirements for Quality Management Plans (QA/R-2)," (EPA/240/B-01/002, March 2001) or equivalent documentation as determined by EPA. The qualifications of the persons undertaking the Work for Respondent shall be subject to EPA's review, for verification that such persons meet minimum technical background and experience requirements. This Settlement Agreement is contingent on Respondent's demonstration to EPA's satisfaction that Respondent is qualified to perform properly and promptly the actions set forth in this Settlement Agreement. If EPA disapproves in writing of any person's technical qualifications, Respondent shall notify EPA of the identity and qualifications of the replacements within 30 days of the written notice. If EPA subsequently disapproves of the replacement, EPA reserves the right to terminate this Settlement Agreement and to conduct a complete RI/FS, and to seek reimbursement for costs and penalties from Respondent. During the course of the RI/FS, Respondent shall notify EPA in writing of any changes or additions in the personnel used to carry out such Work, providing their names, titles, and qualifications. EPA shall have the same right to disapprove changes and additions to personnel as it has hereunder regarding the initial notification.

28. Respondent has designated as its Project Coordinator David Abranovic of ERM-West, Inc. (ERM) who shall be responsible for administration of all actions by Respondent required by this Settlement Agreement. To the greatest extent practicable, the Project Coordinator shall be present on Site or readily available during Site Work. Respondent shall have the right to change its Project Coordinator, subject to EPA's right to disapprove. Respondent shall notify EPA thirty (30) days before such a change is made. The initial notification may be made orally, but shall be promptly followed by a written notification. If EPA disapproves of the newly designated Project Coordinator, Respondent shall retain a different Project Coordinator and shall notify EPA of that person's name, address, telephone number and qualifications within ten (10) days following EPA's disapproval. Receipt by Respondent's Project Coordinator of any notice or communication from EPA relating to this Settlement Agreement shall constitute receipt by Respondent.

29. EPA has designated Ken Wangerud as its Project Coordinator and Bonita Lavelle as its back-up Project Coordinator for the Site, both of the Office of Ecosystems Protection and Remediation, Superfund Remedial Branch, Region 8. EPA will notify Respondent of a change of its designated Project Coordinators. To the extent practicable, EPA will consult with Respondent regarding any such change. Except as otherwise provided in this Settlement Agreement, all submissions required under this Settlement Agreement shall be sent electronically to wangerud.ken@epa.gov and lavelle.bonita@epa.gov along with two paper copies sent to the Project Coordinators at U.S. EPA Region 8, Mail Code EPR-SR, 1595 Wynkoop Street, Denver, Colorado 80202.

30. EPA's Project Coordinators shall have the authority lawfully vested in a Remedial Project Manager (RPM) and On-Scene Coordinator (OSC) by the NCP. In addition, EPA's Project Coordinators shall have the authority consistent with the NCP, to halt any Work required by this Settlement Agreement, and to take any necessary response action when he or she determines that conditions at the Site may present an immediate endangerment to public health or welfare or the environment. The Parties acknowledge that EPA may in its sole discretion during the term of this Settlement Agreement determine that conditions at the Site warrant a

removal action and that if EPA determines that Respondent can and will perform such removal actions promptly and properly the Parties will seek to negotiate separate settlement agreements for the performance of such removal actions. The absence of an EPA Project Coordinator from the area under study pursuant to this Settlement Agreement shall not be cause for the stoppage or delay of Work.

31. EPA shall arrange for a qualified person to assist in its oversight and review of the conduct of the RI/FS, as required by Section 104(a) of CERCLA, 42 U.S.C. Section 9604(a). Such person shall have the authority to observe Work and make inquiries in the absence of EPA, but not to modify the SOW or SAPs.

IX. WORK TO BE PERFORMED

32. Respondent shall conduct the RI/FS in accordance with the provisions of this Settlement Agreement, the SOW, EPA-approved SAPs, CERCLA, the NCP and EPA guidance, including, but not limited to the "Interim Final Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA" (OSWER Directive # 9355.3-01, October 1988 or subsequently issued guidance), "Guidance for Data Useability in Risk Assessment" (OSWER Directive #9285.7-05, October 1990 or subsequently issued guidance), and guidance referenced therein, and guidances referenced in the SOW and SAPs, as may be amended or modified by EPA. The Remedial Investigation (RI) shall consist of collecting data to characterize Site conditions, determining the nature and extent of the contamination at or from the Site, assessing risk to human health and the environment and conducting treatability testing as necessary to evaluate the potential performance and cost of the treatment technologies that are being considered. The Feasibility Study (FS) shall determine and evaluate (based on treatability testing, where appropriate) alternatives for remedial action to prevent, mitigate or otherwise respond to or remedy the release or threatened release of hazardous substances, pollutants, or contaminants at or from the Site. The alternatives evaluated must include but shall not be limited to the range of alternatives described in the NCP, and shall include remedial actions that utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable. In evaluating the alternatives, Respondent shall address the factors required to be taken into account by Section 121 of CERCLA, 42 U.S.C. § 9621, and Section 300.430(e) of the NCP, 40 C.F.R. § 300.430(e). All Work performed under this Settlement Agreement shall be in accordance with the schedules herein or established in the SOW, and in full accordance with the standards, specifications, and other requirements of the SOW and SAPs as approved by EPA, and as may be amended or modified by EPA from time to time. In accordance with the schedules established in this Settlement Agreement or in the SOW, Respondent shall submit to EPA and the State electronically copies of all plans, reports or other deliverables required under this Settlement Agreement, the SOW, and SAPs and two paper copies. All plans, reports and other deliverables will be reviewed and approved by EPA pursuant to Section X (EPA Approval of Plans and Other Submissions).

33. The SOW attached to this Settlement Agreement as Appendix A allocates between EPA and Respondent activities for the performance of the RI/FS. Respondent shall perform all of the tasks for which it has responsibility under the SOW.

34. Modification of the SOW and SAPs.

a. If at any time during the RI/FS process, Respondent identifies a need for additional data, Respondent shall submit a memorandum documenting the need for additional data to the EPA Project Coordinators within thirty (30) days of identification. EPA in its discretion will determine whether the additional data will be collected by Respondent and whether it will be incorporated into plans, reports and other deliverables.

b. In the event of unanticipated or changed circumstances at the Site, Respondent shall notify the EPA Project Coordinators by telephone within 24 hours of discovery of the unanticipated or changed circumstances. In the event that EPA determines that the immediate threat or the unanticipated or changed circumstances warrant changes in the SOW and/or any SAP, EPA shall modify or amend the SOW and/or SAPs in writing accordingly. Respondent shall perform the RI/FS Work Plan as modified or amended.

c. EPA may determine that in addition to tasks defined in the SOW, other additional Work may be necessary to accomplish the objectives of the RI/FS. Respondent agrees to perform these response actions in addition to those required by the SOW, including any approved modifications, if EPA determines in writing that such actions are necessary for a complete RI/FS.

d. Respondent shall confirm its willingness to perform the additional Work in writing to EPA within 7 days of receipt of the EPA request. If Respondent objects to any modification determined by EPA to be necessary pursuant to this Paragraph, Respondent may seek dispute resolution pursuant to Section XV (Dispute Resolution). The SOW and/or SAPs shall be modified in accordance with the final resolution of the dispute.

e. Respondent shall complete the additional Work according to the standards, specifications, and schedule set forth or approved by EPA in a written modification to the SOW and/or SAPs. EPA reserves the right to conduct the Work itself at any point, to seek reimbursement from Respondent, and/or to seek any other appropriate relief.

f. Nothing in this Paragraph shall be construed to limit EPA's authority to require performance of further response actions at the Site.

35. Off-Site Shipment of Waste Material. Respondent shall, prior to any off-site shipment of Waste Material generated as part of the RI/FS to an out-of-state waste management facility, provide written notification of such shipment of Waste Material to the appropriate state environmental official in the receiving facility's state and to EPA's Designated Project Coordinator. However, this notification requirement shall not apply to any off-site shipments when the total volume of such shipments will not exceed 10 cubic yards.

a. Respondent shall include in the written notification the following information: (1) the name and location of the facility to which the Waste Material is to be shipped; (2) the type and quantity of the Waste Material to be shipped; (3) the expected schedule for the shipment of the Waste Material; and (4) the method of transportation. Respondent shall notify the state in

which the planned receiving facility is located of major changes in the shipment plan, such as a decision to ship the Waste Material to another facility within the same state, or to a facility in another state.

b. The identity of the receiving facility and state will be determined by Respondent following the award of the contract for the remedial investigation and feasibility study. Respondent shall provide the information required by Subparagraph 35.a and 35.c as soon as practicable after the award of the contract and before the Waste Material is actually shipped.

c. Before shipping any Waste Material generated as part of the RI/FS to an off-site location, Respondent shall obtain EPA's certification that the proposed receiving facility is operating in compliance with the requirements of CERCLA Section 121(d)(3), 42 U.S.C. § 9621(d)(3), and 40 C.F.R. § 300.440. Respondent shall only send hazardous substances, pollutants, or contaminants from the Site to an off-site facility that complies with the requirements of the statutory provision and regulation cited in the preceding sentence.

36. Meetings. Respondent shall make presentations at, and participate in, meetings at the request of EPA during the initiation, conduct, and completion of the RI/FS. In addition to discussion of the technical aspects of the RI/FS, topics will include anticipated problems or new issues. Meetings will be scheduled on a regular basis at the mutual convenience of the Parties and may include telephone and video conferences.

37. Progress Reports. In addition to the plans, reports and other deliverables set forth in this Settlement Agreement, Respondent shall provide to EPA monthly progress reports by the 15th day of the following month. At a minimum, with respect to the preceding month, these progress reports shall (1) describe the actions which have been taken to comply with this Settlement Agreement during that month, (2) include all results of sampling and all other data received by Respondent unless the data have otherwise been provided to EPA, (3) describe Work planned for the next two months with schedules relating such Work to the overall project schedule for RI/FS completion, and (4) describe all problems encountered and any anticipated problems, any actual or anticipated delays, and solutions developed and implemented to address any actual or anticipated problems or delays. Progress reports shall be sent to EPA's Project Coordinators electronically along with two paper copies sent to the Project Coordinators at U.S. EPA Region 8, EPR-SR, 1595 Wynkoop Street, Denver, CO 80202.

38. Emergency Response and Notification of Releases.

a. In the event of any action or occurrence resulting from performance of the Work which causes or threatens a release of Waste Material from the Site that constitutes an emergency situation or may present an immediate threat to public health or welfare or the environment, Respondent shall immediately take all appropriate action. Respondent shall take these actions in accordance with all applicable provisions of this Settlement Agreement, 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 EPA Project Coordinator, the Regional Duty Officer, Emergency Response Unit, at (303) 293-1788, and the National Response Center at (800) 424-8802 of the

incident or Site conditions. In the event that Respondent fails to take appropriate response action as required by this Paragraph, and EPA takes such action instead, Respondent shall reimburse EPA all costs of the response action not inconsistent with the NCP pursuant to Section XVIII (Payment of RI/FS Response Costs).

b. In addition, in the event of any release of a hazardous substance from the Site caused by the Work, Respondent shall immediately notify the EPA Project Coordinators, the Regional Duty Officer, Emergency Response Unit, at (303) 293-1788, and the National Response Center at (800) 424-8802 of the incident or Site conditions. Respondent shall submit a written report to EPA within 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.*

X. EPA APPROVAL OF PLANS AND OTHER SUBMISSIONS

39. After review of any plan, report or other item that is required to be submitted for approval pursuant to this Settlement Agreement, in a notice to Respondent EPA shall: (a) approve, in whole or in part, the submission; (b) approve the submission upon specified conditions; (c) modify the submission to cure the deficiencies; (d) disapprove, in whole or in part, the submission, directing that Respondent modify the submission; or (e) any combination of the above. However, EPA shall not modify a submission without first providing Respondent at least one notice of deficiency and an opportunity to cure within twenty (20) days, except where to do so would cause serious disruption to the Work or where previous submission(s) have been disapproved due to material defects.

40. In the event of approval, approval upon conditions, or modification by EPA, pursuant to Subparagraph 39(a), (b), (c) or (e), Respondent shall proceed to take any action required by the plan, report or other deliverable, as approved or modified by EPA subject only to its right to invoke the Dispute Resolution procedures set forth in Section XV (Dispute Resolution) with respect to the modifications or conditions made by EPA. Following EPA approval or modification of a submission or portion thereof, Respondent shall not thereafter alter or amend such submission or portion thereof unless directed by EPA. In the event that EPA modifies the submission to cure the deficiencies pursuant to Subparagraph 39(c) and the submission had a material defect, EPA retains the right to seek stipulated penalties, as provided in Section XVI (Stipulated Penalties).

41. Resubmission.

a. Upon receipt of a notice of disapproval, Respondent shall, within twenty (20) days or such longer time as specified by EPA in such notice, correct the deficiencies and resubmit the plan, report, or other deliverable for approval. Any stipulated penalties applicable to the submission, as provided in Section XVI, shall accrue during the twenty (20) day period or

otherwise specified period but shall not be payable unless the resubmission is disapproved or modified due to a material defect as provided in Paragraphs 42 and 43.

b. Notwithstanding the receipt of a notice of disapproval, Respondent shall proceed to take any action required by any non-deficient portion of the submission that is not dependent upon the disapproved portion, unless otherwise directed by EPA. Implementation of any non-deficient portion of a submission shall not relieve Respondent of any liability for stipulated penalties under Section XVI (Stipulated Penalties).

c. Respondent shall not proceed further with any subsequent activities or tasks until receiving EPA approval, approval on condition or modification of the following deliverables: Draft Remedial Investigation Report, Draft Feasibility Study Report, Draft Ecological Risk Assessment Report and draft Baseline Human Health Risk Assessment Report. While awaiting EPA approval, approval on condition or modification of these deliverables, Respondent shall proceed with all other tasks and activities which may be conducted independently of these deliverables, in accordance with the schedule set forth under this Settlement Agreement.

d. For all remaining deliverables not listed above in subparagraph 41.c, Respondent shall proceed with all subsequent tasks, activities and deliverables without awaiting EPA approval on the submitted deliverable. EPA reserves the right to stop Respondent from proceeding further, either temporarily or permanently, on any task, activity or deliverable at any point during the RI/FS.

42. If EPA disapproves a resubmitted plan, report or other deliverable, or portion thereof, EPA may again direct Respondent to correct the deficiencies. EPA shall also retain the right to modify or develop the plan, report or other deliverable. Respondent shall implement any such plan, report, or deliverable as corrected, modified or developed by EPA, subject only to Respondent's right to invoke the procedures set forth in Section XV (Dispute Resolution).

43. If upon resubmission, a plan, report, or other deliverable is disapproved or modified by EPA due to a material defect, Respondent shall be deemed to have failed to submit such plan, report, or other deliverable timely and adequately unless Respondent invokes the dispute resolution procedures in accordance with Section XV (Dispute Resolution) and EPA's action is revoked or substantially modified pursuant to a Dispute Resolution decision issued by EPA or superseded by an agreement reached pursuant to that Section. The provisions of Section XV (Dispute Resolution) and Section XVI (Stipulated Penalties) shall govern the implementation of the Work and accrual and payment of any stipulated penalties during Dispute Resolution. If EPA's disapproval or modification is not otherwise revoked, substantially modified or superseded as a result of a decision or agreement reached pursuant to the Dispute Resolution process set forth in Section XV, stipulated penalties shall accrue for such violation from the date on which the initial submission was originally required, as provided in Section XVI.

44. In the event that EPA takes over some of the tasks, but not the preparation of the RI Report or the FS Report, Respondent shall incorporate and integrate information supplied by EPA into the final reports.

45. All plans, reports, and other deliverables submitted to EPA under this Settlement Agreement shall, upon approval or modification by EPA, be incorporated into and enforceable under this Settlement Agreement. In the event EPA approves or modifies a portion of a plan, report, or other deliverable submitted to EPA under this Settlement Agreement, the approved or modified portion shall be incorporated into and enforceable under this Settlement Agreement.

46. Neither failure of EPA to expressly approve or disapprove of Respondent's submissions within a specified time period, nor the absence of comments, shall be construed as approval by EPA. Whether or not EPA gives express approval for Respondent's deliverables, Respondent is responsible for preparing deliverables acceptable to EPA.

XI. QUALITY ASSURANCE, SAMPLING, AND ACCESS TO INFORMATION

47. Quality Assurance. Respondent shall assure that Work performed, samples taken and analyses conducted conform to the requirements of the SOW and SAPs, and guidances identified therein. Respondent will assure that field personnel used by Respondent are properly trained in the use of field equipment and in chain of custody procedures. Respondent shall only use laboratories which have a documented quality system that complies with ANSI/ASQC E4-1994, "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) to meet the quality system requirements. Data collected by Respondent shall meet the quality requirements of EPA's quality program as outlined at www.epa.gov/quality, (see also "Overview of the EPA Quality System for Environmental Data and Technology" EPA/240/R-02/003 November 2002). Additional specific requirements for data quality planning and implementation by Respondent are contained in the following EPA quality documents: 1) "EPA Requirements for QA Project Plans" (QA/R-5; EPA/240/B-01/003 March 2001), 2) "Guidance on Systematic Planning using the Data Quality Objectives Process" (QA/G-4; EPA/240/B-06/001 February 2006), and 3) "Data Quality Assessment: Statistical Tools for Practitioners" (QA/G-9S; EPA/240/B-06/003 February 2006). The Respondent shall also follow the "Intergovernmental Data Quality Task Force, Uniform Federal Policy (UFP) for Quality Assurance Project Plans (QAPP), Evaluating, Assessing, and Documenting Environmental Data Collection and Use Programs, Part 1: UFP-QAPP Manual" (www.epa.gov/fedfac/documents/qualityassurance.htm).

48. Sampling.

a. All results of sampling, tests, modeling or other data (including raw data) generated by Respondent, or on Respondent's behalf, pursuant to this Settlement Agreement, shall be submitted to EPA in the next monthly progress report as described in Paragraph 37 of this Settlement Agreement or otherwise be provided to EPA. EPA will make available to Respondent validated data generated by EPA unless it is exempt from disclosure by any federal or state law or regulation.

b. Respondent shall verbally notify EPA and the State at least thirty (30) days prior to conducting field events as described in the SOW or SAPs. At EPA's verbal or written request, or the request of EPA's oversight assistant, Respondent shall allow split or duplicate samples to be taken by EPA (and its authorized representatives) or the State of any samples collected in implementing this Settlement Agreement. All split samples of Respondent shall be analyzed by the methods identified in the QAPP.

49. Access to Information.

a. Respondent shall provide to EPA and the State, upon request, copies of all documents and information within its possession or control or that of its contractors or agents relating to the Work or to the implementation of this Settlement Agreement, 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. If Respondent wishes to withhold any document or information on the basis of privilege, Respondent shall do so in accordance with Subparagraph 49 (c) below. Respondent shall also make available to EPA and the State, for purposes of investigation, information gathering, or testimony, its employees, agents, or representatives with knowledge of relevant facts concerning the performance of the Work.

b. Respondent may assert business confidentiality claims covering part or all of the documents or information submitted to EPA and the State under this Settlement Agreement to the extent permitted by and in accordance with Section 104(e)(7) of CERCLA, 42 U.S.C. § 9604(e)(7), and 40 C.F.R. § 2.203(b). Documents or information determined to be confidential by EPA will be afforded the protection specified in 40 C.F.R. Part 2, Subpart B. If no claim of confidentiality accompanies documents or information when it is submitted to EPA and the State, or if EPA has notified Respondent that the documents or information are not confidential under the standards of Section 104(e)(7) of CERCLA or 40 C.F.R. Part 2, Subpart B, the public may be given access to such documents or information without further notice to Respondent. Respondent shall segregate and clearly identify all documents or information submitted under this Settlement Agreement for which Respondent asserts business confidentiality claims.

c. Respondent may assert that certain documents, records and other information are privileged under the attorney-client privilege or any other privilege recognized by federal law. If the Respondent asserts such a privilege in lieu of providing documents, it shall provide EPA and the State with the following: 1) the title of the document, record, or information; 2) the date of the document, record, or information; 3) the name and title of the author of the document, record, or information; 4) the name and title of each addressee and recipient; 5) a description of the contents of the document, record, or information; and 6) the privilege asserted by Respondent. However, no documents, reports or other information required to be created or submitted to EPA pursuant to the requirements of this Settlement Agreement shall be withheld on the grounds that they are privileged.

d. No claim of confidentiality shall be made with respect to any data, including, but not limited to, all sampling, analytical, monitoring, hydrogeologic, scientific, chemical, or

engineering data, or any other documents or information evidencing conditions at or around the Site.

50. In entering into this Settlement Agreement, Respondent waives any objections to any data gathered, generated, or evaluated by EPA, the State or Respondent in the performance or oversight of the Work that has been verified according to the quality assurance/quality control (QA/QC) procedures required by the Settlement Agreement, the SOW or any EPA-approved work plans or SAPs. If Respondent objects to any other data relating to the RI/FS, Respondent shall submit to EPA a report that specifically identifies and explains its objections, describes the acceptable uses of the data, if any, and identifies any limitations to the use of the data. The report must be submitted to EPA within 15 days of the monthly progress report containing the data.

XII. SITE ACCESS AND INSTITUTIONAL CONTROLS

51. If the Site, or any other property where access is needed to implement this Settlement Agreement, is owned or controlled by Respondent, Respondent shall, commencing on the Effective Date, provide EPA, the State, and their representatives, including contractors, with access at all reasonable times to the Site, or such other property, for the purpose of conducting any activity related to this Settlement Agreement. Respondent shall provide to EPA and its contractors work space acceptable to EPA and within Respondent's safety and security requirements to conduct activities related to this Settlement Agreement.

52. Where any action under this Settlement Agreement 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 Respondent becomes aware that such access is needed, or as otherwise specified in writing by the EPA Project Coordinator. Respondent shall 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. If Respondent cannot obtain access agreements, EPA may either (i) obtain access for Respondent or assist Respondent in gaining access, to the extent necessary to effectuate the response actions described herein, using such means as EPA deems appropriate; (ii) perform those tasks or activities with EPA contractors; or (iii) terminate the obligation under the Settlement Agreement that requires the access agreement in question. Respondent shall reimburse EPA for all costs and attorney's fees incurred by the United States in obtaining such access, in accordance with the procedures in Section XVIII (Payment of RI/FS Response Costs). If EPA performs those tasks or activities with EPA contractors, Respondent shall perform all other tasks or activities not requiring access to that property, and shall reimburse EPA for all costs incurred in performing such tasks or activities. Respondent shall integrate the results of any such tasks or activities undertaken by EPA into its plans, reports and other deliverables.

53. Notwithstanding any provision of this Settlement Agreement, EPA and the State retain all of their access authorities and rights, including enforcement authorities related thereto, under CERCLA, RCRA, and any other applicable statutes or regulations.

XIII. COMPLIANCE WITH OTHER LAWS

54. Respondent shall comply with all applicable local, state and federal laws and regulations when performing the RI/FS. No local, state, or federal permit shall be required for any portion of any action conducted entirely on-site, including studies, if the action is selected and carried out in compliance with Section 121 of CERCLA, 42 U.S.C. § 9621. Where any portion of the Work is to be conducted off-site and 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. This Settlement Agreement is not, and shall not be construed to be, a permit issued pursuant to any federal or state statute or regulation.

XIV. RETENTION OF RECORDS

55. During the pendency of this Settlement Agreement and for a minimum of 10 years after commencement of construction of any remedial action, Respondent shall preserve and retain all non-identical copies of documents, records, and other information (including documents, records, or other information in electronic form) now in its possession or control or which come into its possession or control that relate to all deliverables under this Settlement Agreement and supporting documents or the liability of any person under CERCLA with respect to the Site, regardless of any corporate retention policy to the contrary. Until 10 years after commencement of construction of any remedial action, Respondent shall also instruct its contractors and agents to preserve all documents, records, and other information of whatever kind, nature or description relating to performance of the Work.

56. At the conclusion of this document retention period, Respondent shall notify EPA at least 90 days prior to the destruction of any such documents, records or other information, and, upon request by EPA, Respondent shall deliver any such documents, records, or other information to EPA. Notwithstanding the foregoing, Respondent may assert that certain documents, records, and other information are privileged under the attorney-client privilege or any other privilege recognized by federal law. If Respondent asserts such a privilege, it shall provide EPA with the following: 1) the title of the document, record, or other information; 2) the date of the document, record, or other information; 3) the name and title of the author of the document, record, or other information; 4) the name and title of each addressee and recipient; 5) a description of the subject of the document, record, or other information; and 6) the privilege asserted by Respondent. However, no documents, records or other information required to be created or submitted pursuant to the requirements of this Settlement Agreement shall be withheld on the grounds that they are privileged.

57. Respondent hereby certifies individually that to the best of its knowledge and belief, after thorough inquiry, it has not altered, mutilated, discarded, destroyed or otherwise disposed of any records, documents or other information (other than identical copies) relating to its potential liability regarding the Site since notification of potential liability by EPA or the filing of suit against it regarding the Site and that it has fully complied with any and all EPA requests for information pursuant to Sections 104(e) and 122(e) of CERCLA, 42 U.S.C. §§ 9604(e) and 9622(e), and Section 3007 of RCRA, 42 U.S.C. § 6927.

XV. DISPUTE RESOLUTION

58. Unless otherwise expressly provided for in this Settlement Agreement, the dispute resolution procedures of this Section shall be the exclusive mechanism for resolving disputes arising under this Settlement Agreement. The Parties shall attempt to resolve any disagreements concerning this Settlement Agreement expeditiously and informally.

59. If Respondent objects to any EPA action or decision taken pursuant to this Settlement Agreement, including without limitation billings for RI/FS Response Costs, approvals in part, modifications and/or disapproval of Work, plans, reports or other items, it shall notify EPA in writing of its objection(s) within twenty (20) days of such action, unless the objection(s) has/have been resolved informally. EPA and Respondent shall have thirty (30) days from EPA's receipt of Respondent's written objection(s) to resolve the dispute (Negotiation Period). The Negotiation Period may be extended by mutual agreement of the Parties. Such extension may be agreed to verbally but must be confirmed in writing.

60. Any agreement reached by the Parties pursuant to this Section shall be in writing and shall, upon signature by the Parties, be incorporated into and become an enforceable part of this Settlement Agreement. If the Parties are unable to reach an agreement within the Negotiation Period, the Assistant Regional Administrator for the Office of Ecosystems Protection and Remediation or the Regional Administrator will issue a written decision. When feasible, Respondent shall be given an opportunity to meet with the dispute resolution decision-maker before the decision on the dispute is made. EPA's decision shall be incorporated into and become an enforceable part of this Settlement Agreement. Respondent's obligations under this Settlement Agreement shall not be tolled by submission of any objection for dispute resolution under this Section. Following resolution of the dispute, as provided by this Section, Respondent shall fulfill the requirement that was the subject of the dispute in accordance with the agreement reached or with EPA's decision, whichever occurs, and regardless of whether Respondent agrees with the decision.

XVI. STIPULATED PENALTIES

61. Respondent shall be liable to EPA for stipulated penalties in the amounts set forth in Paragraphs 62 and 63 for failure to comply with any of the requirements of this Settlement Agreement specified below unless excused under Section XVII (Force Majeure). "Compliance" by Respondent shall include completion of the Work under this Settlement Agreement or any activities contemplated under the SOW and SAPs or other plan approved under this Settlement Agreement identified below, in accordance with all applicable requirements of law, this Settlement Agreement, the SOW, and any plans or other documents approved by EPA pursuant to this Settlement Agreement and within the specified time schedules established by and approved under this Settlement Agreement.

62. Stipulated Penalty Amounts - Work.

a. Major Deliverables. Stipulated penalties shall accrue for each day of noncompliance for failure to timely submit the following deliverables or to submit such deliverables in compliance with the terms of this Settlement Agreement, the SOW, or any SAP:

Major Deliverables	Stipulated Penalty Amount
1. Draft and Final Screening Level Ecological Risk Assessment Report	\$3,000 per day for the first 14 days of noncompliance
2. Draft and Final Ecological Risk Assessment Report	\$5,000 per day for the 15 th through 30 th day of noncompliance
3. Draft and Final Baseline Human Health Risk Assessment Report	\$37,500 per day per violation lasting beyond 30 days
4. Draft and Final Remedial Investigation Report	
5. Draft and Final Feasibility Study Report	

b. Interim Deliverables. Stipulated penalties shall accrue for each day of noncompliance for failure to timely submit the following deliverables or to submit such deliverables in compliance with the terms of this Settlement Agreement, the SOW, or any SAP:

Interim Deliverables	Stipulated Penalty Amount
1. An original and any revised work plan	\$1,000 per day for the first 14 days of noncompliance
2. An original and any revised data management plan	\$2,000 per day for the 15 th through 30 th day of noncompliance
3. Summary Report for each phase of sampling	
4. An original and any revised technical memorandum	\$5,000 per day per violation lasting beyond 30 days
5. An original and any revised letter report	
6. Draft and Final Problem Formulation Document	
7. Draft and Final Treatability Studies Technical Report	

c. Other Violations. Stipulated penalties shall accrue for each day of noncompliance for the following violations.

Other Violations	Stipulated Penalty Amount
1. Failure to timely submit monthly progress reports or to submit such reports in compliance with the terms of this Settlement Agreement, the SOW, or any SAPs.	\$1,000 per day for the first 14 days of noncompliance
2. Failure to submit any report or notification required under this Settlement Agreement, the SOW or any SAPs.	\$2,000 per day for the 15 th through 30 th day of noncompliance
3. Failure to provide access to EPA or the State in accordance with this Settlement Agreement	\$5,000 per day per violation lasting beyond 30 days
4. Failure to timely submit financial assurance instrument in accordance with Paragraph 93	

63. In the event that EPA assumes performance of a portion or all of the Work pursuant to Paragraph 80 of Section XX (Reservation of Rights by EPA), Respondent shall be liable for a stipulated penalty in the amount of \$500,000.

64. All penalties shall begin to accrue on the day after the complete performance is due or the day a violation occurs, and shall continue to accrue through the final day of the correction of the noncompliance or completion of the activity. However, stipulated penalties shall not accrue: (1) with respect to a deficient submission under Section X (EPA Approval of Plans and Other Submissions), during the period, if any, beginning on the 31st day after EPA's receipt of such submission until the date that EPA notifies Respondent of any deficiency; and (2) with respect to a decision by the EPA Management Official designated in Paragraph 60 of Section XV (Dispute Resolution), during the period, if any, beginning on the 21st day after the Negotiation Period begins until the date that the EPA Management Official issues a final decision regarding such dispute. Nothing herein shall prevent the simultaneous accrual of separate penalties for separate violations of this Settlement Agreement.

65. Following EPA's determination that Respondent has failed to comply with a requirement of this Settlement Agreement, EPA may give Respondent written notification of the same and describe the noncompliance. EPA may send Respondent a written demand for the payment of the penalties. However, penalties shall accrue as provided in the preceding Paragraph regardless of whether EPA has notified Respondent of a violation.

66. All penalties accruing under this Section shall be due and payable to EPA within 30 days of Respondent's receipt from EPA of a demand for payment of the penalties, unless

Respondent invokes the dispute resolution procedures in accordance with Section XV (Dispute Resolution). Respondent shall make all payments required by this Paragraph by Electronic Funds Transfer (EFT) accompanied by a statement identifying the name and address of the party making payment, EPA Site/Spill ID number 08-PU, and the EPA docket number for this action. Respondent shall send the wire transfer payment directly to the Federal Reserve Bank in New York City with the following information:

Federal Reserve Bank of New York
ABA=021030004
Account=68010727
SWIFT address = FRNYUS33
33 Liberty Street
New York NY 10045

The Field Tag 4200 of the Fedwire message should read “ D 68010727 Environmental Protection Agency “

At the time of payment, Respondent shall send notice that payment has been made to by email to acctsreceivable.cinwd@epa.gov, and to:

Cost Recovery Program Manager
US EPA Region 8
1595 Wynkoop Street
Denver, Colorado 80202

And

Dana Anderson, NWD
EPA Cincinnati Finance Office
26 Martin Luther King Drive
Cincinnati, Ohio 45268

67. The payment of penalties shall not alter in any way Respondent’s obligation to complete performance of the Work required under this Settlement Agreement.

68. Penalties shall continue to accrue as provided in Paragraph 64 during any dispute resolution period, but need not be paid until 15 days after the dispute is resolved by agreement or by receipt of EPA’s decision.

69. If Respondent fails to pay stipulated penalties when due, EPA may institute proceedings to collect the penalties, as well as Interest. Respondent shall pay Interest on the unpaid balance, which shall begin to accrue on the date of demand made pursuant to Paragraph 65.

70. Nothing in this Settlement Agreement shall be construed as prohibiting, altering, or in any way limiting the ability of EPA to seek any other remedies or sanctions available by

virtue of Respondent's violation of this Settlement Agreement or of the statutes and regulations upon which it is based, including, but not limited to, penalties pursuant to Section 122(l) of CERCLA, 42 U.S.C. § 9622(l), and punitive damages pursuant to Section 107(c)(3) of CERCLA, 42 U.S.C. § 9607(c)(3). Provided, however, that EPA shall not seek civil penalties pursuant to Section 122(l) of CERCLA or punitive damages pursuant to Section 107(c)(3) of CERCLA for any violation for which a stipulated penalty is provided herein, except in the case of willful violation of this Settlement Agreement or in the event that EPA assumes performance of a portion or all of the Work pursuant to Section XX (Reservation of Rights by EPA), Paragraph 80. Notwithstanding any other provision of this Section, EPA may, in its unreviewable discretion, waive any portion of stipulated penalties that have accrued pursuant to this Settlement Agreement.

XVII. FORCE MAJEURE

71. Respondent agrees to perform all requirements of this Settlement Agreement within the time limits established under this Settlement Agreement, unless the performance is delayed by a *force majeure*. For purposes of this Settlement Agreement, *force majeure* is defined as any event arising from causes beyond the control of Respondent or of any entity controlled by Respondent, including but not limited to its contractors and subcontractors, which delays or prevents performance of any obligation under this Settlement Agreement despite Respondent's best efforts to fulfill the obligation. *Force majeure* does not include financial inability to complete the Work or increased cost of performance.

72. If any event occurs or has occurred that may delay the performance of any obligation under this Settlement Agreement, whether or not caused by a *force majeure* event, Respondent shall notify EPA orally within three (3) days of when Respondent first knew that the event might cause a delay. Within seven (7) days thereafter, Respondent shall provide to EPA in writing an explanation and description of the reasons for the delay; the anticipated duration of the delay; all actions taken or to be taken to prevent or minimize the delay; a schedule for implementation of any measures to be taken to prevent or mitigate the delay or the effect of the delay; Respondent's rationale for attributing such delay to a *force majeure* event if it intends to assert such a claim; and a statement as to whether, in the opinion of Respondent, such event may cause or contribute to an endangerment to public health, welfare or the environment. Failure to comply with the above requirements shall preclude Respondent from asserting any claim of *force majeure* for that event for the period of time of such failure to comply and for any additional delay caused by such failure.

73. If EPA agrees that the delay or anticipated delay is attributable to a *force majeure* event, the time for performance of the obligations under this Settlement Agreement that are affected by the *force majeure* event will be extended by EPA for such time as is necessary to complete those obligations. An extension of the time for performance of the obligations affected by the *force majeure* event shall not, of itself, extend the time for performance of any other obligation. If EPA does not agree that the delay or anticipated delay has been or will be caused by a *force majeure* event, EPA will notify Respondent in writing of its decision. If EPA agrees that the delay is attributable to a *force majeure* event, EPA will notify Respondent in writing of

the length of the extension, if any, for performance of the obligations affected by the *force majeure* event.

XVIII. PAYMENT OF RI/FS RESPONSE COSTS

74. Payment of RI/FS Response Costs.

a. Respondent shall pay EPA all RI/FS Response Costs not inconsistent with the NCP. On a periodic basis, EPA will send Respondent a standard regionally-prepared cost report, which includes direct and indirect costs incurred by EPA and its contractors. Respondent shall make all payments within 30 days of receipt of each bill requiring payment, except as otherwise provided in Paragraph 76 of this Settlement Agreement. Respondent shall make all payments required by this Paragraph by Electronic Funds Transfer (EFT) accompanied by a statement identifying the name and address of the party making payment, EPA Site/Spill ID number 08-PU, and the EPA docket number for this action. Respondent shall send the wire transfer payment directly to the Federal Reserve Bank in New York City with the following information:

Federal Reserve Bank of New York
ABA=021030004
Account=68010727
SWIFT address = FRNYUS33
33 Liberty Street
New York NY 10045

The Field Tag 4200 of the Fedwire message should read “ D 68010727 Environmental Protection Agency “

b. At the time of payment, Respondent shall send notice that payment has been made by email to acctsreceivable.cinwd@epa.gov, and to:

Cost Recovery Program Manager
US EPA Region 8
1595 Wynkoop Street
Denver, Colorado 80202

And

Dana Anderson, NWD
EPA Cincinnati Finance Office
26 Martin Luther King Drive
Cincinnati, Ohio 45268

c. The total amount to be paid by Respondent pursuant to Subparagraph 74.a. shall be deposited in the US Magnesium Special Account within the EPA Hazardous Substance Superfund to be retained and used to conduct or finance response actions at or in connection with the Site, or to be transferred by EPA to the EPA Hazardous Substance Superfund.

75. If Respondent does not pay RI/FS Response Costs within 30 days of Respondent's receipt of a bill, Respondent shall pay Interest on the unpaid balance of RI/FS Response Costs. The Interest on unpaid RI/FS Response Costs shall begin to accrue on the date of Respondent's receipt of the bill and shall continue to accrue until the date of payment. If EPA receives a partial payment, Interest shall accrue on any unpaid balance. Payments of Interest made under this Paragraph shall be in addition to such other remedies or sanctions available to the United States by virtue of Respondent's failure to make timely payments under this Section, including but not limited to, payments of stipulated penalties pursuant to Section XVI. Respondent shall make all payments required by this Paragraph in the manner described in Paragraph 74.

76. Respondent may contest payment of any RI/FS Response Costs under Paragraph 74 if it determines that EPA has made an accounting error or if it believes EPA incurred excess costs as a direct result of an EPA action that was inconsistent with the NCP. Such objection shall be made in writing within 30 days of receipt of the bill and must be sent to the EPA Project Coordinator. Any such objection shall specifically identify the contested RI/FS Response Costs and the basis for objection. In the event of an objection, Respondent shall within the 30 day period pay all uncontested RI/FS Response Costs to EPA in the manner described in Paragraph 74 and simultaneously initiate the Dispute Resolution procedures in Section XV (Dispute Resolution). Respondent shall send to the EPA Project Coordinator a copy of the transmittal letter paying the uncontested RI/FS Response Costs. If EPA prevails in the dispute, within 5 days of the resolution of the dispute, Respondent shall pay the sums due with accrued interest to EPA in the manner described in Paragraph 74. If Respondent prevails concerning any aspect of the contested costs, Respondent shall pay that portion of the costs (plus associated accrued interest) for which it did not prevail to EPA in the manner described in Paragraph 74. The dispute resolution procedures set forth in this Paragraph in conjunction with the procedures set forth in Section XV (Dispute Resolution) shall be the exclusive mechanisms for resolving disputes regarding Respondent's obligation to reimburse EPA for its RI/FS Response Costs.

XIX. COVENANT NOT TO SUE BY EPA

77. In consideration of the actions that will be performed and the payments that will be made by Respondent under the terms of this Settlement Agreement, and except as otherwise specifically provided in this Settlement Agreement, EPA covenants not to sue or to take administrative action against Respondent pursuant to Sections 106 and 107(a) of CERCLA, 42 U.S.C. §§ 9606 and 9607(a), for the Work and RI/FS Response Costs. This covenant not to sue shall take effect upon the Effective Date and is conditioned upon the complete and satisfactory performance by Respondent of its obligations under this Settlement Agreement, including, but not limited to, payment of RI/FS Response Costs pursuant to Section XVIII. This covenant not to sue extends only to Respondent and does not extend to any other person.

XX. RESERVATIONS OF RIGHTS BY EPA

78. Except as specifically provided in this Settlement Agreement, 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 Settlement Agreement, from taking other legal or equitable action as it deems appropriate and necessary, or from requiring Respondent in the future to perform additional activities pursuant to CERCLA or any other applicable law.

79. The covenant not to sue set forth in Section XIX above does not pertain to any matters other than those expressly identified therein. EPA reserves and this Settlement Agreement is without prejudice to, all rights against Respondent with respect to all other matters, including, but not limited to:

- a. claims based on a failure by Respondent to meet a requirement of this Settlement Agreement;
- b. liability for costs not included within the definition of RI/FS Response Costs;
- c. liability for performance of response action other than the Work;
- d. criminal liability;
- e. liability for damages for injury to, destruction of, or loss of natural resources, and for the costs of any natural resource damage assessments;
- f. liability arising from the past, present, or future disposal, release or threat of release of Waste Materials outside of the Site; and
- g. liability for costs incurred or to be incurred by the Agency for Toxic Substances and Disease Registry related to the Site.

80. Work Takeover. In the event EPA determines that Respondent has ceased implementation of any portion of the Work, is seriously or repeatedly deficient or late in its performance of the Work, or is implementing the Work in a manner which may cause an endangerment to human health or the environment, EPA may assume the performance of all or any portion of the Work as EPA determines necessary. Respondent may invoke the procedures set forth in Section XV (Dispute Resolution) to dispute EPA's determination that takeover of the Work is warranted under this Paragraph. Costs incurred by EPA in performing the Work pursuant to this Paragraph shall be considered RI/FS Response Costs that Respondent shall pay pursuant to Section XVIII (Payment of RI/FS Response Costs). Notwithstanding any other provision of this Settlement Agreement, EPA retains all authority and reserves all rights to take any and all response actions authorized by law.

XXI RESPONDENT'S COVENANTS NOT TO SUE AND RESERVATION OF RIGHTS

81. Respondent covenants not to sue and agrees not to assert any claims or causes of action against the United States, or its contractors or employees, with respect to the Work, RI/FS Response Costs, or this Settlement Agreement, including, but not limited to:

a. any direct or indirect claim for reimbursement from the Hazardous Substance Superfund established by 26 U.S.C. § 9507, based on Sections 106(b)(2), 107, 111, 112, or 113 of CERCLA, 42 U.S.C. §§ 9606(b)(2), 9607, 9611, 9612, or 9613, or any other provision of law;

b. any claim arising out of the Work or arising out of the response actions for which RI/FS Response Costs have or will be incurred, including any claim under the United States Constitution, the State Constitution, the Tucker Act, 28 U.S.C. § 1491, the Equal Access to Justice Act, 28 U.S.C. § 2412, as amended, or at common law; or

c. any claim against the United States pursuant to Sections 107 and 113 of CERCLA, 42 U.S.C. §§ 9607 and 9613, relating to the Work or payment of RI/FS Response Costs.

82. These covenants not to sue shall not apply in the event the United States brings a cause of action or issues an order pursuant to the reservations set forth in Paragraphs 79 (b), (c), and (e) - (g), but only to the extent that Respondent's claims arise from the same response action, response costs, or damages that the United States is seeking pursuant to the applicable reservation.

83. Nothing in this Agreement shall be deemed to constitute approval or preauthorization of a claim within the meaning of Section 111 of CERCLA, 42 U.S.C. § 9611, or 40 C.F.R. § 300.700(d).

84. Respondent expressly reserves and this Settlement Agreement is without prejudice to all rights, claims and defenses not expressly included within Respondent's covenant not to sue including without limitation the following:

a. Any record of decision issued by EPA following completion of the RI/FS;

b. Any claim of liability or responsibility to perform any response action at the Site except as provided for herein;

c. Any claim by Respondent for divisible and/or apportioned liability as among Respondent and any other potentially responsible party; and

d. Respondent reserves, and this Settlement Agreement is without prejudice to, claims against the United States, subject to the provisions of Chapter 171 of Title 28 of the United States Code, and brought pursuant to any statute other than CERCLA or RCRA and for which the waiver of sovereign immunity is found in a statute other than CERCLA or RCRA, for money damages for injury or loss of property or personal injury or death caused by the negligent

or wrongful act or omission of any employee of the United States, as that term is defined in 28 U.S.C. § 2671, while acting within the scope of his or her office or employment under circumstances where the United States, if a private person, would be liable to the claimant in accordance with the law of the place where the act or omission occurred. However, the foregoing shall not include any claim based on EPA's selection of response actions, or the oversight or approval of Settling Defendants' plans, reports, other deliverables or activities.

XXII. OTHER CLAIMS

85. By issuance of this Settlement Agreement, the United States and EPA assume no liability for injuries or damages to persons or property resulting from any acts or omissions of Respondent.

86. Except as expressly provided in Section XIX (Covenant Not to Sue by EPA), nothing in this Settlement Agreement constitutes a satisfaction of or release from any claim or cause of action against Respondent or any person not a party to this Settlement Agreement, for any liability such person may have under CERCLA, other statutes, or common law, including but not limited to any claims of the United States for costs, damages and interest under Sections 106 and 107 of CERCLA, 42 U.S.C. §§ 9606 and 9607.

87. No action or decision by EPA pursuant to this Settlement Agreement shall give rise to any right to judicial review except as set forth in Section 113(h) of CERCLA, 42 U.S.C. § 9613(h).

XXIII. CONTRIBUTION

88. Contribution Protection

a. The Parties agree that this Settlement Agreement constitutes an administrative settlement for purposes of Section 113(f)(2) of CERCLA, 42 U.S.C. § 9613(f)(2), and that Respondent is entitled, as of the Effective Date, to protection from contribution actions or claims as provided by Sections 113(f)(2) and 122(h)(4) of CERCLA, 42 U.S.C. §§ 9613(f)(2) and 9622(h)(4), for “matters addressed” in this Settlement Agreement. The “matters addressed” in this Settlement Agreement are the Work and RI/FS Response Costs.

b. The Parties agree that this Settlement Agreement constitutes an administrative settlement for purposes of Section 113(f)(3)(B) of CERCLA, 42 U.S.C. § 9613(f)(3)(B), pursuant to which Respondent has, as of the Effective Date, resolved its liability to the United States for the Work and RI/FS Response Costs.

c. Nothing in this Settlement Agreement precludes the United States or Respondent from asserting any claims, causes of action, or demands against any person not parties to this Settlement Agreement for indemnification, contribution, or cost recovery. Nothing herein diminishes the right of the United States, pursuant to Sections 113(f)(2) and (3) of CERCLA, 42 U.S.C. § 9613(f)(2)(3), to pursue any such persons to obtain additional response costs or

response action and to enter into settlements that give rise to contribution protection pursuant to Section 113(f)(2).

XXIV. INDEMNIFICATION

89. Respondent shall indemnify, save and hold harmless the United States, its officials, agents, contractors, subcontractors, employees and representatives from any and all claims or causes of action arising from, or on account of negligent or other wrongful acts or omissions of Respondent, its officers, directors, employees, agents, contractors, or subcontractors, in carrying out actions pursuant to this Settlement Agreement. In addition, Respondent agrees to pay the United States all 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 claims made against the United States based on negligent or other wrongful acts or omissions of Respondent, its officers, directors, employees, agents, contractors, subcontractors and any persons acting on their behalf or under their control, in carrying out activities pursuant to this Settlement Agreement. The United States shall not be held out as a party to any contract entered into by or on behalf of Respondent in carrying out activities pursuant to this Settlement Agreement. Neither Respondent nor any such contractor shall be considered an agent of the United States.

90. The United States shall give Respondent notice of any claim for which the United States plans to seek indemnification pursuant to this Section and shall consult with Respondent prior to settling such claim.

91. Respondent waives all claims against the United States for damages or reimbursement or for set-off of any payments made or to be made to the United States, arising from or on account of any contract, agreement, or arrangement between any one or more of Respondent and any person for performance of Work on or relating to the Site. In addition, Respondent shall indemnify and hold harmless the United States with respect to any and all claims for damages or reimbursement arising from or on account of any contract, agreement, or arrangement between Respondent and any person for performance of Work on or relating to the Site.

XXV. INSURANCE

92. At least thirty (30) days prior to commencing any On-Site Work under this Settlement Agreement, Respondent shall secure, and shall maintain for the duration of this Settlement Agreement, comprehensive general liability insurance and automobile insurance with limits of one million dollars, combined single limit, naming the EPA as an additional insured. Within the same period, Respondent shall provide EPA with certificates of such insurance. Upon EPA's request, Respondent shall also provide a copy of each insurance policy. Respondent shall submit such certificates each year on the anniversary of the Effective Date. In addition, for the duration of the Settlement Agreement, 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 Settlement Agreement. If Respondent demonstrates by

evidence satisfactory to EPA that any contractor or subcontractor maintains insurance equivalent to that described above, or insurance covering some or all of the same risks but in an equal or lesser amount, then Respondent need provide only that portion of the insurance described above which is not maintained by such contractor or subcontractor.

XXVI. FINANCIAL ASSURANCE

93. Within 60 days of the Effective Date, Respondent shall establish and maintain financial security for the benefit of EPA in the amount of \$5,000,000 in one or more of the following forms, in order to secure the full and final completion of Work by Respondent:

- a. a surety bond unconditionally guaranteeing payment and/or performance of the Work;
- b. one or more irrevocable letters of credit, payable to or at the direction of EPA, issued by financial institution(s) acceptable in all respects to EPA equaling the total estimated cost of the Work; or
- c. a trust fund administered by a trustee acceptable in all respects to EPA.

94. Any and all financial assurance instruments provided pursuant to this Section shall be in form and substance satisfactory to EPA, determined in EPA's sole discretion. In the event that EPA determines at any time that the financial assurances provided pursuant to this Section (including, without limitation, the instrument(s) evidencing such assurances) are inadequate, Respondent shall, within 30 days of receipt of notice of EPA's determination, obtain and present to EPA for approval one of the other forms of financial assurance listed in Paragraph 93, above. Respondent's inability to demonstrate financial ability to complete the Work shall in no way excuse performance of any activities required under this Settlement Agreement.

95. If, after issuance of the SAP for the first phase of the RI/FS, EPA determines, based upon a cost estimate in an itemized spread sheet, that the cost of implementing the phase one SAP is more than the amount set forth in Paragraph 93, Respondent shall within sixty days after written request by EPA increase the amount of financial assurance provided under this Section to the EPA-estimated cost of implementing the phase one SAP, provided however such increased amount will not exceed \$8,000,000. If, after the effective Date, Respondent can show that the estimated cost to complete the remaining Work has diminished below the amount set forth in Paragraph 93 of this Section or as increased hereunder, Respondent may, on any annual anniversary date of the Effective Date, or at any other time agreed to by the Parties, reduce the amount of the financial security provided under this Section to the estimated cost of the remaining Work to be performed. Respondent shall submit a proposal for such reduction to EPA, in accordance with the requirements of this Section, and may reduce the amount of the security after receiving written approval from EPA. In the event of a dispute, Respondent may seek dispute resolution pursuant to Section XV (Dispute Resolution). Respondent may reduce the amount of security in accordance with EPA's written decision resolving the dispute.

96. Respondent may change the form of financial assurance provided under this Section at any time, upon notice to and prior written approval by EPA, provided that EPA determines that the new form of assurance meets the requirements of this Section. In the event of a dispute, Respondent may change the form of the financial assurance only in accordance with the written decision resolving the dispute.

XXVII. INTEGRATION/APPENDICES

97. This Settlement Agreement and its appendices and any deliverables, technical memoranda, specifications, schedules, documents, plans, reports (other than progress reports), etc. that will be developed pursuant to this Settlement Agreement and become incorporated into and enforceable under this Settlement Agreement constitute the final, complete and exclusive agreement and understanding among the Parties with respect to the settlement embodied in this Settlement Agreement. The Parties acknowledge that there are no representations, agreements or understandings relating to the settlement other than those expressly contained in this Settlement Agreement. The following appendices are attached to and incorporated into this Settlement Agreement:

“Appendix A” is the Statement of Work.

“Appendix B is the map of the Site.

XXVIII. ADMINISTRATIVE RECORD

98. EPA will determine the contents of the administrative record file for selection of the remedial action. Respondent shall submit to EPA documents developed during the course of the RI/FS upon which selection of the response action may be based. Upon request of EPA, Respondent shall provide copies of plans, task memoranda for further action, quality assurance memoranda and audits, raw data, field notes, laboratory analytical reports and other reports. Upon request of EPA, Respondent shall additionally submit any previous studies conducted under state, local or other federal authorities relating to selection of the response action, and all communications between Respondent and state, local or other federal authorities concerning selection of the response action. At EPA’s discretion, Respondent shall establish a community information repository at or near the Site, to house one copy of the administrative record.

XXIX. EFFECTIVE DATE AND SUBSEQUENT MODIFICATION

99. This Settlement Agreement shall be effective upon the date that a fully executed copy of the Settlement Agreement is received by counsel for Respondent (Effective Date). Such copy may be transmitted electronically to counsel for Respondent.

100. This Settlement Agreement may be amended by mutual agreement of EPA and Respondent. Amendments shall be in writing and shall be effective when signed by EPA. EPA Project Coordinators do not have the authority to sign amendments to the Settlement Agreement.

101. No informal advice, guidance, suggestion, or comment by the EPA Project Coordinator or other EPA representatives regarding reports, plans, specifications, schedules, or any other writing submitted by Respondent shall relieve Respondent of its obligation to obtain any formal approval required by this Settlement Agreement, or to comply with all requirements of this Settlement Agreement, unless it is formally modified.

XXX. NOTICE OF COMPLETION OF WORK

102. When EPA determines that all Work has been fully performed in accordance with this Settlement Agreement, with the exception of any continuing obligations required by this Settlement Agreement, including but not limited to payment of RI/FS Costs or record retention, EPA will provide written notice to Respondent. If EPA determines that any such Work has not been completed in accordance with this Settlement Agreement, EPA will notify Respondent, provide a list of the deficiencies, and require that Respondent modify the SOW and SAPs if appropriate in order to correct such deficiencies, in accordance with Paragraph 34 (Modification of the SOW and SAPs). Failure by Respondent to implement the approved modified SOW or SAPs shall be a violation of this Settlement Agreement.

Agreed this 2nd day of August, 2011.

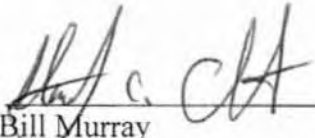
For Respondent
US Magnesium LLC

By: Michael H Legge


Title: President

It is so ORDERED AND AGREED this ___ day of August, 2011.

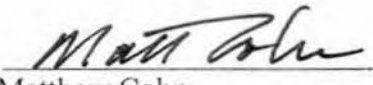
U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION 8

By:  (for)
Bill Murray
Director, Superfund Remedial Program
Office of Ecosystems Protection
and Remediation

Date: 8/4/11

By: 
Kelcey Land
Director, Technical Enforcement Program
Office of Enforcement, Compliance
and Environmental Justice

Date: 8/4/11

By: 
Matthew Cohn
Supervisory Attorney, Legal Enforcement Program
Office of Enforcement, Compliance
and Environmental Justice

Date: 8/4/11

APPENDIX A
TO
ADMINISTRATIVE SETTLEMENT AGREEMENT AND ORDER ON CONSENT FOR
REMEDIAL INVESTIGATION/FEASIBILITY STUDY
FOR
THE US MAGNESIUM SITE, ROWLEY, UTAH

STATEMENT OF WORK

**STATEMENT OF WORK
REMEDIAL INVESTIGATION/FEASIBILITY STUDY**

US Magnesium Site

1. INTRODUCTION

This Statement of Work (SOW) is part of and incorporated into the Administrative Settlement Agreement and Order on Consent for Remedial Investigation/Feasibility Study (Settlement Agreement) for the US Magnesium Superfund Site located in Rowley, Utah (Site). Unless otherwise expressly provided in this SOW, the terms used herein that are defined in CERCLA or in regulations promulgated under CERCLA shall have the meaning assigned to them in CERCLA or such regulations. Whenever terms defined in the Settlement Agreement are used in this SOW, they shall have the same meaning assigned to them in the Settlement Agreement.

The purpose of the remedial investigation/feasibility study (RI/FS) is to investigate the nature and extent of contamination within the Site study area, to assess human health and ecological risks and to develop and evaluate potential remedial alternatives for the Site.

EPA has established the initial study area boundaries for the purpose of planning and developing the preliminary scope of the RI/FS. The initial study area is the area enclosed within a 5-mile radius around the Magnesium Plant. The initial study area boundaries include waste disposal areas associated with the Magnesium Plant and the surrounding geographic area that may have been impacted by current and/or historical releases from the Magnesium Plant. EPA will determine the final Site boundaries based on the information generated during the RI/FS.

EPA and the Respondent shall to the extent practicable utilize the Triad approach in conducting the RI/FS including systematic project planning, dynamic work strategies, and real-time measurement technologies. Triad data collection methodologies may include on-site technologies and *in situ* detection techniques, modified laboratory methods, as well as incremental sampling methodology to reduce data variability and increase sample representativeness.

2. PURPOSE OF THE STATEMENT OF WORK

This SOW sets forth requirements for conducting an RI/FS for the Site. The Respondent shall conduct the RI/FS in accordance with this SOW and the requirements in the Settlement Agreement and consistent with the National Contingency Plan (40 CFR Part 300) and "Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA" (OSWER Directive 9355.3-01, October 1988) and any other guidance documents that EPA identifies as relevant to any aspect of conducting an RI/FS. A list of the primary guidance documents is included as Attachment A to this SOW.

EPA anticipates the RI/FS will be performed in multiple phases, with the number of phases to be determined by EPA. EPA will develop and issue the Sampling and Analysis Plan (SAP) for Phase I pursuant to the process set forth in section 5.1. After issuance of the final EPA-approved SAP for Phase I, and upon mutual agreement of the Parties, responsibility for preparing future SAPs may be shifted to Respondent.

The Respondent shall establish and maintain the official project database for the RI/FS in a format acceptable to EPA. The Respondent shall ensure that EPA and the State have unlimited access to the official database for the RI/FS at all times. At the end of each phase of data collection and after all data has been received from the analytical laboratories and the Respondent has completed all data validation as described in the final EPA-approved SAP, the Respondent shall provide a complete copy of the official project database to EPA in a format specified by EPA. Additionally, upon EPA approval of the final FS Report, the Respondent shall provide a complete copy of the official database to EPA in a format specified by EPA.

As specified in CERCLA Section 104(a) (1), EPA will provide oversight of the Respondent's activities throughout the RI/FS. The Respondent shall support EPA's initiation and conduct of oversight activities. EPA's determinations, approvals, and activities as provided for in the Settlement Agreement and in the SOW shall be conducted in consultation with the State as provided for by CERCLA, the National Contingency Plan, and applicable guidance.

Performance of the work described in this SOW by the Respondent and EPA's review and approval of documents and activities described in this SOW shall be performed in accordance with the procedures described in the Settlement Agreement. The Respondent shall furnish all necessary personnel, materials, and services needed or incidental to, performing the work described in this SOW, except as otherwise specified in the Settlement Agreement.

3. INITIAL PLANNING FOR THE REMEDIAL INVESTIGATION

EPA has reviewed a variety of existing reports that summarize sampling activities carried out during prior site investigations. Based on this review, EPA anticipates multiple phases of RI/FS for the Site, including:

- scoping investigations,
- remedial investigations (multiple phases) and baseline risk assessment (human health and ecological),
- feasibility study development and screening of alternatives
- treatability studies, and
- feasibility study detailed analysis of alternatives.

EPA will determine the number of phases necessary to complete the RI/FS.

3.1 Assemble Existing Information

The Respondent shall assemble all existing reports and data not previously provided to EPA that are relevant to the RI/FS including but not limited to:

- All documentation and reporting of historical operations, activities, and studies concerning the Magnesium Plant and waste areas and contaminants associated therewith,
- All environmental sampling and analysis plans,
- All environmental and other data, maps and photos, and
- All reports containing data summaries, data evaluations, or interpretations of data.

This shall include available data relating to the types and quantities of hazardous substances, pollutants, or contaminants and past and current waste management and disposal practices.

The Respondent shall provide the information to EPA and the State in accordance with the schedule contained in Section 10 of this SOW. Respondent shall submit environmental sampling and analysis data in an electronic format consistent with the project database structure to allow the data to be uploaded to the project database.

3.2 Conduct Field Visit

As a follow-up to EPA's introductory field visit in May 2010, the Respondent shall provide all support necessary to allow EPA and the State to conduct a field visit of the Site for EPA and the State in order to complete the project scoping phase and to assist in developing a conceptual understanding of sources and areas of contamination as well as potential exposure pathways and receptors. EPA will determine the scope of the field visit. The Respondent shall coordinate with EPA and the State to determine the field visit date and time. EPA may invite other interested agencies to participate in the field visit.

4. COMMUNITY RELATIONS

EPA will develop and implement community relations activities for the Site and the RI/FS. The Respondent shall, as requested by EPA, assist EPA by providing information regarding the Site history, participating in public meetings, developing graphics, placing newspaper ads developed by EPA, or distributing fact sheets developed by EPA. All Respondent-conducted community relations activities will be subject to oversight by EPA.

5. SITE CHARACTERIZATION

The overall objective of site characterization is to describe the nature and extent of contamination within the Site and to describe areas of the Site that may pose a threat to

human health or the environment. The Respondent shall perform the activities described in this section including:

- Provide standard operating procedures and other detailed information (e.g., identification of the Respondent's key project personnel) for incorporation into final EPA-approved SAPs as requested by EPA;
- Provide draft and final data management plans for incorporation into final EPA-approved SAPs;
- Implement final EPA-approved SAPs and final EPA-approved work plans;
- Document field activities;
- Perform the laboratory analysis of samples at laboratories approved by EPA and in accordance with the final EPA-approved SAPs;
- Deliver copies of the official project database to EPA in the format specified by EPA;
- Prepare summary reports for each phase of investigation;
- Prepare draft and final remedial investigation reports; and
- Comply with the milestone schedule included in each final EPA-approved SAP.

The Respondent shall notify EPA at least 30 days in advance of field work starting for each phase of the RI/FS and shall provide a monthly progress report and participate in meetings at EPA's request. The Respondent shall notify EPA in writing upon completion of field activities for each phase of the RI/FS.

5.1 Development and Implementation of Sampling and Analysis Plans

5.1.1 Scoping Meeting

The Respondent shall convene a scoping meeting with EPA and the State as the first step in the development of the SAP for each phase of the RI. The scoping meeting shall be held prior to the issuance of the draft SAP. The Respondent shall coordinate with EPA and the State to determine the date and time for the scoping meeting. The Respondent shall, in consultation with EPA, develop an agenda and supporting materials and provide these to meeting participants at least 10 days prior to the scoping meeting. After the scoping meeting, the Respondent shall submit a draft written summary of the major outcomes of the scoping meeting to EPA and the State for review and EPA approval in accordance with Section X of the Settlement Agreement and the schedule contained in Section 10 of this SOW. Each SAP will be developed based on the outcomes in the final EPA-approved written summary of the scoping meeting.

5.1.2 Development and Issuance of SAPs

Following the scoping meeting in section 5.1.1, EPA will provide copies of a draft Phase I SAP to the Respondent. Respondent shall provide written comments on the draft Phase I SAP to EPA within 30 days of document receipt. EPA will take Respondent's comments into consideration when finalizing the document but is not obligated to provide written responses. Based on the scope and the requirements for sampling and analysis

described in the draft Phase I SAP, the Respondent shall develop and submit to EPA a draft data management plan for the Phase I SAP. Additionally, the Respondent may be required to develop and submit to EPA detailed information necessary for EPA to issue the final Phase I SAP (e.g., standard operating procedures, analytical laboratory reporting limits, names and responsibilities of Respondent's key project personnel, schedule). The Respondent shall submit the required information to EPA for review and approval in accordance with Section X of the Settlement Agreement. Upon EPA approval of the data management plan and other information, EPA will incorporate it into the final Phase I SAP. EPA will issue the final Phase I SAP. The SAPs for subsequent phases of the RI/FS, if developed by EPA, will be developed following this same process. The Respondent shall fully implement all final EPA-approved SAPs.

After the issuance of the final EPA-approved SAP for Phase I, and upon mutual agreement of the Parties, responsibility for preparing future SAPs may be shifted to the Respondent. Following the scoping meeting in section 5.1.1, the Respondent shall submit such SAPs in draft form to EPA and the State for review and EPA approval in accordance with Section X of the Settlement Agreement.

It is anticipated that there will be multiple phases of the RI/FS; the number of phases required will be determined by EPA. The final EPA-approved SAP for each phase of the RI/FS will include a description of the goals for the specific phase, a list of key personnel and responsibilities, data quality objectives (DQOs), field sampling plans, quality assurance(QA) requirements, data management requirements and schedules. Each final EPA-approved SAP will describe the sampling program including the rationale, number, type, and location of samples; the sample collection, handling and custody procedures; the required field documentation and the required analytical methods. The need for expedited laboratory analysis, if any, will be tied to specific objectives developed jointly by Respondent and EPA in the SAPs taking into account the cost and benefit of expedited analysis, turn-around times, and other practical considerations. QA procedures in the SAPs will describe the measures necessary to generate data of sufficient quality to achieve the DQOs. The SAPs will specify any special training requirements and certifications, quality control requirements for field activities and analytical processes, and data validation requirements.

EPA anticipates that SAPs will be developed in a format consistent with the Uniform Federal Programs Quality Assurance Project Plan manual and EPA guidance.

EPA and the Respondent acknowledge that one goal of Phase I of the RI/FS is to characterize Site-related short term/high concentration releases to ambient air. The Phase I air sampling program will be developed with consideration given to air dispersion modeling and historical air monitoring data to guide the design of the data collection program. The Phase I air sampling program will be developed after the scoping meeting and will be tied to specific objectives developed jointly by Respondent and EPA. The need for additional air sampling beyond Phase I will be determined based on the results of the modeling and sampling conducted in Phase I.

5.1.3 Health and Safety Plan

The Respondent shall prepare a Health and Safety Plan (HSP) specific to the activities and submit it to EPA and the State in accordance with the schedule contained in Section 10 of this SOW. The Respondent is solely responsible for ensuring the health and safety of its employees and/or contractors performing any of the work described in this SOW.

5.1.4 Access

The Respondent shall obtain access to properties for sampling and shall implement each final EPA-approved SAP in accordance with the schedule included in the final EPA-approved SAP. The Respondent shall arrange for analytical data from laboratories to be reported in the format compatible with the project database and as specified in the final EPA-approved SAP. Respondent will perform all required data validation described in the final EPA-approved SAP. EPA may perform data validation in addition to the validation required to be performed by the Respondent as described in the final EPA-approved SAPs.

5.1.5 Documentation of Field and Laboratory Activities

The Respondent shall consistently document and adequately record in well maintained field logs and laboratory reports, information gathered during implementation of each final EPA-approved SAP. The method(s) of documentation shall be consistent with that specified in the final EPA-approved SAP. The Respondent shall use field logs to document observations, measurements, and events that occur during field activities. The Respondent shall ensure that laboratory reports document sample custody, analytical responsibility, analytical results, adherence to prescribed protocols, non-conformity events, corrective measures, and/or data deficiencies.

The Respondent shall maintain field reports and sample shipment records. Analytical results developed under the final EPA-approved SAPs that are included in RI reports shall be accompanied by or cross-referenced to a corresponding QA/QC report. All required QA/QC analyses shall be completed and evaluated before analytical results are included in any RI report or risk assessment report.

The Respondent shall establish an information security system to safeguard field logs, field data sheets, laboratory reports, chain of custody forms and other project records to prevent loss, damage, or alteration of project documentation. The Respondent shall submit a written description of the information security system to EPA and the State for review and EPA approval in accordance with Section X of the Settlement Agreement and the schedule contained in Section 10 of this SOW.

5.1.6 Sampling by EPA

In the event that EPA independently collects samples or other information from the Site to support the RI/FS, EPA will notify the Respondent at least 2 days prior to the sampling event and allow Respondent to obtain split samples of samples collected by EPA.

5.2 Summary Reports

For each phase of sampling to support the RI/FS, the Respondent shall prepare a summary report describing the implementation of the final EPA-approved SAP for that phase. Each summary report shall include the field documentation specified in the SAP, a description of the physical characteristics of the study area, results of all required field quality control procedures, and results of all field and laboratory audits performed by the Respondent as specified in the final EPA-approved SAP. The Respondent shall submit a summary report for each phase of sampling to EPA and the State for review in accordance with Section X of the Settlement Agreement and the schedule established in the final EPA-approved SAP for that phase.

5.3 Risk Assessment

The Respondent shall, in consultation with EPA, conduct the baseline human health risk assessment and ecological risk assessment components of the RI using data collected in accordance with final EPA-approved SAPs and using approaches that are consistent with EPA guidance (both EPA Headquarters and Region 8-specific guidance). Appendix A lists examples of specific guidance that will be considered.

5.3.1 Ecological Risk Assessment

5.3.1.1 Screening Level Ecological Risk Assessment (SLERA) Technical Memorandum

The Respondent shall prepare a draft SLERA Technical Memorandum and submit it to EPA and the State for review and EPA approval in accordance with Section X of the Settlement Agreement and the schedule contained in Section 10 of this SOW. The SLERA Technical Memorandum shall include a detailed presentation of the methods and assumptions proposed for developing the SLERA, including the equations and parameters that will be used to perform screening level exposure estimates and risk calculations.

5.3.1.2 SLERA Report

When sufficient data are available from the RI as determined by EPA, the Respondent shall prepare a draft SLERA Report and submit it to EPA and the State for review and EPA approval in accordance with Section X of the Settlement Agreement and the schedule contained in Section 10 of this SOW. The SLERA Report shall include:

- A description of the environmental setting, habitats, and preliminary contaminants of concern for ecological receptors;
- Contaminant fate and transport mechanisms;
- The mechanisms of eco-toxicity associated with contaminants and the categories of receptors that could be affected;
- Complete exposure pathways;
- Management goals;
- Selection of assessment and measurement endpoints;
- Screening level ecological effects evaluation;
- Selection of screening ecotoxicity values; and
- Screening level exposure estimates and risk calculations.

5.3.1.3 Problem Formulation

When sufficient data are available from the RI as determined by EPA, the Respondent shall prepare a draft Problem Formulation Document and submit it to EPA and the State for review and EPA approval in accordance with Section X of the Settlement Agreement and the schedule contained in Section 10 of this SOW. The Problem Formulation Document shall include:

- A conceptual site model for ecological receptors and associated risk questions;
- Complete summary of habitats;
- Description of receptors of concern;
- Contaminants of concern for ecological receptors;
- Refinement of information on contaminant fate and transport, complete exposure pathways, and ecosystems at risk;
- Management goals;
- Assessment endpoints;
- Measurement endpoints;
- Assessment strategies.

5.3.1.4 Ecological Risk Assessment Technical Memorandum

The Respondent shall prepare an Ecological Risk Assessment Technical Memorandum and submit it to EPA and the State for review and EPA approval in accordance with Section X of the Settlement Agreement and the schedule contained in Section 10 of this SOW. The Ecological Risk Assessment Technical Memorandum shall include a detailed presentation of the methods and assumptions proposed for developing the Ecological Risk Assessment, including the equations and parameters that will be used to perform exposure estimates and risk calculations.

5.3.1.5 Ecological Risk Assessment Report

After the SAP for the final phase of the RI has been fully implemented and data have been received and validated, the Respondent shall prepare and submit a draft Ecological

Risk Assessment Report to EPA and the State for review and EPA approval in accordance with Section X of the Settlement Agreement and the schedule contained in Section 10 of this SOW. The Ecological Risk Assessment Report shall include a refined conceptual site model for ecological receptors based on data collected during the RI, technical evaluation of data on existing and potential exposures and ecological effects at the Site, characterization of risk to assessment endpoints established during problem formulation, and uncertainty analysis.

5.3.2 Human Health Risk Assessment

5.3.2.1 When sufficient data are available from the RI as determined by EPA, the Respondent shall prepare a draft Baseline Human Health Risk Assessment Technical Memorandum that provides a detailed presentation of the methods and assumptions proposed for developing the Baseline Human Health Risk Assessment for the Site. The Baseline Human Health Risk Assessment Technical Memorandum shall describe the following:

- The conceptual site model for human receptors;
- The contaminants of concern for human health;
- The current and reasonably anticipated future use exposure scenarios that will be assessed in the baseline human health risk assessment;
- The exposure units for each receptor and exposure scenario;
- The exposure assessment equations and exposure parameters that will be used in the baseline human health risk assessment, including the methodology to be used to calculate the exposure point concentrations;
- The cancer and non-cancer toxicity factors that will be used in the baseline human health risk assessment.

The Baseline Human Health Risk Assessment Technical Memorandum shall be submitted to EPA and the State for review and EPA approval in accordance with Section X of the Settlement Agreement and the schedule contained in Section 10 of this SOW.

5.3.2.2 Baseline Human Health Risk Assessment Report

After the SAP for the final phase of the RI has been fully implemented and data have been received and validated, the Respondent shall prepare and submit a draft Baseline Human Health Risk Assessment Report to EPA and the State for review and EPA approval in accordance with Section X of the Settlement Agreement and the schedule contained in Section 10 of this SOW. The Baseline Human Health Risk Assessment Report shall include a refined conceptual site model for human receptors for both the current and reasonably anticipated future use exposure scenarios, exposure assessment, toxicity assessment, risk characterization, and uncertainty analysis. The Baseline Human Health Risk Assessment Report shall use data collected during the RI.

5.4 RI Report

After the SAP for the final phase of the RI has been implemented and data have been received and validated, the Respondent shall prepare and submit a draft RI report to EPA and the State for review and EPA approval in accordance with Section X of the Settlement Agreement and the schedule contained in Section 10 of this SOW. The RI report shall summarize results of field activities, the sources of contamination, the nature and extent of contamination and the fate and transport of contaminants. The Respondent shall refer to Table 3-13 in "Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA," OSWER Directive 9355.3-01, October 1988 for a suggested RI report format.

Within the RI report, the Respondent shall analyze and evaluate the data to describe the following:

- Physical, chemical, and biological characteristics of the Site,
- Contaminant source characteristics (including chemical characteristics),
- Nature and extent of contamination, and
- Contaminant fate and transport.

The RI report will include the actual and potential magnitude of releases from the sources, and horizontal and vertical spread of contamination as well as mobility and persistence of contaminants. Where modeling is appropriate, such models shall be identified in a technical memorandum submitted to EPA and the State for review and EPA approval prior to their use. All data and programming, including any proprietary programs, shall be made available to EPA and the State.

5.5 Remedial Action Objectives

EPA, in consultation with the State, will develop remedial action objectives and a list of potential State and federal ARARs based on the information provided in the final EPA-approved RI report and the final EPA-approved Baseline Human Health Risk Assessment Report and the final EPA-approved Ecological Risk Assessment Report. .

6. DEVELOPMENT AND SCREENING OF REMEDIAL ALTERNATIVES

The Respondent shall perform the following activities to complete the development and screening of remedial alternatives.

6.1 Develop General Response Actions

The Respondent shall develop general response actions that will satisfy the remedial action objectives developed by EPA in consultation with the State. General response actions may include treatment, containment, excavation, extraction, disposal, institutional controls, or a combination of these.

For each environmental medium for which remedial action objectives have been developed by EPA in consultation with the State, the Respondent shall make an initial determination of areas or volumes to which general response actions may apply, taking into account Site conditions, the nature and extent of contamination, and acceptable exposure levels and potential exposure routes identified in the remedial action objectives.

6.2 Identify and Screen Remedial Technology Types and Process Options

The Respondent shall identify and evaluate remedial technology types and process options applicable to each general response action. The term “technology types” refers to general categories of technologies. The term “process options” refers to specific processes within each technology type. Several broad technology types may be identified for each general response action and numerous technology process options may exist within each technology type.

The Respondent shall use information from the EPA-approved RI on contaminant types and concentrations and Site characteristics to screen out technologies and process options that cannot be effectively implemented at the Site. The Respondent shall document in a technical memorandum the results of the initial determination of areas or volumes for each environmental medium for which remedial action objectives have been developed, the identification of general response actions, and the initial screening of technology types and process options. The Respondent shall refer to Figures 4-4 and 4-5 in the “Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA”, OSWER Directive 9355.3-01, October 1988 for examples of figures that may be used to summarize the initial screening of technologies and process options and the evaluation of process options. The Respondent shall submit the technical memorandum that documents the tasks described in Sections 6.1 and 6.2 of this SOW to EPA and the State for review and EPA approval in accordance with Section X of the Settlement Agreement and in accordance with the schedule contained in Section 10 of this SOW.

6.3 Assemble and Document Alternatives

The Respondent shall assemble selected representative technologies into alternatives that represent a range of treatment and containment combinations that will address the remedial action objectives for the Site as developed by EPA in consultation with the State. The Respondent shall specify the reasons for eliminating alternatives during the preliminary screening process.

6.4 Alternative Screening and Selection of Alternatives for Detailed Analysis

The Respondent shall perform a screening of each remedial alternative based on effectiveness, implement-ability, and cost. As appropriate, the screening will preserve the range of treatment and containment alternatives that was initially developed. The range of remaining alternatives will include options that use treatment technologies and permanent solutions to the maximum extent practicable.

6.5 Development and Screening of Alternatives Technical Memorandum

The Respondent shall prepare a technical memorandum summarizing the work performed in the development and screening of alternatives and the results of each subtask described in this section including:

- A description of the general response actions and the areas or volumes of contaminated media to which they apply,
- A description of the remedial technology types and process options applicable to each general response action,
- The results of the initial screening of remedial technology types and process options,
- A description of the remedial alternatives,
- The results of the screening of alternatives based on effectiveness, implementability, and cost,
- A description of the alternatives that remain after screening and the action-specific State and federal ARARs for each alternative.

The Respondent shall submit the technical memorandum to EPA and the State for review and EPA approval in accordance with Section X of the Settlement Agreement and in accordance with the schedule contained in Section 10 of this SOW.

7. TREATABILITY STUDIES

EPA may require the Respondent to perform treatability studies to provide sufficient data to allow treatment alternatives to be fully developed and evaluated during the feasibility study and/or to reduce the cost and performance uncertainties for treatment alternatives to levels sufficient to allow EPA to select a remedy.

7.1 Letter Report

The Respondent shall identify a range of candidate technologies for treatability studies based on the remedial action objectives and the list of potential State and federal ARARs developed by EPA in consultation with the State and taking into consideration the final results of the development and screening of alternatives. The Respondent shall describe the candidate technologies in a letter report submitted to EPA and the State for review and EPA approval in accordance with Section X of the Settlement Agreement and the schedule contained in Section 10 of this SOW.

Within the letter report, the Respondent shall present information on performance, relative costs, removal efficiencies, operation and maintenance requirements, and implementability of the identified candidate technologies. If the existing Site data and the available information on candidate technologies are not sufficient to evaluate alternatives in the detailed analysis of alternatives, EPA may require treatability studies to be performed by the Respondent. If EPA determines that treatability studies are required, it will notify the Respondent in writing.

7.2 Treatability Studies Work Plan

Where EPA has determined that treatability studies are required and has notified the Respondent in writing, and unless the Respondent can demonstrate to EPA's satisfaction that they are not needed, the Respondent shall submit a draft treatability study work plan conforming to the DQO-SAP-QAPP requirements of the UFP-QAPP format to EPA and the State for review and EPA approval in accordance with Section X of the Settlement Agreement and the schedule contained in Section 10 of this SOW. The treatability study work plan shall describe the type of treatability study to be performed (e.g., bench scale or pilot scale) and shall include:

- a discussion of background information ;
- a list of key personnel and responsibilities;
- a description of the remedial technologies to be tested;
- DQOs for each test including measurements of performance;
- the experimental procedures for each test;
- a SAP which describes the samples to be collected, sample collection procedures, sample handling and tracking procedures, QA requirements, and analytical methods;
- a data management plan;
- a health and safety plan;
- a plan for management of waste generated during the treatability tests; and
- a schedule.

7.3 Treatability Studies Report

Upon EPA approval of the treatability study work plan, the Respondent shall implement the work plan. Following completion of the treatability study, the Respondent shall analyze and interpret the study results in a technical report submitted to EPA and the State for review and EPA approval in accordance with Section X of the Settlement Agreement and the schedule contained in the final EPA-approved treatability study work plan. In the report the Respondent shall evaluate the effectiveness, implementability, and cost of each technology and compare test results with predicted results. The Respondent shall also evaluate full-scale application of the technology including a sensitivity analysis identifying key parameters affecting full-scale operation.

8. DETAILED ANALYSIS OF ALTERNATIVES

Upon EPA approval of the Development and Screening of Alternatives Technical Memorandum described in Section 6.5 of this SOW, the Respondent shall perform a detailed analysis of the remaining remedial alternatives. The detailed analysis shall be sufficient to allow EPA to adequately compare the alternatives, select a remedial action, and demonstrate satisfaction of the CERCLA statutory remedy selection requirements (§121(b)(1)(A) of CERCLA).

The Respondent shall assess each alternative against the following seven of the nine evaluation criteria contained in the National Contingency Plan (40 CFR Part 300.430(e) (9) (iii)):

1. Overall protection of human health and the environment
2. Compliance with ARARs
3. Long term effectiveness and permanence
4. Reduction of toxicity, mobility, or volume through treatment
5. Short-term effectiveness
6. Implementability
7. Cost

The Respondent shall conduct the detailed analysis of alternatives by evaluating each alternative against the seven evaluation criteria above and then performing a comparative analysis between remedial alternatives. That is, each alternative shall be compared against the others using the evaluation criteria as a basis of comparison.

9. FEASIBILITY STUDY REPORT

The Respondent shall prepare a draft FS report that summarizes the development and screening of remedial alternatives and the detailed analysis of alternatives. Identification and selection of the preferred alternative are reserved by EPA in consultation with the State. The Respondent shall refer to the “Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA” (OSWER Directive 9355.3-01; October 1988) for an outline of the FS report and the required report content. The Respondent shall submit the draft FS report to EPA and the State for review and EPA approval in accordance with Section X of the Settlement Agreement and the schedule contained in Section 10 of this SOW.

10. SCHEDULE OF DELIVERABLES

The Respondent shall deliver documents and perform activities described in this SOW in accordance with the following schedule. The EPA Project Coordinator may extend the following delivery dates for good cause for up to sixty days. Any such extensions must be in writing.

SOW REFERENCE	DOCUMENT OR ACTIVITY	DELIVERY DATE
Section 3.1	Provide existing information	180 days after the effective date of the Settlement Agreement and thereafter, 2 weeks after becoming aware of new information
Section 3.2	Conduct field visit	Not later than 45 days after the effective date of the Settlement Agreement
Section 3.2	Notification of date of field visit	2 weeks prior to field visit

Section 4	Community relations support	As requested by EPA
Section 5.1.1	Written Summary of Outcomes of Scoping Meeting	5 days after scoping meeting is conducted
Section 5.1.2	Draft SAP prepared by Respondent by mutual agreement of the Parties	60 days after EPA approval of scoping meeting summary
Section 5.1.2	Final SAP prepared by Respondent by mutual agreement of the Parties	60 days after receiving consolidated EPA and State comments on the draft SAP
Section 5.1.3	Health and Safety Plan	2 weeks prior to field visit
Section 5.1.3	Health and Safety Plan updates necessary for SAP implementation	30 days prior to start of field work
Section 5.1.5	Written description of information security system	30 days prior to start of field work for Phase I SAP
Section 5.2	Summary Reports for each phase of sampling	In accordance with the schedule specified in EPA-approved final SAP for that phase
Section 5.3.1.1	Draft SLERA Technical Memorandum	30 days after Phase 1 data are received and validated
Section 5.3.1.1	Final SLERA Technical Memorandum	30 days after receiving consolidated EPA and State comments on the draft SLERA Technical Memorandum
Section 5.3.1.2	Draft SLERA Report	60 days after EPA notifies Respondent that sufficient data are available to support the SLERA
Section 5.3.1.2	Final SLERA Report	45 days after receiving consolidated EPA and State comments on the draft SLERA Report
Section 5.3.1.3	Draft Problem Formulation Document	90 days after EPA notifies Respondent that sufficient data are available to support the Problem Formulation, or submittal of the Final SLERA Report, whichever is longer

Section 5.3.1.3	Final Problem Formulation Document	60 days after receiving consolidated EPA and State comments on the draft Problem Formulation Document
Section 5.3.1.4	Draft Ecological Risk Assessment Technical Memorandum	45 days after EPA approval of the Final Problem Formulation Document
Section 5.3.1.4	Final Ecological Risk Assessment Technical Memorandum	30 days after receiving consolidated EPA and State comments on the draft Ecological Risk Assessment Technical Memorandum
Section 5.3.1.5	Draft Ecological Risk Assessment Report	90 days after all RI data have been received and validated, or submittal of the Final Ecological Risk Assessment Technical Memorandum, whichever is longer
Section 5.3.1.5	Final Ecological Risk Assessment Report	90 days after receiving consolidated EPA and State comments on the draft Ecological Risk Assessment Report
Section 5.3.2.1	Draft Baseline Human Health Risk Assessment Technical Memorandum	90 days after EPA notifies Respondent that sufficient data are available to support the Baseline Human Health Risk Assessment Technical Memorandum
Section 5.3.2.1	Final Baseline Human Health Risk Assessment Technical Memorandum	60 days after receiving consolidated EPA and State comments on the draft Baseline Human Health Risk Assessment Technical Memorandum
Section 5.3.2.2	Draft Baseline Human Health Risk Assessment Report	90 days after all RI data have been received and validated
Section 5.3.2.2	Final Baseline Human Health Risk Assessment Report	90 days after receiving consolidated EPA and State comments on the draft Baseline Human Health Risk Assessment Report

Section 5.4	Draft RI Report	200 days after field work is complete for final phase of sampling
Section 5.4	Final RI Report	60 days after receiving consolidated EPA and State comments on draft RI Report
Section 6.2	Draft Technical Memorandum documenting initial screening of technology types and process options	90 days after receiving final remedial action objectives from EPA
Section 6.2	Final Technical Memorandum documenting initial screening of technology types and process options	30 days after receiving consolidated EPA and State comments on draft Technical Memorandum
Section 6.5	Draft Development and Screening of Alternatives Technical Memorandum	90 days after receiving final EPA approval on Technical Memorandum documenting initial screening of technology types and process options
Section 6.5	Final Development and Screening of Alternatives Technical Memorandum	45 days after receiving consolidated EPA and State comments on draft Technical Memorandum
Section 7.1	Draft Treatability Studies Letter Report	60 days after EPA approval of the Final Development and Screening of Alternatives Technical Memorandum
Section 7.1	Final Treatability Studies Letter Report	60 days after receiving consolidated EPA and State comments on draft Letter Report
Section 7.2	Draft Treatability Studies Work Plan	60 days after receiving notice from EPA that treatability studies are required
Section 7.2	Final Treatability Studies Work Plan	30 days after receiving consolidated EPA and State comments on draft Work Plan
Section 7.3	Draft Treatability Studies Technical Report	As specified in EPA-approved final Treatability Studies Work Plan

Section 7.3	Final Treatability Studies Technical Report	45 days after receiving consolidated EPA and State comments on draft Technical Report
Section 9	Draft FS Report	90 days after EPA approval of final Development and Screening of Alternatives Technical Memorandum or final Treatability Studies Technical Report, whichever is later
Section 9	Final FS Report	60 days after receiving consolidated EPA and State comments on draft FS report

ATTACHMENT A

Examples of Guidance Documents

Conducting RI/FS under CERCLA

Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA. OSWER Directive 9355.3-01, October 1988.

Guide to Developing and Documenting Cost Estimates during the Feasibility Study. EPA 540-R-D0-002, OSWER No. 9355.0-75.

CERCLA Compliance with Other Laws Manual: Part I. Interim Final. EPA 540/G - 89/006, OSWER No. 9234.1-01.

CERCLA Compliance with Other Laws Manual: CERCLA Compliance with the CWA and SDWA. OSWER No. 9234.2-06/FS.

Technical and Regulatory Guidance for the Triad Approach: A New Paradigm for Environmental Project Management. The Interstate Technology & Regulatory Council Sampling, Characterization and Monitoring Team, December 2003.

Guide to Management of Investigation- Derived Wastes. Office of Solid Waste and Emergency Response Publication 9345.3-03FS, January 1992.

Data Quality Objectives

Guidance for Data Usability in Risk Assessment. Part A. Publication 9285.7-09A. PB92-963356. April, 1992.

Uniform Federal Policy for Implementing Quality Systems. EPA-505-F-03-001, March 2005, or subsequently issued guidance.

Uniform Federal Policy for Quality Assurance Project Plans, Parts 1, 2, and 3. EPA-505-B-04-900A, B, and C, OSWER Guidance 9272.0-20, December 2005.

Requirements for Quality Assurance Project Plans (QA/R-5). EPA/240/B-01/003, March 2001, Reissued May 2006.

Requirements for Quality Management Plans (QA/R-2). EPA/240/B-01/002, March 2001, Reissued May 2006.

Guidance for Quality Assurance Project Plans (QA/G-5). EPA/240/R-02/009, December 2002.

Risk Assessment Guidance for Superfund (RAGS) and Ecological Risk Assessment

RAGS Volume I - Human Health Evaluation Manual - Part A, Interim Final. Office of Emergency and Remedial Response, Washington, DC. USEPA/540/1-89/002. December 1989.

RAGS Volume I - Part A, Community Involvement in Superfund Risk Assessments. EPA-540-R-98-042. March 1999.

RAGS Volume I - Part D, Standardized Planning, Reporting, and Review of Superfund Risk Assessments. Publication 9285.7-47. December 2001.

RAGS Volume I - Part E, Supplemental Guidance for Dermal Risk Assessment, Final. EPA/540/R/99/005. July 2004.

RAGS Volume I - Part F, Supplemental Guidance for Inhalation Risk Assessment. EPA-540-R-070-002. 2009.

RAGS Volume I, Supplemental Guidance 'Standard Default Exposure Factors'. OSWER Directive 9285.3-03. March 1991.

RAGS Volume III - Part A, Process for Conducting Probabilistic Risk Assessment. EPA/540/R-02/002. December 2001.

Region 8 Superfund Technical Guidance: Model Conceptual Site Model for RI/FS Baseline Risk Assessments of Human Health. Hazardous Waste Management Division, Superfund Management Branch, Denver, CO. RA-05. May 1995.

Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments. Interim Final. Solid Waste and Emergency Response, EPA-540-R-97-006. 1997.

Guidelines for Ecological Risk Assessment. EPA/630/R-95/002F. Risk Assessment Forum. 1998.

Ecological Risk Assessment and Risk Management Principles for Superfund Sites. OSWER Directive 9285.7-28P. 1999.

Generic Ecological Assessment Endpoints (GAEs) for Ecological Risk Assessment. EPA/630/P-02/004F. October 2003.

ECO Update. Intermittent Bulletin Series. Publication 9345. Office of Solid Waste and Emergency Response. 1991-2008.

Identifying Chemicals of Potential Concern

Regional Screening Levels for Chemical Contaminants at Superfund Sites. Current posting to <http://www.epa.gov/region09/superfund/prg/>.

Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. Office of Solid Waste and Emergency Response. OSWER 9355.4-24. December 2002.

Guidance for Developing Ecological Soil Screening Levels. Office of Solid Waste and Emergency Response. 2005.

Region 8 Superfund Technical Guidance: Evaluating and Identifying Contaminants of Concern for Human Health. Hazardous Waste Management Division, Superfund Management Branch, Denver, CO. RA-03. September 1994.

The Role of Screening-Level Risk Assessments and Refining Contaminants of Concern in Baseline Ecological Risk Assessments. EPA 540/F-01/014. June 2001.

Background Screening Analysis

Memorandum on Role of Background in the CERCLA Cleanup Program, from USEPA Office of Emergency and Remedial Response Director Michael B. Cook to Superfund National Policy Managers and all Regions. OSWER 9285.6-07P. May 2002.

Guidance for Comparing Background and Chemical Concentrations in Soil for CERCLA Sites. Office of Emergency and Remedial Response. EPA 540-R-01-003. September 2002.

Performance of Statistical Tests for Site Versus Background Soil Comparisons When Distributional Assumptions are Not Met. Technology Support Center Issue. EPA/600/R-07/020. March 2007.

Support Center for Regulatory Atmospheric Modeling – Alternative Models. Accessed at USEPA Technology Transfer Network. July 2011.
http://www.epa.gov/ttn/scram/dispersion_alt.htm#altmod

Sampling and Exposure Assessment

Guidelines for Exposure Assessment. Federal Register, 57(104):22888-22938. May 1992.

Exposure Factors Handbook. National Center for Environmental Assessment and Office of Research and Development. July 2009.

Child-Specific Exposure Factors Handbook. Interim Report. National Center for Environmental Assessment, Office of Research and Development. EPA/600/R/06/096A. September 2006 (and updates).

Wildlife Exposure Factors Handbook. Volume I and II. Office of Research and Development. EPA/600/R-93/187. December 1993.

Preparation of Soil Sampling Protocols: Sampling Techniques and Strategies. Office of Research and Development, EPA/600/R-92/128. July 1992.

ProUCL Version 4.1.00. Technical Guide (Draft). Statistical Software for Environmental Applications for Data Sets with and without Nondetect Observations. Office of Research and Development. EPA/600/R-07/041. May 2010. Accompanies most recent software release – ProUCL version 4.1.01, July 12, 2011.

Guidance for Geospatial Data Quality Assurance Project Plans. Office of Environmental Information, EPA/240/R_03/003. 2003.

Developing Spatially Interpolated Surfaces and Estimating Uncertainty. Office of Air and Radiation, Office of Air Quality Planning and Standards, Research Triangle Park, NC. EPA-454/R-04-004. November 2004.

Compendium of Methods for the Determination of Inorganic Compounds in Ambient Air. Office of Research and Development, Center for Environmental Research Information, EPA/625/SR-96/10a. June 1999.

Toxicity Assessment

Memorandum on Human Health Toxicity Values in Superfund Risk Assessments, from Michael B. Cook, Director, Office of Superfund Remediation and Technology Innovation to Superfund Remediation Policy Managers, Regions 1 – 10. OSWER Directive 9285.7-53. December 2003.

Integrated Risk Information System. USEPA on-line database:
<http://www.epa.gov/iris/index.html>.

Framework for Application of the Toxicity Equivalence Methodology for Polychlorinated Dioxins, Furans, and Biphenyls in Ecological Risk Assessment. Office of the Science Advisor, Risk Assessment Forum. EPA 100/R-08/004. June 2008.

Risk Characterization

Risk Characterization Handbook. Science Policy Council, Office of Research and Development. EPA 100-B-00-002. 2000.

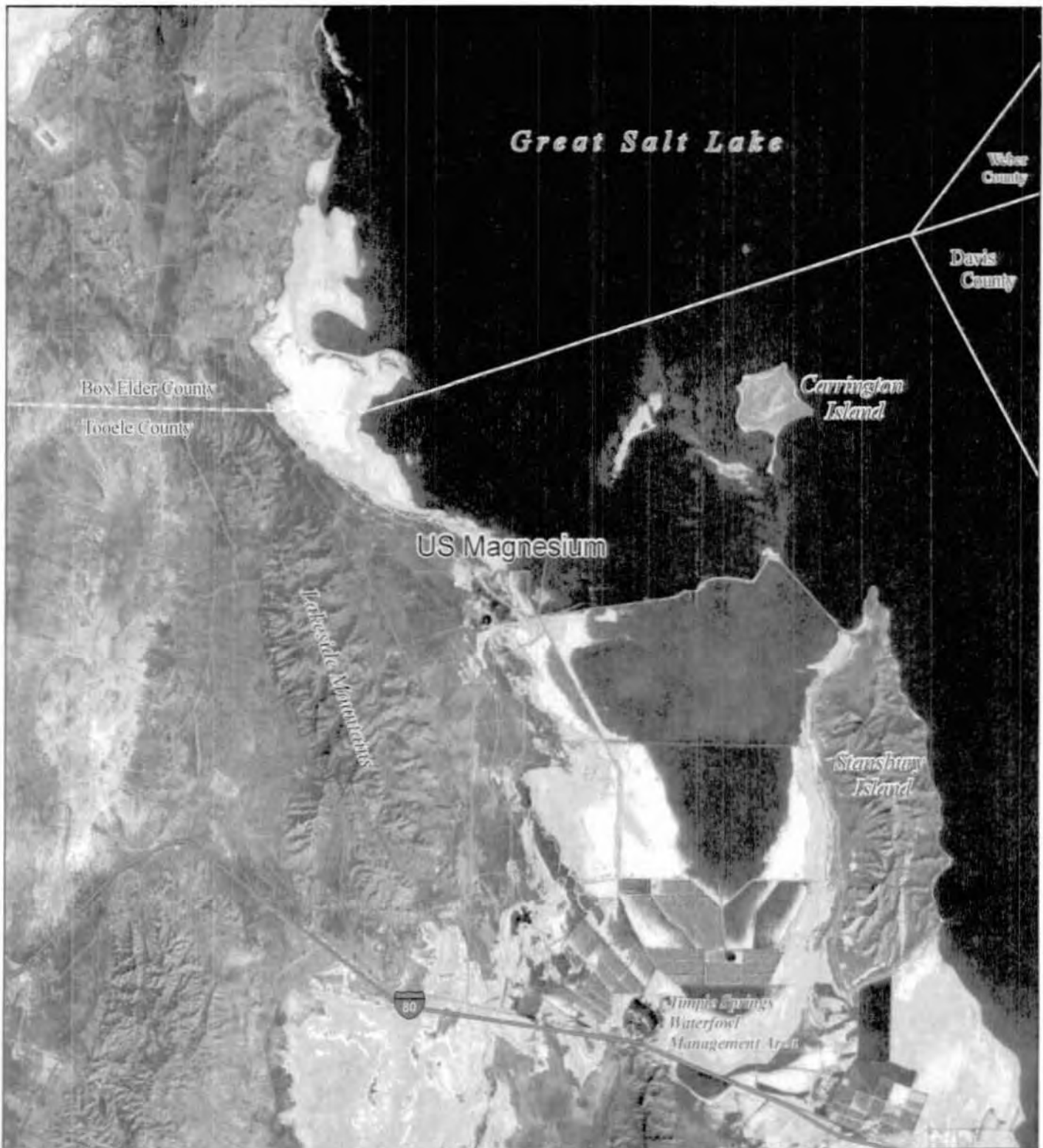
Assessing Risks to Populations at Superfund and RCRA Sites Characterizing Effects on Populations. EPA 600-R-06/038. Office of Research and Development. Narragansett, RI. 2006.

Risk Management

Role of the Baseline Risk Assessment in Superfund Remedy Selection Decisions.
OSWER Directive 9355.0-30, April 1991.

APPENDIX B
TO
ADMINISTRATIVE SETTLEMENT AGREEMENT AND ORDER ON CONSENT FOR
REMEDIAL INVESTIGATION/FEASIBILITY STUDY
FOR
THE US MAGNESIUM SITE, ROWLEY, UTAH

SITE MAP



**Attachment B: US Magnesium Site Tooele County, Utah
(March 2011)**

County Boundary

Interstate Highway

Map Date: March 2, 2011

Map Projection: UTM, Meters, Zone
12 North, NAD 83

Data Sources: Interstates - Navteq (2009)
Imagery - Bing Webservice (2011)

