# STATEMENT OF WORK
# FOR RD/RA CONSENT DECREE
# EPA - Region 4

## STATEMENT OF WORK FOR THE JACKSONVILLE ASH SUPERFUND SITE
## OPERABLE UNITS 1 AND 2

## DUVAL COUNTY, FLORIDA

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STATEMENT OF WORK FOR THE
REMEDIAL DESIGN AND REMEDIAL ACTION
AT THE JACKSONVILLE ASH SITE

## I. INTRODUCTION

This Statement of Work (SOW) outlines the work to be performed by Settling Defendant at the Jacksonville Ash Superfund Site in Duval County, Florida ("the Site"). The work outlined is intended to fully implement the remedy for entire Site (Operable Units 1 and 2) as described in the Record of Decision (ROD) for the Site, dated August 24, 2006, and to achieve the Performance Standards set forth in the ROD, Consent Decree, and this SOW. The requirements of this SOW will be further detailed in work plans and other documents to be submitted by the Settling Defendant for approval as set forth in this SOW. It is not the intent of this document to provide task specific engineering or geological guidance. The definitions set forth in Section IV of the Consent Decree shall also apply to this SOW unless expressly provided otherwise herein.

Settling Defendant is responsible for performing the Work to implement the selected remedy. EPA shall conduct oversight of the Settling Defendant's activities throughout the performance of the Work. The Settling Defendant shall assist EPA in conducting oversight activities.

EPA review or approval of a task or deliverable shall not be construed as a guarantee as to the adequacy of such task or deliverable. If EPA modifies a deliverable pursuant to Section XII of the Consent Decree, such deliverable as modified shall be deemed approved by EPA for purposes of this SOW. A summary of the major deliverables that Settling Defendant shall submit for the Work is attached.

## II. OVERVIEW OF THE REMEDY

THE OBJECTIVES OF THIS REMEDIAL ACTION ARE TO:

- Prevent human exposure to site COCs through contact, ingestion, or inhalation of soil contaminated from incinerator ash or other wastes disposed at the Jacksonville Ash Site with a carcinogenic risk greater than $1 \times 10^{-6}$ (i.e., one in a million), with a noncarcinogenic hazard index greater than 1 and lead in excess of 400 mg/kg.
- Prevent impacts to terrestrial biota from exposure to surface soils contaminated from incinerator ash disposed at the Jacksonville Ash Site and containing contaminants of potential ecological concern (COPECs) in excess of preliminary ecological Remedial Goals (RGs) and soil background concentrations.[1]
- Prevent impacts to aquatic communities and viable insectivore (insect eating) and piscivore (fish eating) communities from exposure to sediment contaminated from incinerator ash at the Jacksonville Ash Site and containing chemicals of potential ecological concern (COPECs) in excess of ecological Preliminary Remediation Goals (PRGs) and sediment background concentrations.[2]

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[1] Cleanup to satisfy the human health RGs will also provide adequate cleanup to protect ecological receptors (i.e., separate actions to address ecological risk in soil is not needed).

[2] Exceedences of ecological sediment PRGs in stream sediments have been found to be similar to sediment background concentrations upstream of the sites. No active remediation of the stream sediment is required. The drainage ditches at the 5th & Cleveland site and Lonnie Miller Park are not significant aquatic habitats due to the lack of water for most of the year. These ditches will be remediated to human health soil cleanup concentrations.

- Control erosion and transport of soils containin mg/kg or COPECs in excess of preliminary ec and creek to prevent possible unacceptable risk
- Place geotextile (or other membrane) topped w open crawlspaces (that can be accessed by chil RGs to further prevent direct contact with the s
- Institute groundwater monitoring to verify the ' groundwater. CERCLA 5 year Reviews of post be used to determine effectiveness of this site s groundwater contaminant levels and the potent

III. REMEDY

The remedy includes prevention of human exposure to s Goals is provided by soil removal as needed to allow fo In residential areas the selected remedy will consist of t the remedial goals (RGs) in the upper 2 feet of soil to b needed to provide two feet of uncontaminated soil. Inst verify the "No Action" decision for the groundwater. In control exposure to remaining soil contamination above cover and under buildings, roads, driveways, sidewalks. break in the exposure pathway.

A. Components

The major components of the remedy are desc the attached Record of Decision.(Section 9.2

B. Treatment

The treatment technologies for the remedy are Remedy section of the attached Record of Dec

C. Performance Standards

Settling Defendant shall meet all Performance Decree including the standards set forth in the identified by EPA during Remedial Design.

Settling Defendant shall operate the soil treatm demonstrated compliance with the respective I with the Performance Standards Verification P

D. Compliance Testing

Settling Defendant shall perform compliance t Standards are met. The treated soils and relat with the Performance Standard Verification P SOW. After demonstration of compliance wi Defendant shall monitor the Site including so years.. If testing of treated soils indicates the EPA may reevaluate the effectiveness of the s

E. Treatability Studies

If needed, Settling Defendant shall submit a Treatability Study Workplan to determine if the selected remedy will attain all Performance Standards. Settling Defendant shall use the study results and site specific operating conditions in the detailed design of the selected remedy. EPA will evaluate the results of the treatability study to determine whether the proposed treatment will attain the Performance Standards. Settling Defendant shall submit the Treatability Study Final Report to EPA as soon as possible following completion of the study.

## IV. PLANNING AND DELIVERABLES

The specific scope of this work shall be documented by Settling Defendant in a Remedial Design (RD) Work Plan and a Remedial Action (RA) Work Plan. Plans, specifications, submittals, and other deliverables shall be subject to EPA review and approval in accordance with Section XII of the Consent Decree.

Settling Defendant shall submit a technical memorandum documenting any need for additional data along with the proposed Data Quality Objectives (DQOs) whenever such requirements are identified. Settling Defendant is responsible for fulfilling additional data and analysis needs identified by EPA during the RD/RA process consistent with the general scope and objectives of the Consent Decree, including this SOW.

Settling Defendant shall perform the following tasks:

### TASK I - PROJECT PLANNING

A. Site Background

Settling Defendant shall gather and evaluate the existing information regarding the Site and shall conduct a visit to the Site to assist in planning the RD/RA as follows:

1. Collect and Evaluate Existing Data and Document the Need for Additional Data

   Before planning RD/RA activities, all existing Site data shall be thoroughly compiled and reviewed by Settling Defendant. Specifically, this shall include the ROD, RI/FS, and other available data related to the Site. This information shall be utilized in determining additional data needed for RD/RA implementation. Final decisions on the necessary data and DQOs shall be made by EPA.

2. Conduct Site Visit

   Settling Defendant shall conduct a visit to the Site with the EPA Remedial Project Manager (RPM) during the project planning phase to assist in developing a conceptual understanding of the RD/RA requirements for the Site. Information gathered during this visit shall be utilized to plan the project and to determine the extent of the additional data necessary to implement the RD/RA.

B. Project Planning

Once Settling Defendant has collected and evaluated existing data and conducted a visit to the

Site, the specific project scope shall be planned. Settling Defendant shall meet with EPA at the completion of this evaluation regarding the following activities and before proceeding with Task II.

TASK II - REMEDIAL DESIGN

The Remedial Design shall provide the technical details for implementation of the Remedial Action in accordance with currently accepted environmental protection technologies and standard professional engineering and construction practices. The design shall include clear and comprehensive design plans and specifications.

A. Remedial Design Planning

Settling Defendant shall submit an RD Work Plan, a Sampling and Analysis Plan, a Health and Safety Plan, and if needed, a Treatability Study Work Plan to EPA. The RD Work Plan, the Sampling and Analysis Plan [and the Treatability Study Work Plan] must be reviewed and approved by EPA and the Health and Safety Plan reviewed and commented on by EPA prior to the initiation of field activities. Upon approval of the RD Work Plan, Settling Defendant shall implement the RD Work Plan in accordance with the design management schedule contained therein. Plans, specifications, submittals, and other deliverables shall be subject to EPA review and approval in accordance with Section XII of the Consent Decree. Review and/or approval of design submittals only allows Settling Defendant to proceed to the next step of the design process. It does not imply acceptance of later design submittals that have not been reviewed, nor that the remedy, when constructed, will meet Performance Standards.

1. RD Work Plan

Settling Defendant shall submit a Remedial Design (RD) Work Plan to EPA for review and approval. The Work Plan shall be developed in conjunction with the Sampling and Analysis Plan, the Health and Safety Plan, and the Treatability Study Work Plan, although each plan may be delivered under separate cover. The Work Plan shall include a comprehensive description of the additional data collection and evaluation activities to be performed, if any, and the plans and specifications to be prepared. A comprehensive design management schedule for completion of each major activity and submission of each deliverable shall also be included.

Specifically, the RD Work Plan shall present the following:

a. A statement of the problem(s) and potential problem(s) posed by the Site and the objectives of the RD/RA.

b. A background summary setting forth the following:

1) A brief description of the Site including the geographic location and the physiographic, hydrologic, geologic, demographic, ecological, and natural resource features;

2) A brief synopsis of the history of the Site including a summary of past disposal practices and a description of previous responses that have been conducted by local, State, Federal, or private parties;

3) A summary of the existing data including physical and chemical characteristics of the contaminants identified and their distribution among the environmental media at the Site.

c. A list and detailed description of the tasks to be performed, information needed for each task, information to be produced during and at the conclusion of each task, and a description of the work products that shall be submitted to EPA. This description shall include the deliverables set forth in the remainder of Task II.

d. A schedule with specific dates for completion of each required activity and submission of each deliverable required by the Consent Decree and this SOW. This schedule shall also include information regarding timing, initiation and completion of all critical path milestones for each activity and/or deliverable.

e. A project management plan, including a data management plan, and provision for monthly reports to EPA, and meetings and presentations to EPA at the conclusion of each major phase of the RD/RA. The data management plan shall address the requirements for project management systems, including tracking, sorting, and retrieving the data along with an identification of the software to be used, minimum data requirements, data format and backup data management. The plan shall address both data management and document control for all activities conducted during the RD/RA.

f. A description of the community relations support activities to be conducted during the RD. At EPA's request, Settling Defendant will assist EPA in preparing and disseminating information to the public regarding the RD work to be performed.

2. Sampling and Analysis Plan

If needed, Settling Defendant shall prepare a Sampling and Analysis Plan (SAP) to ensure that sample collection and analytical activities are conducted in accordance with technically acceptable protocols and that the data generated will meet the DQOs established. The SAP shall include a Field Sampling and Analysis Plan (FSAP) and a Quality Assurance Project Plan (QAPP).

The FSAP shall define in detail the sampling and data-gathering methods that shall be used on the project. It shall include sampling objectives, sample location (horizontal and vertical) and frequency, sampling equipment and procedures, and sample handling and analysis. The Field Sampling and Analysis Plan shall be written so that a field sampling team unfamiliar with the Site would be able to gather the samples and field information required. The QAPP shall describe the project objectives and organization, functional activities, and quality assurance and quality control (QA/QC) protocols that shall be used to achieve the desired DQOs. The DQOs shall, at a minimum, reflect use of analytical methods for obtaining data of sufficient quality to meet National Contingency Plan requirements as identified at 300.435 (b). In addition, the QAPP shall address personnel qualifications, sampling procedures, sample custody, analytical procedures, and data reduction, validation, and reporting. These procedures must be consistent with the Region 4 Environmental

Investigation Standard Operating Procedures and Quality Assurance Manual and the guidances specified in Section IX of the Consent Decree.

Settling Defendant shall demonstrate in advance and to EPA's satisfaction that each laboratory it may use is qualified to conduct the proposed work and meets the requirements specified in Section IX of the Consent Decree. EPA may require that Settling Defendant submit detailed information to demonstrate that the laboratory is qualified to conduct the work, including information on personnel qualifications, equipment and material specification, and laboratory analyses of performance samples (blank and/or spike samples). In addition, EPA may require submittal of data packages equivalent to those generated by the EPA Contract Laboratory Program (CLP).

3. Health and Safety Plan

If needed, A Health and Safety Plan shall be prepared in conformance with Settling Defendant's health and safety program, and in compliance with OSHA regulations and protocols. The Health and Safety Plan shall include a health and safety risk analysis, a description of monitoring and personal protective equipment, medical monitoring, and provisions for site control. EPA will not approve Settling Defendant's Health and Safety Plan, but rather EPA will review it to ensure that all necessary elements are included, and that the plan provides for the protection of human health and the environment.

4. Treatability Study Work Plan [If applicable]

If needed, Settling Defendant shall prepare a Treatability Study Work Plan for EPA review and approval. The purpose of the Treatability Study is to determine if the particular technology or vendor of this technology is capable of meeting the Performance Standards. As provided for in the Record of Decision, the Treatability Study Work Plan shall describe the technology to be tested, and test objectives, experimental procedures, treatability conditions to be tested, measurements of performance, analytical methods, date management and analysis, health and safety, and residual waste management. The DQOs for the treatability study shall be documented as well. The Treatability Study Work Plan shall also describe pilot plant installation and start-up, pilot plant operation and maintenance procedures, and operating conditions to be tested. If testing is to be performed off-site, permitting requirements shall be addressed. A schedule for performing the treatability study shall be included with specific dates for the tasks, including, but not limited to, the procurement of contractors and the completion of sample collection, performance, sample analysis, and report preparation. The Work Plan shall describe in detail the treatment process and how the proposed vendor or technology will meet the Performance Standards for the Site. Review and approval by EPA shall mean only that EPA considers the proposed technology, vendor, and study approach appropriate for the remedy selected for the Site. The Treatability Study Work Plan shall also address how Settling Defendant[s] propose(s) to meet all discharge requirements for any and all treated material, air, water and expected effluents. Additionally, the Work Plan shall also explain the proposed final treatment and disposal of all material generated by the proposed treatment system. Any and all permitting requirements shall also be addressed.

5. Treatability Study Sampling and Analysis Plan [If applicable]

If EPA determines that the Remedial Design SAP is not adequate for defining the activities to be performed during the Treatability Study, a separate Treatability Study SAP shall be prepared by Settling Defendant for EPA review and approval. It shall be designed to monitor pilot plant performance.

6. Treatability Study Health and Safety Plan [If applicable]

If EPA determines that the Remedial Design Health and Safety Plan is not adequate for defining the activities to be performed during the Treatability Study, a separate Treatability Study Health and Safety Plan shall be developed by Settling Defendant. EPA will not approve Settling Defendant's Health and Safety Plan, but rather EPA will review it to ensure that all necessary elements are included, and that the plan provides for the protection of human health and the environment.

B. Preliminary Design

Preliminary Design shall begin with initial design and shall end with the completion of approximately 30 percent of the design effort. At this stage, Settling Defendant shall field verify, as necessary, the existing conditions of the Site. The technical requirements of the Remedial Action shall be addressed and outlined so that they may be reviewed to determine if the final design will provide an effective remedy. Supporting data and documentation shall be provided with the design documents defining the functional aspects of the project. EPA approval of the Preliminary Design is required before proceeding with further design work, unless specifically authorized by EPA. In accordance with the design management schedule established in the approved Remedial Design Work Plan, Settling Defendant shall submit to EPA the Preliminary Design submittal which shall consist of the following:

1. Results of Data Acquisition Activities

Data gathered during the project planning phase shall be compiled, summarized, and submitted along with an analysis of the impact of the results on design activities. In addition, surveys conducted to establish topography, rights-of-way, easements, and utility lines shall be documented. Utility requirements and acquisition of access, through purchases or easements, that are necessary to implement the RA shall also be discussed.

2. Design Criteria Report

The concepts supporting the technical aspects of the design shall be defined in detail and presented in this report. Specifically, the Design Criteria Report shall include the preliminary design assumptions and parameters, including:

a. Waste characterization
b. Pretreatment requirements
c. Volume of each media requiring treatment
d. Treatment schemes (including all media and by-products)
e. Input/output rates
f. Influent and effluent qualities
g. Materials and equipment

h. Performance Standards
i. Long-term monitoring requirements

3. Preliminary Plans and Specifications

Settling Defendant shall submit an outline of the required drawings, including preliminary sketches and layouts, describing conceptual aspects of the design, unit processes, etc. In addition, an outline of the required specifications, including Performance Standards, shall be submitted. Construction drawings shall reflect organization and clarity, and the scope of the technical specifications shall be outlined in a manner reflecting the final specifications.

4. Plan for Satisfying Permitting Requirements

All activities must be performed in accordance with the requirements of all applicable federal and state laws and regulations. Any off-site disposal shall be in compliance with the policies stated in the Procedure for Planning and Implementing Off-site Response Actions (Federal Register, Volume 50, Number 214, November, 1985, pages 45933 - 45937) and Federal Register, Volume 55, Number 46, March 8, 1990, page 8840, and the National Contingency Plan, Section 300.440. The plan shall identify the off-site disposal/discharge permits that are required, the time required to process the permit applications, and a schedule for submittal of the permit applications.

5. Treatability Study Final Report [If applicable]

If needed, Following completion of the study, Settling Defendant shall submit a report on the performance of the technology to EPA for review and approval. EPA will evaluate the results of the treatability study for completeness and appropriateness based on site conditions. The study results shall indicate clearly the performance of the technology or vendor compared with the Performance Standards established for the Site. The report shall evaluate the treatment technology's effectiveness, implementability, cost, and actual results as compared with predicted results. The report shall also evaluate full-scale application of the technology, including a sensitivity analysis identifying the key parameters affecting full-scale operation. The study results shall be submitted to EPA immediately upon completion of the study. Should the results indicate that the proposed technology will meet the Performance Standards, EPA will instruct Settling Defendant to include the Treatability Study Final Report in the Preliminary Design Report and the study results and operating conditions shall be used in the detailed design of the selected remedy. EPA approval of the Treatability Study Final Report shall mean only that EPA finds the study methodology acceptable. EPA approval of the study, results, or the Treatability Study Final Report shall not imply or be construed to mean that EPA is warranting the performance of this or any vendor or technology. Should the treatability study not be approved by EPA, additional treatability studies may be required to fully evaluate the available treatment systems.

6. Groundwater Monitoring Plan
Settling Defendant shall submit a groundwater monitoring plan that will confirm the no action decision on the hgroundwater.

C. Intermediate Design

Intermediate Design shall begin with completion of the Preliminary Design and end with the completion of approximately 60 percent of the design effort. Settling Defendant shall submit to EPA the Intermediate Design submittal which shall consist of a continuation and expansion of the Preliminary Design submittal as may be modified by any value engineering recommendations adopted by Settling Defendant. Any value engineering recommendations adopted by Settling Defendant shall be summarized in a report submitted with the Intermediate Design. EPA comments on the Intermediate Design and a memorandum indicating how EPA's comments were incorporated shall be included in the Prefinal/Final Design. The Intermediate Design shall be submitted in accordance with the approved design management schedule and shall consist of the following:

1. Draft Design Analyses

   The evaluations conducted to select the design approach shall be described. Design calculations shall be included.

2. Draft Plans and Specifications

   Draft construction drawings and specifications for all components of the Remedial Action shall be prepared and presented. All plans and specifications shall conform with the Construction Specifications Institute Master Format.

3. Draft Construction Schedule

   Settling Defendant shall develop a Draft Construction Schedule for construction and implementation of the remedial action which identifies timing for initiation and completion of all critical path tasks. Settling Defendant shall specifically identify dates for completion of the project and major milestones.

D. Prefinal/Final Design

Settling Defendant shall submit the Prefinal Design when the design work is approximately 90 percent complete in accordance with the approved design management schedule. Settling Defendant shall address comments generated from the Intermediate Design Review and clearly show any modification of the design as a result of incorporation of the comments. Essentially, the Prefinal Design shall function as the draft version of the Final Design. After EPA review and comment on the Prefinal Design, the Final Design shall be submitted along with a memorandum indicating how the Prefinal Design comments were incorporated into the Final Design. All Final Design documents shall be certified by a Professional Engineer registered in the State of Florida. EPA written approval of the Final Design is required before initiating the RA, unless specifically authorized by EPA. The following items shall be submitted with or as part of the Prefinal/Final Design:

1. Complete Design Analyses

   The selected design shall be presented along with an analysis supporting the design approach. Design calculations shall be included.

2. Final Plans and Specifications

   A complete set of construction drawings and specifications shall be submitted

which describe the selected design.

3. Final Construction Schedule

Settling Defendant shall submit a final construction schedule to EPA for approval.

4. Construction Cost Estimate

An estimate within +15 percent to -10 percent of actual construction costs shall be submitted.

TASK III - REMEDIAL ACTION

Remedial Action shall be performed by Settling Defendant to implement the response actions selected in the ROD.

A. Remedial Action Planning

Concurrent with the submittal of the Prefinal/Final Design, Settling Defendant shall submit a draft Remedial Action (RA) Work Plan, Project Delivery Strategy, a Construction Management Plan, a Construction Quality Assurance Plan, and a Construction Health and Safety Plan/Contingency Plan. The RA Work Plan, Project Delivery Strategy, Construction Management Plan, and Construction Quality Assurance Plan must be reviewed and approved by EPA and the Construction Health and Safety Plan/Contingency Plan reviewed by EPA prior to the initiation of the Remedial Action.

Upon approval of the Final Design and the RA Work Plan, Settling Defendant shall implement the RA Work Plan in accordance with the construction management schedule. Significant field changes to the RA as set forth in the RA Work Plan and Final Design shall not be undertaken without the approval of EPA. The RA shall be documented in enough detail to produce as-built construction drawings after the RA is complete. Deliverables shall be submitted to EPA for review and approval in accordance with Section XII of the Consent Decree. Review and/or approval of submittals does not imply acceptance of later submittals that have not been reviewed, nor that the remedy, when constructed, will meet Performance Standards.

1. RA Work Plan

A Work Plan which provides a detailed plan of action for completing the RA activities shall be submitted to EPA for review and approval. The objective of this work plan is to provide for the safe and efficient completion of the RA. The Work Plan shall be developed in conjunction with the Project Delivery Strategy, Construction Management Plan, the Construction Quality Assurance Plan, and the Construction Health and Safety Plan/Contingency Plan, although each plan may be delivered under separate cover. The Work Plan shall include a comprehensive description of the work to be performed and the Final Construction schedule for completion of each major activity and submission of each deliverable.

Specifically, the RA Work Plan shall present the following:

a. A detailed description of the tasks to be performed and a description of the work products to be submitted to EPA. This includes the

deliverables set forth in the remainder of Task III.

b. A schedule for completion of each required activity and submission of each deliverable required by this Consent Decree, including those in this SOW.

c. A project management plan, including provision for monthly reports to EPA and meetings and presentations to EPA at the conclusion of each major phase of the RA. EPA's Project Coordinator and the Settling Defendant's Project Coordinator will meet, at a minimum, on a quarterly basis, unless EPA determines that such meeting is unnecessary.

d. A description of the community relations support activities to be conducted during the RA. At EPA's request, Settling Defendant shall assist EPA in preparing and disseminating information to the public regarding the RA work to be performed.

2. Project Delivery Strategy

Settling Defendant shall submit a document to EPA for review and approval describing the strategy for delivering the project. This document shall address the management approach for implementing the Remedial Action, including procurement methods and contracting strategy, phasing alternatives, and contractor and equipment availability concerns. If the construction of the remedy is to be accomplished by Settling Defendant's "in-house" resources, the document shall identify those resources.

3. Construction Management Plan

A Construction Management Plan shall be developed to indicate how the construction activities are to be implemented and coordinated with EPA during the RA. Settling Defendant shall designate a person to be a Remedial Action Coordinator and its representative on-site during the Remedial Action, and identify this person in the Plan. This Plan shall also identify other key project management personnel and lines of authority, and provide descriptions of the duties of the key personnel along with an organizational chart. In addition, a plan for the administration of construction changes and EPA review and approval of those changes shall be included.

4. Construction Quality Assurance Plan

Settling Defendant shall develop and implement a Construction Quality Assurance Program to ensure, with a reasonable degree of certainty, that the completed Remedial Action meets or exceeds all design criteria, plans and specifications, and Performance Standards. The Construction Quality Assurance Plan shall incorporate relevant provisions of the Performance Standards Verification Plan (see Task V). At a minimum, the Construction Quality Assurance Plan shall include the following elements:

a. A description of the quality control organization, including a chart showing lines of authority, identification of the members of the Independent Quality Assurance Team (IQAT), and acknowledgment that the IQAT will implement the control system for all aspects of the work

specified and shall report to the project coordinator and EPA. The IQAT members shall be representatives from testing and inspection organizations and/or the Supervising Contractor and shall be responsible for the QA/QC of the Remedial Action. The members of the IQAT shall have a good professional and ethical reputation, previous experience in the type of QA/QC activities to be implemented, and demonstrated capability to perform the required activities. They shall also be independent of the construction contractor.

b. The name, qualifications, duties, authorities, and responsibilities of each person assigned a QC function.

c. Description of the observations and control testing that will be used to monitor the construction and/or installation of the components of the Remedial Action. This includes information which certifies that personnel and laboratories performing the tests are qualified and the equipment and procedures to be used comply with applicable standards. Any laboratories to be used shall be specified. Acceptance/Rejection criteria and plans for implementing corrective measures shall be addressed.

d. A schedule for managing submittals, testing, inspections, and any other QA function (including those of contractors, subcontractors, fabricators, suppliers, purchasing agents, etc.) that involve assuring quality workmanship, verifying compliance with the plans and specifications, or any other QC objectives. Inspections shall verify compliance with all environmental requirements and include, but not be limited to, air quality and emissions monitoring records and waste disposal records, etc.

e. Reporting procedures and reporting format for QA/QC activities including such items as daily summary reports, schedule of data submissions, inspection data sheets, problem identification and corrective measures reports, evaluation reports, acceptance reports, and final documentation.

f. A list of definable features of the work to be performed. A definable feature of work is a task which is separate and distinct from other tasks and has separate control requirements.

5. <u>Construction Health and Safety Plan/Contingency Plan</u>

Settling Defendants shall prepare a Construction Health and Safety Plan/Contingency Plan in conformance with Settling Defendant's health and safety program, and in compliance with OSHA regulations and protocols. The Construction Health and Safety Plan shall include a health and safety risk analysis, a description of monitoring and personal protective equipment, medical monitoring, and site control. EPA will not approve Settling Defendant's Construction Health and Safety Plan/Contingency Plan, but rather EPA will review it to ensure that all necessary elements are included, and that the plan provides for the protection of human health and the environment. This plan shall include a Contingency Plan and incorporate Air Monitoring and Spill Control and Countermeasures Plans if determined by EPA to be applicable for the Site. Air Monitoring will be necessary at any site when the site risk

assessment specifies a risk via the inhalation/air transport pathway. The Contingency Plan is to be written for the onsite construction workers and the local affected population. It shall include the following items:

a. Name of person who will be responsible in the event of an emergency incident.

b. Plan for initial site safety indoctrination and training for all employees, name of the person who will give the training and the topics to be covered.

c. Plan and date for meeting with the local community, including local, state and federal agencies involved in the cleanup, as well as the local emergency squads and the local hospitals.

d. A list of the first aid and medical facilities including, location of first aid kits, names of personnel trained in first aid, a clearly marked map with the route to the nearest medical facility, all necessary emergency phone numbers conspicuously posted at the job site (i.e., fire, rescue, local hazardous material teams, National Emergency Response Team, etc.)

e. Plans for protection of public and visitors to the job site.

f. If needed, Air Monitoring Plan which incorporates the following requirements:

1) Air monitoring shall be conducted both on Site and at the perimeter of the Site. The chemical constituents that were identified during the Risk Assessment shall serve as a basis of the sampling for and measurement of pollutants in the atmosphere. Settling Defendant shall clearly identify these compounds and the detection and notification levels required in Paragraph 4 below. Air monitoring shall include personnel monitoring, on-site area monitoring, and perimeter monitoring.

2) Personnel Monitoring shall be conducted according to OSHA and NIOSH regulations and guidance.

3) Onsite Area Monitoring shall consist of continuous real-time monitoring performed immediately adjacent to any waste excavation areas, treatment areas, and any other applicable areas when work is occurring. Measurements shall be taken in the breathing zones of personnel and immediately upwind and downwind of the work areas. Equipment shall include the following, at a minimum: organic vapor meter, explosion meter, particulate monitoring equipment, and onsite windsock.

4) Perimeter Monitoring shall consist of monitoring airborne contaminants at the perimeter of the Site to determine whether harmful concentrations of toxic constituents are migrating off-site. EPA approved methods shall be used for sampling and analysis of air at the Site perimeter. The results of the perimeter air monitoring and the on-site meteorological station shall be used to assess the potential for

off-site exposure to toxic materials. The air monitoring program shall include provisions for notifying nearby residents, local, state and federal agencies in the event that unacceptable concentrations of airborne toxic constituents are migrating off-site. Settling Defendant shall report detection of unacceptable levels of airborne contaminants to EPA in accordance with Section XI of the Consent Decree.

g. A Spill Control and Countermeasures Plan which shall include the following:

1) Contingency measures for potential spills and discharges from materials handling and/or transportation.

2) A description of the methods, means, and facilities required to prevent contamination of soil, water, atmosphere, and uncontaminated structures, equipment, or material by spills or discharges.

3) A description of the equipment and personnel necessary to perform emergency measures required to contain any spillage and to remove spilled materials and soils or liquids that become contaminated due to spillage. This collected spill material must be properly disposed of.

4) A description of the equipment and personnel to perform decontamination measures that may be required for previously uncontaminated structures, equipment, or material.

B. Preconstruction Conference

A Preconstruction Conference shall be held after selection of the construction contractor but before initiation of construction. This conference shall include Settling Defendant[s] and federal, state and local government agencies and shall:

1. Define the roles, relationships, and responsibilities of all parties;

2. Review methods for documenting and reporting inspection data;

3. Review methods for distributing and storing documents and reports;

4. Review work area security and safety protocols;

5. Review the Construction Schedule;

6. Conduct a site reconnaissance to verify that the design criteria and the plans specifications are understood and to review material and equipment storage locations.

The Preconstruction Conference must be documented, including names of people in attendance, issues discussed, clarifications made, special instructions issued, etc.

C. Prefinal Construction Inspection

Upon preliminary project completion Settling Defendant shall notify EPA for the purpose of conducting a Prefinal Construction Inspection. Participants should include the Project

Coordinators, Supervising Contractor, Construction Contractor, Natural Resource Trustees and other federal, state, and local agencies with a jurisdictional interest. The Prefinal Inspection shall consist of a walk-through inspection of the entire project site. The objective of the inspection is to determine whether the construction is complete and consistent with the Consent Decree. Any outstanding construction items discovered during the inspection shall be identified and noted on a punch list. Additionally, treatment equipment shall be operationally tested by Settling Defendant. Settling Defendant shall certify that the equipment has performed to effectively meet the purpose and intent of the specifications. Retesting shall be completed where deficiencies are revealed. A Prefinal Construction Inspection Report shall be submitted by Settling Defendant which outlines the outstanding construction items, actions required to resolve the items, completion date for the items, and an anticipated date for the Final Inspection.

D. Final Construction Inspection

Upon completion of all outstanding construction items, Settling Defendant shall notify EPA for the purpose of conducting a Final Construction Inspection. The Final Construction Inspection shall consist of a walk-through inspection of the entire project site. The Prefinal Construction Inspection Report shall be used as a check list with the Final Construction Inspection focusing on the outstanding construction items identified in the Prefinal Construction Inspection. All tests that were originally unsatisfactory shall be conducted again. Confirmation shall be made during the Final Construction Inspection that all outstanding items have been resolved. Any outstanding construction items discovered during the inspection still requiring correction shall be identified and noted on a punch list. If any items are still unresolved, the inspection shall be considered to be a Prefinal Construction Inspection requiring another Prefinal Construction Inspection Report and subsequent Final Construction Inspection.

E. Final Construction Report

Within thirty (30) days following the conclusion of the Final Construction Inspection, Settling Defendant shall submit a Final Construction Report. EPA will review the draft report and will provide comments to Settling Defendant. The Final Construction Report shall include the following:

1. Brief description of how outstanding items noted in the Prefinal Inspection were resolved;

2. Explanation of modifications made during the RA to the original RD and RA Work Plans and why these changes were made;

3. As-built drawings.

4. Synopsis of the construction work defined in the SOW and certification that the construction work has been completed.

F. Remedial Action Report

As provided in Section XV of the Consent Decree, within 90 days after Settling Defendant concludes that the Remedial Action has been fully performed and the Performance Standards have been attained, Settling Defendant shall so certify to the United States and shall schedule and conduct a pre-certification inspection to be attended by EPA and Settling Defendant. If after the pre-certification inspection Settling Defendant still believes that the Remedial Action has been fully performed and the Performance Standards have been attained, Settling Defendant

shall submit a Remedial Action (RA) Report to EPA in accordance with Section XV of the Consent Decree. The RA Report shall include the following:

1. A copy of the Final Construction Report;
2. Synopsis of the work defined in this SOW and a demonstration in accordance with the Performance Standards Verification Plan that Performance Standards have been achieved;
3. Certification that the Remedial Action has been completed in full satisfaction of the requirements of the Consent Decree, and;
4. A description of how Settling Defendant will Implement any remaining part of the EPA approved Operation and Maintain Plan.

After EPA review, Settling Defendant shall address any comments and submit a revised report. As provided in Section XV of the Consent Decree, the Remedial Action shall not be considered complete until EPA approves the RA Report.

## TASK IV - OPERATION AND MAINTENANCE

Operation and Maintenance (O&M) shall be performed in accordance with the approved Operation and Maintenance Plan.

O&M submittals should take into account the complexity of the remedial action. Both the O&M Plan and O&M Manual may be submitted together. For remedial actions involving no treatment (i.e., containment), submittal of these documents should be requested at the 90 percent design stage. For remedial actions involving treatment, submittal should occur at approximately the 30 percent construction stage.

### A. Operation and Maintenance Plan

At the [90 percent (Prefinal) design stage/30 percent construction stage], Settling Defendant shall submit an Operation and Maintenance Plan for review. The Operation and Maintenance Plan must be reviewed and approved by EPA prior to initiation of Operation and Maintenance activities. If necessary, the Operation and Maintenance Plan shall be modified to incorporate any design modifications implemented during the Remedial Action.

Upon approval of the Operation and Maintenance Plan, Settling Defendant shall implement the Operation and Maintenance Plan in accordance with the schedule contained therein. This plan shall describe start-up procedures, operation, troubleshooting, training, and evaluation activities that shall be carried out by Settling Defendant. The plan shall address the following elements:

1. Equipment start-up and operator training;

    a. Technical specifications governing treatment systems;

    b. Requirements for providing appropriate service visits by experienced personnel to supervise the installation, adjustment, start-up and operation of the systems; and,

    c. Schedule for training personnel regarding appropriate operational procedures once start-up has been successfully completed.

2. Description of normal operation and maintenance;

   a. Description of tasks required for system operation;

   b. Description of tasks required for system maintenance;

   c. Description of prescribed treatment or operating conditions; and

   d. Schedule showing the required frequency for each O&M task.

3. Description of potential operating problems;

   a. Description and analysis of potential operating problems;

   b. Sources of information regarding problems; and
   c. Common remedies or anticipated corrective actions.

4. Description of routine monitoring and laboratory testing;

   a. Description of monitoring tasks;

   b. Description of required laboratory tests and their interpretation;

   c. Required QA/QC; and

   d. Schedule of monitoring frequency and date, if appropriate, when monitoring may cease.

5. Description of alternate O&M;

   a. Should system fail, alternate procedures to prevent undue hazard; and

   b. Analysis of vulnerability and additional resource requirements should a failure occur.

6. Safety Plan;

   a. Description of precautions to be taken and required health and safety equipment, etc., for site personnel protection, and

   b. Safety tasks required in the event of systems failure.

7. Description of equipment;

   a. Equipment identification;

   b. Installation of monitoring components;

   c. Maintenance of site equipment; and

   d. Replacement schedule for equipment and installation components.

8. Records and reporting;

   a. Daily operating logs;

   b. Laboratory records;

   c. Records of operating cost;

   d. Mechanism for reporting emergencies;

   e. Personnel and Maintenance Records; and

   f. Monthly reports to State/Federal Agencies.

B. Operation and Maintenance Manual

At the [90 percent (Prefinal) design stage/30 percent construction stage], Settling Defendant shall submit an O&M manual for review. This manual shall include all necessary O&M information for the operating personnel. The O&M manual must be reviewed and approved by EPA prior to initiation of Operation and Maintenance activities.

TASK V - PERFORMANCE MONITORING

Performance monitoring shall be conducted to ensure that all Performance Standards are met.

A. Performance Standards Verification Plan

The purpose of the Performance Standards Verification Plan is to provide a mechanism to ensure that both short-term and long-term Performance Standards for the Remedial Action are met. Guidances used in developing the Sampling and Analysis Plan during the Remedial Design phase shall be used. Settling Defendant shall submit a Performance Standards Verification Plan with the Intermediate Design. Once approved, Settling Defendant shall implement the Performance Standards Verification Plan on the approved schedule. The Performance Standards Verification Plan shall include:

1. The Performance Standards Verification Field Sampling and Analysis Plan that provides guidance for all fieldwork by defining in detail the sampling and data gathering methods to be used. The Performance Standards Verification Field Sampling and Analysis Plan shall be written so that a field sampling team unfamiliar with the Site would be able to gather the samples and field information required.

2. The Performance Standards Verification Quality Assurance/Quality Control plan that describes the quality assurance and quality control protocols which will be followed in demonstrating compliance with Performance standards.

3. Specification of those tasks to be performed by Settling Defendant to demonstrate compliance with the Performance Standards and a schedule for the performance of these tasks.

## REFERENCES

The following list, although not comprehensive, comprises many of the regulations and guidance documents that apply to the RD/RA process. Settling Defendant shall review these guidances and shall use the information provided therein in performing the RD/RA and preparing all deliverables under this SOW.


1. "National Oil and Hazardous Substances Pollution Contingency Plan, Final Rule", Federal Register 40 CFR Part 300, March 8, 1990.

2. "Superfund Remedial Design and Remedial Action Guidance," U.S. EPA, Office of Emergency and Remedial Response, June 1986, OSWER Directive No. 9355.O-4A.

3. "Interim Final Guidance on Oversight of Remedial Designs and Remedial Actions Performed by Potentially Responsible Parties," U.S. EPA, Office of Emergency and Remedial Response, February 14, 1990, OSWER Directive No. 9355.5-01.

4. "Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA, Interim Final," U.S. EPA, Office of Emergency and Remedial Response, October 1988, OSWER Directive No. 355.3-01.

5. "A Compendium of Superfund Field Operations Methods," Two Volumes, U.S. EPA, Office of Emergency and Remedial Response, EPA/540/P-87/001a, August 1987, OSWER Directive No. 9355.0-14.

6. "EPA NEIC Policies and Procedures Manual," EPA-330/9-78-001-R, May 1978, revised November 1984.

7. "Data Quality Objectives for Remedial Response Activities," U.S. EPA, Office of Emergency and Remedial Response and Office of Waste Programs Enforcement, EPA/540/G-87/003, March 1987, OSWER Directive No. 9335.0-7B.

8. "Guidelines and Specifications for Preparing Quality Assurance Project Plans," U.S. EPA, Office of Research and Development, Cincinnati, OH, QAMS-004/80, December 29, 1980.

9. "Interim Guidelines and Specifications for Preparing Quality Assurance Project Plans," U.S. EPA, Office of Emergency and Remedial Response, QAMS-005/80, December 1980.

10. "Users Guide to the EPA Contract Laboratory Program," U.S. EPA, Sample Management Office, August 1982.

11. "Environmental Compliance Branch Standard Operating Procedures and Quality Assurance Manual," U.S. EPA Region IV, Environmental Services Division, February 1, 1991, (revised periodically).

12. "USEPA Contract Laboratory Program Statement of Work for Organics Analysis," U.S. EPA, Office of Emergency and Remedial Response, February 1988.

13. "USEPA Contract Laboratory Program Statement of Work for Inorganics Analysis," U.S. EPA, Office of Emergency and Remedial Response, July 1988.

14. "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.

15. "Interim Guidance on Compliance with Applicable or Relevant and Appropriate Requirements," U.S. EPA, Office of Emergency and Remedial Response, July 9, 1987, OSWER Directive No. 9234.0-05.

16. "CERCLA Compliance with Other Laws Manual," Two Volumes, U.S. EPA, Office of Emergency and Remedial Response, August 1988 (Draft), OSWER Directive No. 9234.1-01 and -02.

17. "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.

18. "Guide for Conducting Treatability Studies Under CERCLA," U.S. EPA, Office of Emergency and Remedial Response, Pre-publication Version.

19. "Health and Safety Requirements of Employees Employed in Field Activities," U.S. EPA, Office of Emergency and Remedial Response, July 12, 1981, EPA Order No. 1440.2.

20. "Standard Operating Safety Guides," U.S. EPA, Office of Emergency and Remedial Response, November 1984.

21. "Standards for General Industry," 29 CFR Part 1910, Occupational Health and Safety Administration.

22. "Standards for the Construction Industry," 29 CFR 1926, Occupational Health and Safety Administration.

23. "NIOSH Manual of Analytical Methods," 2d edition. Volumes I - VII, or the 3rd edition, Volumes I and II, National Institute of Occupational Safety and Health.

24. "Occupational Safety and Health Guidance Manual 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.

25. "TLVs - Threshold Limit Values and Biological Exposure Indices for 1987 - 88," American Conference of Governmental Industrial Hygienists.

26. "American National Standards Practices for Respiratory Protection," American National Standards Institute Z88.2-1980, March 11, 1981.

27. "Quality in the Constructed Project - Volume 1," American Society of Civil Engineers, 1990.

[Other guidances referenced in CD that are not listed above (i.e. QA, Sample and Data Analysis, etc.)]

SUMMARY OF THE MAJOR DELIVERABLES FOR THE
REMEDIAL DESIGN AND REMEDIAL ACTION AT
THE JACKSONVILLE ASH SUPERFUND SITE
[OPERABLE UNIT NUMBERS 1& 2]

| DELIVERABLE | EPA RESPONSE |
|---|---|
| TASK I PROJECT PLANNING | |
| No deliverables planned as part of Task I. | |
| TASK II REMEDIAL DESIGN | |
| RD Work Plan (15*) | Review and Approve |
| Sampling and Analysis Plan (15) | Review and Approve |
| Health and Safety Plan (5) | Review and Comment |
| If needed, Treatability Study Work Plan (15) | Review and Approve |
| If needed, Treatability Study Sampling and Analysis Plan (15) | Review and Approve |
| If needed, Treatability Study Health and Safety Plan (5)] | Review and Comment |
| Preliminary Design | |
| Results of Data Acquisition Activities (10) | Review and Approve |
| Design Criteria Report (10) | Review and Approve |
| Preliminary Plans and Specifications (10) | Review and Approve |
| Plan for Satisfying Permitting Requirements (10) | Review and Approve |
| Treatability Study Final Report (10) | Review and Approve |
| Intermediate Design | |
| Draft Design Analyses (10) | Review and Comment |
| Draft Plans and | Review and Comment |

| | |
|---|---|
| Specifications (10) | |
| Draft Construction Schedule | Review and Comment |
| Prefinal/Final Design | |
| Complete Design Analyses (10) | Review and Approve |
| Final Plans and Specifications (10) | Review and Approve |
| Final Construction Schedule (10) | Review and Approve |
| Construction Cost Estimate (5) | Review and Comment |
| TASK III REMEDIAL ACTION | |
| RA Work Plan (15) | Review and Approve |
| Project Delivery Strategy (10) | Review and Approve |
| Construction Management Plan (10) | Review and Approve |
| Construction Quality Assurance Plan (10) | Review and Approve |
| Construction Health and Safety Plan/Contingency Plan (5) | Review and Comment |
| Prefinal Construction Inspection Report (5) | Review and Approve |
| Final Construction Report (5) | Review and Approve |
| Remedial Action Report (10) | Review and Approve |
| TASK IV OPERATION AND MAINTENANCE | |
| Operation and Maintenance Plan (10) | Review and Approve |
| Operation and Maintenance Manual (5) | Review and Approve |
| TASK V Monitoring | |
| Performance Standards Verification Plan (15) | Review and Approve |

* NOTE: The number in parenthesis indicates the number of copies to be submitted by Respondents. One copy shall be unbound, the remainder shall be bound.