

APPENDIX C

STATEMENT OF WORK

FOR THE REMEDIAL DESIGN AND REMEDIAL ACTION

Texas Instrument Project Area

TUCSON INTERNATIONAL AIRPORT AREA SUPERFUND SITE

Tucson, Arizona

EPA Region 9

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I. PURPOSE

This Statement of Work (“SOW”) sets forth the tasks and requirements to be undertaken by Settling Defendant, in compliance with the Consent Decree (“CD”), for designing and implementing the remedy selected for the Texas Instruments Project Area (“Project Area”) portion of Eastern Plume Area B within the Tucson International Airport Area (“TIAA”) Superfund Site as set forth in the 2012 Amendment to the Record of Decision (“2012 ROD Amendment”).

II. DEFINITIONS

Unless otherwise expressly provided in this SOW, the terms used in this SOW that are defined in the Comprehensive Environmental Response, Compensation and Liability Act (“CERCLA”), in regulations promulgated under CERCLA, or in the CD, shall have the meanings assigned to them in CERCLA, in such regulations, or in the CD.

III. SUMMARY OF THE REMEDIAL ACTION AND REQUIREMENTS

The Work to be performed under this SOW has been developed based on the remedy selected for Area B of the TIAA Superfund Site in the 2012 ROD Amendment (“Selected Remedy”). The Selected Remedy for the Project Area is in situ chemical oxidation (“ISCO”) in groundwater contamination source areas. A full description of the Selected Remedy is presented in the 2012 ROD Amendment.

The Work shall be conducted in accordance with this SOW. The major components of the Work associated with the Selected Remedy are summarized below.

- Settling Defendant shall develop and implement a Work Plan which will propose the degree to which additional field sampling is conducted. As part of the Remedial Design (“RD”), Settling Defendant shall refine the extent of contamination requiring remediation as needed and conduct the additional sampling in accordance with the EPA-approved sampling plans.
- Settling Defendant shall design and implement an ISCO injection system and monitoring wells, if required, in and near the Project Area until the Performance Standards are achieved.
- Settling Defendant shall propose the methods required for monitoring system performance and achievements, including process monitoring, progress of the remediation, plume stability, compliance with Applicable or Relevant and Appropriate Requirements (“ARARs”), and the attainment of the clean-up goal.
- Settling Defendant shall conduct long term monitoring as part of the Selected Remedy and in accordance with an EPA-approved Performance Monitoring and Verification Plan (“PMVP”) to provide sufficient data on a semi-annual basis to document compliance with the cleanup goals and verify that the remedy continues to be effective in the long-term for the purposes of the Five Year Review (“FYR”) process.

IV. GENERAL REQUIREMENTS

A. Deliverables

All plans, reports and other deliverables required pursuant to this SOW are subject to review and approval by EPA pursuant to Section XI of the CD. All submittals required pursuant to this SOW shall be provided to both EPA and the State. Unless otherwise directed by EPA, all submittals should be directed to the EPA Project Coordinator and the State Project Coordinator. Unless otherwise directed by EPA, all submittals shall be prepared in accordance with all applicable guidance, as noted in Section VI of this SOW.

B. Standards

Settling Defendant shall conduct the Work to ensure that it meets all Performance Standards of the 2012 ROD Amendment, the CD, this SOW, and applicable guidance. The Performance Standards include the ARARs, cleanup standards, standards of control, quality criteria and other substantive requirements, criteria or limitations set forth below, in the 2012 ROD Amendment, the CD, and/or contained in any approved deliverable.

C. Supervising Contractor

Pursuant to Paragraph 10 of the CD, the Work shall be under the direction and supervision of the Supervising Contractor who is subject to disapproval by EPA after review and comment from the State.

D. Progress Reports

Settling Defendant shall prepare monthly progress reports.

1. Settling Defendant shall prepare these progress reports commencing with the month following lodging of the CD and shall continue until EPA issues the Certification of Completion of the Remedial Action (“RA”).
2. Unless an alternate schedule is approved, Settling Defendant shall submit these progress reports to the EPA Project Coordinator and the State Project Coordinator by the tenth (10th) day of every month following the lodging of the CD, in accordance with the Schedule in Section X of the CD (“Reporting Requirements”). Settling Defendant may submit a request for EPA approval to reduce the frequency of progress reports, if appropriate for the stage of Work that is being performed.
3. Settling Defendant shall submit the progress reports electronically.
4. The progress reports shall include the following elements:
 - a) A summary of the Work that has been conducted during the previous month (or reporting period);

- b) A summary of sampling and test results and all other data received or generated by Settling Defendant or its contractors or agents in the previous month (or reporting period);
- c) A list of all plans, reports, and other deliverables required completed and submitted during the previous month (or reporting period);
- d) A description of all actions that are scheduled for the next three months;
- e) A description of all information regarding percentage of Work completion, unresolved delays encountered or anticipated that may affect the future schedule for implementation of the Work, and a description of efforts made to mitigate those delays or anticipated delays;
- f) A description of any modifications to any work plan or other schedules that Settling Defendant has proposed to EPA, or that have been approved by EPA; and
- g) A description of all activities taken in support of the requests made by the Unified Community Advisory Board for the Project Area.

E. Barriers

Settling Defendant shall erect barriers to prevent unauthorized access to any active remediation work area.

F. Long-Term Monitoring for Five Year Review

Unless an alternate frequency is approved by EPA, Settling Defendant shall conduct semi-annual groundwater monitoring of selected wells approved by EPA for the purposes of documenting the continued effectiveness of the remedy to meet Performance Standards, in accordance with an EPA-approved PMVP.

G. Best Efforts Green Remediation

Settling Defendant shall use best efforts to reduce short term impacts of the Work beyond minimum legal requirements, such as, but not limited to: use of rail transport rather than trucking, use of alternative fuels (e.g., biodiesel with ultra low sulfur diesel for off road and on road vehicles); idle reduction; and, use of equipment retrofitted with emissions controls (e.g., diesel oxidation catalyst, diesel multistage filter, or diesel particulate filter). Other examples include waste recycling, purchasing materials with post-consumer recycled content, and water usage reduction. Information and resources are available through Smart Energy Resources Guide (“SERG”) and Green Remediation: Incorporating Sustainable Environmental Practices into Remediation of Contaminated Sites.

H. Implementation

Settling Defendant shall implement all Work described in reports and plans and other documents in accordance with the approved schedule.

V. WORK TO BE PERFORMED

Settling Defendant shall perform the tasks set forth below in accordance with Section IV, Paragraph 11 of the CD.

A. Work Plan

Settling Defendant shall submit a Work Plan within thirty (30) days following the lodging of the CD. The Work Plan shall:

1. Include plans and schedules for implementation of all activities and any pre-design tasks identified in this SOW, or required by EPA to be conducted in order to implement the Selected Remedy;
2. Include the identity of, contact information for, and description of the roles of the members of Settling Defendant's project team, including the Project Coordinator, Quality Assurance Official ("QA Official"), and Supervising Contractor;
3. Document the overall management strategy for performing Design Investigations and RD, and present a general approach to construction, operation, maintenance, and long-term monitoring of the RA as necessary to implement the Selected Remedy and its effectiveness in meeting cleanup goals;
4. Document the responsibility and authority of all organizations and key personnel involved in implementing the Selected Remedy;
5. Identify any data gaps, and the approach to be used to address those data gaps;
6. Describe the proposed quality assurance approach (e.g., peer review, etc.);
7. Address permitting, ARARs and any other regulatory issues;
 - a) Provide a process and schedule for compliance during RD and RA with any requirements that necessitate coordination with other entities (e.g., property owners, state agencies, local agencies, etc.), such as access, permitting, property acquisition, property leases, and/or easements required for implementation of the RD and RA; Methods for satisfying permitting requirements, including obtaining permits for off-Site activity and satisfying ARARs requirements; and

- b) Provide methods for finalizing access agreements;
- 8. Provide a schedule for completion of all deliverables; and
- 9. Include a description of, and schedule for, deliverables to be submitted during the Work. The deliverables shall include:
 - a) Progress Reports;
 - b) Health and Safety Plan/Contingency Plan (“HASP/CP”);
 - c) Field Sampling Plan/Quality Assurance Project Plan (“FSP/QAPP”);
 - d) Design Investigation, if required;
 - e) ISCO Work Plan;
 - f) Operation and Maintenance Plan (“O&M”) Plan;
 - g) Construction Quality Assurance Project Plan (“CQAPP”);
 - h) Site-Wide Management Plan (“SWMP”);
 - i) PMVP; and
 - j) Semi-annual Reports.

B. HASP/CP

Settling Defendant shall submit a HASP/CP within thirty (30) days after the notice of authorization to proceed under Paragraph 10 of the CD.

- 1. HASP – The HASP shall describe all efforts to be made to protect area residents and any potential future employees from physical, chemical and all other hazards posed by Settling Defendant’s work at the Site. The HASP shall follow EPA guidance and all OSHA requirements, including but not limited to 29 CFR §§ 1910.120 and 1926. The HASP shall include the following elements:
 - a) Facility description;
 - b) Personnel;
 - c) Levels of protection;
 - d) Safe work practices and safe guards;
 - e) Medical surveillance;

- f) Personal and environmental air monitoring;
 - g) Personal protective equipment;
 - h) Personal hygiene;
 - i) Decontamination of persons and equipment;
 - j) Site work zones;
 - k) Contaminant control;
 - l) Logs, reports and record keeping; and
 - m) Training and safety audits.
2. CP – The CP shall describe procedures to be used in the event of an accident or emergency at the Project Area (e.g., power outages, water impoundment failure, spill, etc). The CP shall include the following elements:
- a) Name of the person or entity responsible for responding in the event of an emergency incident;
 - b) Plan and schedule for meeting(s) with the local community, including local, State and Federal agencies involved in the cleanup, as well as local emergency squads and hospitals;
 - c) First aid medical information;
 - d) Air Monitoring Plan (if applicable); and
 - e) Spill Prevention, Control, and Countermeasures (“SPCC”) Plan (if applicable), as specified in 40 CFR Part 109 describing measures to prevent, and contingency plans for, potential spills and discharges from the handling and transportation of materials.

The CP shall include notification activities compliant with Section XV of the CD.

C. FSP/QAPP

Settling Defendant shall submit a FSP/QAPP within thirty (30) days after the notice of authorization to proceed under Paragraph 10 of the CD. The FSP/QAPP will be developed to support the baseline, injection and post-injection sampling.

1. FSP – The FSP shall be written so that a field sampling team unfamiliar with the project would be able to gather the samples and field information required. The FSP shall describe:

- a) Sampling objectives;
- b) Analytical parameters, analytical methods, and holding times;
- c) Sampling locations and frequencies;
- d) Sampling procedures and equipment;
- e) Sample preservation, sample packing, QA/QC samples;
- f) Sample paperwork and chain-of-custody procedures;
- g) Sample handling and shipping;
- h) Management of investigation-derived wastes;
- i) Planned uses of the data;
- j) The sampling and data collection methods that will be used; and
- k) A schedule for activities that must be completed in advance of sampling, including acquisition of property, access agreements, and arrangements for disposal of investigation-derived waste.

2. QAPP – The QAPP shall address all QA/QC requirements for the sampling efforts to which they apply. The QAPP shall cover sample analysis and data handling for all samples collected. The QAPP shall be consistent with the requirements of the EPA Contract Lab Program (“CLP”) for laboratories proposed outside the CLP.

D. Design Investigation, if required

If directed by EPA, Settling Defendant shall plan and conduct a Design Investigation to address data gaps. The Design Investigation shall include, but is not limited to, extent of contamination, geochemistry parameters, contaminant concentrations in groundwater, and proposed locations of injections. Settling Defendant shall propose any other Design Investigations that it considers necessary, including, but not limited to, investigations to assess lithology, other soil physical parameters, or other groundwater parameters.

For any Design Investigation planned and conducted, Settling Defendant shall submit planning documents and reports for investigations necessary to support RD and shall perform the Design Investigations as approved by EPA.

For any Field Investigation conducted as part of Design Investigation, Settling Defendant shall submit a Field Investigation Work Plan and Field Investigation Evaluation Report as described in further detail below.

1. Field Investigation Work Plan. Settling Defendant shall submit a Field Investigation Work Plan within thirty (30) days of EPA's direction to conduct a Design Investigation or within an alternative amount of time approved by EPA.

a) FSP – The FSP shall supplement the approved FSP described in Section C, above, and address all sample collection activities specific to any Design Investigative work needed.

b) QAPP – The QAPP shall supplement the approved QAPP described in Section C, above, and address all QA/QC requirements for the sampling efforts to which they apply. The QAPP shall cover sample analysis and data handling for all samples collected. The QAPP shall be consistent with the requirements of the CLP for laboratories proposed outside the CLP.

c) Design Investigation HASP – if not covered in existing HASP previously included.

d) Schedule for conducting field investigation activities and submitting the Field Investigation Evaluation Report.

2. Field Investigation Evaluation Report, which includes:

a) Narrative summary of the investigations performed;

b) Narrative summary of the results of the investigations;

c) Narrative interpretation of data and results;

d) Resultant design parameters and criteria;

e) Conclusions and recommendations for RD;

f) Summary of validated data (i.e., tables and graphics);

g) Data validation reports and laboratory data reports;

h) Results of any statistical and modeling analyses;

i) Copies of field notes and log books; and

j) Photographs documenting the field investigation.

E. ISCO Work Plan

Settling Defendant shall submit an ISCO Work Plan within sixty (60) days after EPA approval of the Work Plan. The ISCO Work Plan submittal shall include the following elements:

1. Design assumptions and parameters, including design restrictions, process performance criteria, appropriate unit processes for any treatment train, and expected removal (concentration and volume);
2. Summary of results from 2009 Pilot Test, subsequent monitoring results and data interpretation;
3. Summary of Project Area characteristics including site-specific data, e.g., natural oxidant demand, needed to design the Selected Remedy;
4. Detailed hydrogeology of the expected radius of influence of injection area;
5. Injection strategy and dose calculations;
6. Monitoring program during injection including monitoring within the injection radius of influence;
7. Identification of volume and concentration of permanganate injected, radius of influence and rationale;
8. Discussion of expectation of permanganate movement over time;
9. Discussion of the potential impact of permanganate on the concentrations in groundwater of chromium, hexavalent chromium and arsenic;
10. Preliminary plans, drawings, and sketches, including design calculations;
11. Proposed cleanup verification methods, including compliance with ARARs;
12. Permit requirements;
13. Real estate acquisition through any purchases or easements that are necessary to implement the RA;
14. Expected long-term monitoring and operation requirements;
15. Project Delivery Strategy;
16. Construction schedule, including a schedule for permit requirements;
17. Site security measures;
18. Value Engineering Screen or Study, as necessary;
19. Plan for procurement that describes Settling Defendant's contracting strategy; and
20. O&M Plan, as further described below.

F. O&M Plan

Settling Defendant shall submit an O&M plan according to the schedule specified by the approved Work Plan (see Section V(A) of this SOW). The O&M Plan may be submitted as part of the ISCO Work Plan and shall describe O&M of the ISCO Remedy or may be submitted separately. The O&M Plan shall include the following elements:

1. Description of site security needs and provision;
2. Description of and schedule for each operation task and maintenance task;
3. Description of instrumentation and equipment monitoring;
4. Example checklists and descriptions of reports;
5. Waste transportation and plan for off-site disposal;
6. Health and safety requirements, including, descriptions of precautions, necessary equipment, etc., for site personnel, and safety tasks required in the event of a systems failure;
7. Description and analysis of potential operating problems, including common and/or anticipated remedies;
8. Description of routine monitoring, data collection and laboratory testing, and schedule and procedures for monitoring;
9. A FSP/QAPP for any field sampling required as part of the routine monitoring, data collection and laboratory testing (the required components of an FSP/QAPP are described in Section V(C) of this SOW);
10. Description of alternative operations and maintenance in case of systems failure, including (a) alternative procedures to prevent release or threatened releases of waste material which may endanger public health and the environment or exceed Performance Standards, (b) analysis of vulnerability and additional resource requirements should a failure occur; and, (c) notification and reporting requirements should O&M systems fail or be in danger of imminent failure;
11. Description of corrective action to be implemented in the event that cleanup or Performance Standards are exceeded, and a schedule for implementing such corrective action; and,
12. Description of records and reports, including daily operating logs, laboratory records, reports regarding emergencies, personnel and maintenance records; and monthly and semi-annual reports to State agencies.

G. CQAPP

Settling Defendant shall submit a CQAPP according to the schedule specified by the approved Work Plan (see Section V(A) of this SOW) and may be included as part of the ISCO Work Plan or may be submitted separately. The CQAPP shall detail the quality assurance program during injection activities, to ensure that the completed project meets or exceeds all design criteria, plans, and specifications. The CQAPP shall address sampling, analysis, and monitoring to be performed during the construction phase of the Work. The CQAPP shall include, at a minimum, the following:

1. Identification of a QA Official independent of the Supervising Contractor to conduct a quality assurance program during the RA phase of the project;
2. Qualifications of the QA Official to demonstrate he or she possesses the training and experience necessary to fulfill his or her identified responsibilities;
3. Responsibilities and authorities of all organizations and key personnel involved in the design and implementation of the RA;
4. Specific quality assurance systems to be used, if any;
5. Monitoring, measurement, sampling, testing and daily logging to establish whether the RA implementation is performed in compliance with design specifications, ARARs, and Performance Standards (this shall include identification of the sample size, locations, frequency of testing, acceptance and rejection data sheets, problem identification and corrective measures reports, evaluation reports, acceptance reports, and final documentation);
6. Protocols for monitoring, measurement, sampling and testing;
7. Inspection and certification of the Work; and
8. A detailed description of reporting requirements for CQAPP activities (this shall include such items as daily summary reports, inspection data sheets, problem identification and corrective measures reports, design acceptance reports, and final documentation).

H. SWMP

Settling Defendant shall submit a SWMP according to the schedule specified by the approved Work Plan (see Section V(A) of this SOW) and may be included as part of the ISCO Work Plan or may be submitted separately, which includes:

1. A description of site security needs and provisions; and

2. A description of the constraints and parameters imposed on the project by outside entities, including property owners, operating businesses, local agencies, etc., and a plan for accommodating these constraints in the implementation of the RA.

I. Contractor Selection

Within forty-five (45) days after EPA approval of the ISCO Work Plan, Settling Defendant shall notify EPA in writing of the name, title, and qualifications of any construction contractor proposed to be used in carrying out the RA under the CD and this SOW. Except as provided in the preceding sentence, the Settling Defendant shall demonstrate that the proposed construction contractor has a quality system that complies with American National Standards Institute (“ANSI”), by submitting a copy of the proposed construction contractor’s Quality Management Plan (“QMP”) within forty-five (45) days after EPA approval of the Final Design. If EPA disapproves of the selection of any contractor as the construction contractor, Settling Defendant shall submit its proposed replacement contractors within thirty (30) days after receipt of EPA's disapproval of the contractor previously selected. EPA shall thereafter provide written notice of the name(s) of the contractor(s) it approves, if any.

If at any time Settling Defendant proposes to change the construction contractor, Settling Defendant shall notify EPA and shall obtain approval from EPA as provided in this paragraph, before the new construction contractor performs any Work.

J. RA Implementation

Settling Defendant shall implement the RA as detailed in the approved ISCO Work Plan, the approved CQAPP, and the approved SWMP. Respondents shall notify EPA within ten (10) days prior to the completion of the RA.

K. PMVP

Settling Defendant shall submit a PMVP according to the schedule specified in the approved Work Plan. The purpose of the PMVP is to describe how the short-term and long-term Performance Standards for the RA will be measured and evaluated. The PMVP shall include the following elements:

1. A description of each of the Performance Standards;
2. A description of how each of the Performance Standards will be met; a description of how ongoing achievement of the Performance Standards will be measured and reported (a FSP and QAPP, the elements of which are described in Section V.C.1 of this SOW, shall be included for any environmental sampling required); and

3. A description of the selected wells, well monitoring network to be sampled and the analytes to be sampled. Sampling shall occur a minimum semi-annually once the remedy is determined to be complete, with the monitoring results included in an semi-annual report to be submitted to EPA to verify and document compliance with the cleanup goals and that the remedy continues to be effective in the long-term.

L. Inspections and Meetings during Remedy Implementation

1. Meetings. Within thirty (30) days after approval of the ISCO Work Plan and before the start of construction, Settling Defendant shall hold a preconstruction meeting with EPA and the State, and others as directed or approved by EPA. During the construction phase of the Work (i.e., the period during which the ISCO system is being built and ISCO is being injected), Settling Defendant shall hold weekly meetings or conference calls with EPA, and others as directed or approved by EPA, to discuss progress and issues. The Settling Defendant shall provide an agenda and attendees to EPA prior to all meetings and shall prepare draft minutes of the meetings which shall be sent to all parties in attendance at the meeting within five (5) days of the meeting.
2. Periodic Inspections. Settling Defendant shall provide access to EPA and the State during any and all periodic inspections and shall, as much as practicable, accompany EPA and the State during these inspections. EPA shall provide Settling Defendant with notice of any deficiencies in construction or construction not in substantial compliance with the approved ISCO Work Plan change notices, and the approved final Work Plan will be noted during periodic inspections. Upon such notice, Settling Defendant shall take all necessary steps to correct the deficiencies and/or bring the construction into compliance with the approved Final Design, any approved design changes, and/or the approved RA Work Plan.

M. Semi-annual Reports after Remedy Completion

Settling Defendant shall submit Semi-annual Reports commencing one (1) year after the notice of authorization to proceed under Paragraph 10 of the CD. The Semi-annual Reports shall include: work completed since the last report, operations and maintenance summary; description of monitoring activities including depth to water measurements and chemical analysis results; groundwater quality including chemicals of concern, residual permanganate and total metals; charts showing contaminant concentrations overtime at monitoring wells; assessments and statements as to whether Performance Standards are being satisfied at compliance monitoring wells; predictions, if appropriate, of possible future occurrences of noncompliance and of expected time to meet Performance Standards; relevant preliminary calculations and supporting data used to evaluate compliance; and any other relevant requirements.

N. Completion of RA

1. RA Report – Settling Defendant shall submit a RA Report within thirty (30) days after the Final Construction Inspection. The RA Report shall include a certification by Settling Defendant’s Project Coordinator and by a registered professional engineer that the physical construction for the RA has been performed in satisfaction of the requirements of the CD and this SOW. The certification is as follows:

“I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”

2. Preliminary Close-out Report. Within ninety (90) days of EPA’s determination that all clean-up goals have been achieved, Settling Defendant shall submit a Preliminary Close-out Report. The report shall comply with EPA Guidance “Close Out Procedures for NPL Sites” (see Section VI of this SOW) or any subsequent guidance issued by EPA on close-out procedures.

O. Completion of Work

1. Pre-Certification Inspection. Within sixty (60) days after Settling Defendant concludes that all phases of the Work, other than any remaining activities required under Section VII (Remedy Review) of the CD, have been fully performed, the Settling Defendant shall schedule and conduct a Pre-Certification Inspection to be attended by the Settling Defendant, EPA, and the State.
2. Pre-Certification Written Report. If, after the Pre-Certification Inspection, Settling Defendant still believes that the Work has been fully performed, Settling Defendant shall submit a written report by a Registered Professional Engineer or Registered Geologist stating that the Work has been completed in full satisfaction of the requirements of the CD. This report shall be submitted within thirty (30) days after completion of the Pre-Certification Inspection. The report shall contain the statement set forth in Paragraph 47 of the CD and Section V.N. of this SOW, signed by a responsible corporate official of Settling Defendant or Settling Defendant’s Project Coordinator.

3. If, after review of the written report, EPA, after reasonable opportunity for review and comment by the State, determines that any portion of the Work has not been completed in accordance with the CD, EPA will notify Settling Defendant in writing of the activities that must be undertaken by Settling Defendant and Settling Defendant shall perform all activities described in the notice in accordance with the specifications and schedules established therein.

VI. REFERENCES/GUIDANCE DOCUMENTS

The following list, although not comprehensive, consists of many of the regulations and guidance documents that apply to the RD/RA process:

- *Uniform Federal Policy for Quality Assurance Project Plans (UFP-QAPP), Parts 1, 2 and 3, EPA-505-B-04-900A, B and C, March 2005 (see Section V. A. of the Remedial Design SOW).*
- *Construction Specifications Institute's Manual of Practice, 1985 edition, available from the Construction Specifications Institute, 601 Madison Street, Alexandria, Virginia 22314.*
- *Greener Cleanups Policy - EPA REGION 9, issued September 14, 2009; found at:<http://www.epa.gov/region09/climatechange/green-sites.html>.*
- *Superfund Green Remediation Strategy, dated September 2010, <http://www.epa.gov/superfund/greenremediation/sf-gr-strategy.pdf>.*
- *Smart Energy Resources Guide, EPA/600/R-08/049, March 2008*
- *Green Remediation: Incorporating Sustainable Environmental Practices into Remediation of Contaminated Sites, EPA 542-R-08-002 April 2008*
- *CERCLA Compliance with Other Laws Plan, Two Volumes, U. S. EPA, Office of Emergency and Remedial Response, August 1988 (DRAFT), OSWER Directive No. 9234. 1-01 and -02.*
- *EPA Guidance on Systematic Planning Using the Data Quality Objectives Process (EPA QA/G-4, 2006).*
- *Guidance on Expediting Remedial Design and Remedial Actions, EPA/540/G-90/006, August 1990.*
- *Guidance on Remedial Actions for Contaminated Ground Water at Superfund Sites, U. S. EPA Office of Emergency and Remedial Response (DRAFT), OSWER Directive No. 9283. 1-2., 1988*
- *Guide to Management of Investigation-Derived Wastes, U. S. EPA, Office of Solid Waste and Emergency Response, Publication 9345. 3-03FS, January 1992.*

- *Interim Guidance on Compliance with Applicable of Relevant and Appropriate Requirements, U. S. EPA, Office of Emergency and Remedial Response, July 9, 1987, OSWER Directive No. 9234. 0-05.*
- *National Oil and Hazardous Substances Pollution Contingency Plan; Final Rule, Federal Register 40 CFR Part 300, March 8, 1990.*
- *Permits and Permit Equivalency Processes for CERCLA On-Site Response Actions, February 19, 1992, OSWER Directive 9355. 7-03.*
- *Quality in the Constructed Project: A Guideline for Owners, Designers and Constructors, Volume 1, Preliminary Edition for Trial Use and Comment, American Society of Civil Engineers, May 1988.*
- *Remedial Design/Remedial Action (RD/RA) Handbook, U. S. EPA, Office of Solid Waste and Emergency Response (OSWER), 9355. 0-04B, EPA 540/R-95/059, June 1995.*
- *EPA Requirements for Quality Assurance Project Plans for Environmental Data Operations, U. S. EPA, EPA/240/B-01/003, March 2001, Reissued May 2006.*
- *Guidance for Quality Assurance Project Plans, U. S. EPA, EPA/240/R-02/009, December 2002.*
- *Scoping the Remedial Design (Fact Sheet), February 1995, OSWER Publ. 9355-5-21 FS.*
- *Standards for the Construction Industry, Code of Federal Regulations, Title 29, Part 1926, Occupational Health and Safety Administration.*
- *Standards for General Industry, Code of Federal Regulations, Title 29, Part 1910, Occupational Health and Safety Administration.*
- *Superfund Guidance on EPA Oversight of Remedial Designs and Remedial Actions Performed by Potentially Responsible Parties, April 1990, EPA/540/G-90/001.*
- *Value Engineering (Fact Sheet), U. S. EPA, Office of Solid Waste and Emergency Response, Publication 9355. 5-03FS, May 1990.*
- *USEPA Contract Laboratory Program National Functional Guidelines for Low Concentration Organic Data Review, EPA-540-R-00-006, June 2001.*
- *USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, EPA-540-R-08-01, June 2008.*
- *American National Standards Practices for Respiratory Protection. American National Standards Institute Z88. 2-1980, March 11, 1981.*

- *A Compendium of Superfund Field Operations Methods, Two Volumes, USEPA, Office of Emergency and Remedial Response, EPA/540/P-87/001a, August 1987, OSWER Directive No. 9355. 0-14.*
- *Data Quality Objectives for Remedial Response Activities, USEPA, Office of Emergency and Remedial Response and Office of Waste Programs Enforcement, EPA/540/G-87/003, March 1987, OSWER Directive No. 9355. 0-7B.*
- *Engineering Support Branch Standard Operating Procedures and Quality Assurance Plan, USEPA Region IV, Environmental Services Division, April 1, 1986 (revised periodically).*
- *NIOSH Plan of Analytical Methods, 2nd edition. Volumes I-VII for the 3rd edition, Volumes I and II, National Institute of Occupational Safety and Health.*
- *Occupational Safety and Health Guidance Plan for Hazardous Waste Site Activities, National Institute of Occupational Safety and Health/Occupational Health and Safety Administration/United States Coast Guard/Environmental Protection Agency, October 1985.*
- *Superfund Remedial Design and Remedial Action Guidance, USEPA, Office of Emergency and Remedial Response, June 1986, OSWER Directive No. 9355. 0-4A.*
- *EPA Region IX Sampling and Analysis Plan Guidance and Template (R9QA/002. 1, April, 2000).*
- *Draft: Region 9 Superfund Data Evaluation/Validation Guidance, USEPA, Quality Assurance Office, R9QA/006. 1, December 2001.*
- *Operation and Maintenance in the Superfund Program, EPA, May 2001, (OSWER 9200. 1-37FS, EPA 540-F-01-004).*
- *Specifications and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs (American National Standard, January 5, 1995), ANSI/ASQC E4-1994.*
- *EPA Requirements for Quality Management Plans (QA/R-2), EPA/240/B-01/002, March 2001, reissued May 2006.*
- *EPA Guidance for Data Quality Assessment, Practical Methods for Data Analysis (EPA QA/G-9, 1998).*
- *Close Out Procedures for National Priorities List Sites, EPA, January 2000 (OSWER Directive 9320.09A-P).*

VII. SCHEDULE FOR DELIVERABLES AND MILESTONES

	Major Deliverable	Due Date
SOW Sec IV(C)	Written Notification of and Quality Management Plan for proposed Supervising Contractor	10 th day following lodging of CD
SOW Sec IV(D)	Progress Reports	10 th day of every month following lodging of CD
SOW Sec V(A)	Work Plan	30 th day following lodging of CD
SOW Sec V(B)	Health and Safety Plan/Contingency Plan (HSP/CP)	30 days after notice of authorization to proceed under Paragraph 10 of the CD
SOW Sec V(C)	Field Sampling Plan/Quality Assurance Project Plan (FSP/QAPP)	30 days after notice of authorization to proceed under Paragraph 10 of the CD.
SOW Sec V(D)	Field Investigation Work Plan for Design Investigation	Within 30 days of direction by EPA
SOW Sec V(E)	ISCO Work Plan	60 days after approval of Work Plan
SOW Sec V(F)	Draft Operation and Maintenance Plan (O&M Plan)	According to schedule specified in approved Work Plan
SOW Sec V(G)	Construction Quality Assurance Project Plan (CQAPP)	According to schedule specified in approved Work Plan
SOW Sec V(H)	Site-Wide Management Plan (SWMP)	According to schedule specified in approved Work Plan
SOW Sec V(I)	Contractor Selection	45 days after ISCO Work Plan approval
SOW Sec V(J)	RA Implementation	According to schedule specified in approved ISCO Work Plan
SOW Sec V(K)	Performance Monitoring and Verification Plan	According to schedule specified in approved Work Plan
SOW Sec V(L)	Pre-Construction Meeting	30 days after approval of the ISCO Work Plan and before the start of construction
SOW Sec V(L)	Draft minutes of Periodic Meetings	Within 5 days of the meeting
SOW Sec V(M)	Semi-annual Reports after Remedy Completion	Within 1 year after notice of authorization to proceed and continuing every six months

SOW Sec V(N)	Remedial Action Report	30 days after the Final Construction Inspection
SOW Sec V(N)	Preliminary Close Out Report	Within 90 days after all cleanup goals have been achieved
SOW Sec V(O)	Pre-Certification Inspection	Within 60 days after all phases of Work has been completed
SOW Sec V(O)	Pre-Certification Written Report	Within 30 days after completion of the Pre-Certification Inspection