STATEMENT OF WORK

Administrative Order on Consent No. CERCLA 10-2004-0065

Alaska Railroad Corporation
Anchorage Terminal Reserve

Section 1: Introduction

This Statement of Work (SOW) provides an overview of work that Respondent will carry out as it implements an integrated Remedial Investigation and Feasibility Study (RI/FS) regarding hazardous substance releases and a Resource Conservation and Recovery Act (RCRA) Facility Investigation/ Corrective Measures Study (RFI/CMS) regarding releases of other materials that are solid wastes, such as materials within the CERCLA petroleum exclusion, at its Anchorage, Alaska Terminal Reserve (the "Site"). For purposes of this SOW and any deliverables arising therefrom, the RI/FS and RFI/CMS processes shall be referred to collectively as "RI/FS."

This RI/FS SOW is attached to the Administrative Order on Consent (AOC) for the Site, and is a supporting document for the AOC. The AOC is based on both Section 106 of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and Section 7003 of RCRA. The requirements of this SOW apply to all the work conducted under the AOC, whether performed under the authority of CERCLA, RCRA or both.

This SOW is meant to provide an overview of the scope of work contemplated rather than a detailed account of the tasks to be conducted. The descriptions of technical work provided in this SOW are intended to provide additional information to guide the performance of the work required under the AOC and are not intended to change the meaning of any AOC provisions. Any discrepancies between the AOC and SOW are unintended, and wherever necessary the AOC will control in any interpretive conflicts. The actions addressed by this SOW include 1) development of relevant and currently available background information regarding the Site, 2) a conceptual scope of work for the RI, risk assessments and FS; 3) Respondent's commitment to implement the specific Interim Actions listed in Section 2.2.2 of this SOW, and performance of additional Interim Actions during the course of the RI/FS in accordance with the AOC; 4) reporting mechanisms; and 5) an RI/FS iterative

approach that may involve other parties at some future point in the process. This SOW is consistent with both CERCLA and the National Contingency Plan (NCP).

The purposes of the RI/FS are to 1) investigate the nature and extent of contamination at the Site, 2) identify the need for and range of potential remedial alternatives, 3) assess the potential risk to human health and the environment caused by Site contaminants, 4) develop Site-specific remedial action and corrective measure objectives (collectively, "RAOs"), 4) evaluate potential remedial alternatives that may encompass both CERCLA remedial actions and RCRA corrective measures, and 5) recommend a preferred remedial alternative.

The RI and FS are interactive and will be conducted concurrently, to the extent practicable, in a manner that allows information and data collected during the RI to influence the development of RAOs and remedial alternatives during the FS. The RAOs and remedial alternatives will, in turn, affect additional information and data needs and the scope of any necessary treatability studies and risk assessments, taking into consideration zoning designations and expected future development of the Site. The work under this SOW may be conducted in phases in an iterative approach to collect and evaluate the data and information needed to meet the objectives of this work. Respondent may propose and EPA may approve at any time exclusion of certain portions of the Site from all or part of the work under this SOW, based on appropriate factors such as the absence of contaminants above risk screening levels at such areas.

Respondent will conduct the RI/FS and will produce draft RI and FS reports that are in accordance with the AOC. The RI/FS will be consistent with the *Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA*, (U.S. EPA, Office of Emergency and Remedial Response, October 1988); *Data Quality Objectives (DQOs) Planning Process*, (EPA QA/G-4, August 2000), the *RCRA Facility Investigation (RFI) Guidance* (U.S. EPA Office of Solid Waste and Emergency Response, May 1989); *RCRA Corrective Action Plan*, (U.S. EPA, Office of Solid Waste, May 1994); and other guidance that EPA uses in conducting an RI/FS. EPA recognizes that not all of the guidance that can be used for RI/FS purposes may be applicable here. EPA has authority under the NCP to determine when application of any guidance would be inappropriate. Respondent may raise issues regarding the guidance documents it considers appropriate during implementation of the AOC and in particular may propose that the Site qualifies for accelerated RI and FS procedures as authorized under EPA guidance documents. EPA's decisions regarding guidance applicability will be incorporated into EPA correspondence approving project deliverables or in other written EPA correspondence as appropriate.

The RI/FS *Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA* describes the report format and the required report content for the draft RI and FS reports. Respondent will furnish all necessary personnel, materials and services needed for performing the RI/FS, except as may be otherwise specified in the AOC.

During implementation of the AOC, Respondent will prepare and submit to EPA an Interim Action Report that consists of (1) an identification of any prospective IAs that Respondent may propose carrying out; (2) a rationale for proposal of such prospective IAs based on existing information; and (3) an identification of any new data needed for making decisions on potential IAs. The AOC does not require Respondent to implement such Interim Actions except as EPA and Respondent may agree. Respondent may be required to carry out non-voluntary Interim Actions only pursuant to other administrative or judicial orders. Respondent's evaluation of candidate Interim Actions in the Interim Action Report may be updated based on data collected during implementation of the AOC whenever Respondent deems appropriate or voluntarily upon EPA request. Respondent and EPA will discuss potential updates to the Interim Action Report as appropriate during the AOC implementation. Notwithstanding the above, Respondent agrees to perform the specific Interim Actions identified in Section 2.2.2 of this SOW in accordance with the procedures specified in that section.

Respondent may propose that the RI/FS be conducted in phases to facilitate, among other things, the assistance and involvement of tenants or others with potential liability for contamination at or from the Anchorage Terminal Reserve. Respondent's proposed RI/FS Work Plan or other work plans required under this SOW may further identify certain areas of the Anchorage Terminal Reserve where Interim Actions or the activities necessary to the completion of the RI/FS required by this AOC may be carried out by parties other than Respondent. Existing information or other information obtained as a result of such activities conducted by other parties may be used by Respondent to satisfy the requirements of this AOC. All work plans proposed by Respondent under this AOC will be subject to EPA review and approval consistent with Section XI of the AOC, and subject to dispute resolution consistent with Section XVII of the AOC.

At the completion of the RI/FS, EPA will be responsible for the selection of a Site remedy or series of remedies and will document this selection both with respect to hazardous substance releases to be addressed under CERCLA and releases of solid wastes that are not CERCLA hazardous substances, which will be addressed under RCRA. The remedial alternatives selected by EPA will meet the cleanup standards specified in Section 121 of CERCLA; the selected remediation will be protective of human health and the environment, will be in compliance with, or include a waiver of, applicable or relevant and appropriate requirements (ARARs) of all other state and federal laws, will be cost-effective, will utilize permanent solutions and alternative treatment technologies or resource recovery technologies, to the maximum extent practicable, and will address the statutory preference for treatment as a principal element, as appropriate under the NCP. The final RI/FS report, as approved by EPA, will, with the administrative record, form the basis for the selection of the Site remedy and will provide the information necessary to support development of the ROD.

Section 2: Task 1—Scoping (RI/FS Guidance, Chapter 2)

Respondent will initiate the RI/FS effort by preparing an RI/FS work plan. Because the work required to perform the RI/FS is not fully known at this time, and will occur in an iterative approach as appropriate, it may be necessary to add addenda to the RI/FS Work Plan during implementation of the AOC to satisfy project objectives. The project scope must consider 1) constituents of potential concern at the Site, 2) known or suspected sources of soil, groundwater, surface water and sediment contamination for such constituents, including information and data generated from previous investigations, and 3) the reasonably anticipated future use or uses of the Site. The objectives of the work required under this AOC have been determined preliminarily, based on available information, to include the following:

1. Human health protection with respect to exposure to Site contaminants at or from the Site in soils, groundwater, surface water and sediments including exposures occurring from expected use of Ship Creek and its banks for recreation, occupational activities, and consumption of resident fish;

2. Protection of benthic invertebrates, resident fish and wildlife receptors of such aquatic life that may be affected by potential water or sediment contamination in Ship Creek.

Respondent will incorporate in the RI/FS Work Plan, and any subsequent work plans or addenda, problem formulations that articulate what technical decisions need to be made and define the information and data required to make those decisions. Respondent will prepare sampling and analysis plans to ensure that collection and analytical activities result in data that meet Site-specific data quality objectives (DQOs). Respondent will use the DQOs planning process, and other relevant EPA guidance in conducting the RI/FS, to develop sampling designs for information and data collection activities that support problem formulation and decision-making consistent with the concentration levels required to meet the RAOs. Respondent will propose in any subsequent RI/FS Work Plan revisions whether additional or different information and data are needed and, if so, the design of each information and data collection effort. Respondent may also propose a decision framework that can be applied to the information generated during each data collection effort. This decision framework may aid EPA in determining whether additional data will be required.

Respondent will develop an RI/FS Work Plan and risk assessment approach that addresses these goals in the selection of potential remedial actions or corrective measures. During scoping for the RI/FS Work Plan and for the risk assessment approach, Respondent will meet with EPA to discuss all appropriate project planning decisions and any special concerns associated with the Site.

2.1 Scoping Tasks

The scoping tasks for the RI/FS will consist of the following subtasks:

1. Subtask 2a: Data Compilation/Site Background Report

2. Subtask 2b: Data Review & RI Planning
   – Preliminary Conceptual Site Model
   – Preliminary Field Sampling

3. Subtask 2c: Preliminary FS Planning Tasks
   – RAO Technical Memorandum

4. Subtask 2d: Identification of Potential Interim Actions

5. Subtask 2e: Development of RI/FS Work Plan

Respondent will develop a proposed schedule for completing the scoping tasks identified in this section that precede the submittal of the RI/FS Work Plan. Respondent will submit this proposed schedule within 15 days of the effective date of the AOC. This schedule shall not create any conflicts with the deliverable schedule specified in the AOC.

2.2 Subtask 2a: Data Compilation/Site Background (RI/FS Guidance, Chapter 2.2)

Respondent will gather, evaluate, and present the existing Site information and data, conduct a Site visit with EPA, and conduct preliminary field evaluations to assist in planning the scope of the RI/FS. The objectives of this subtask are as follows:

1. identify and compile applicable historical information and data that are of acceptable quality for use during the RI/FS process;

2. identify relevant existing studies regarding the characteristics of environmental media and the condition of receptor populations;

3. identify useable information and data from current and historical studies for use in developing a conceptual site model (CSM);

4. collect and analyze existing information and data and document the need for additional information and data to the extent practicable. Before planning RI/FS activities, existing Site information and data described above will be compiled and reviewed by Respondent, and used to develop a preliminary CSM. Specifically, this will include presently available information and data relating to the types and quantities/ concentrations of hazardous substances

and/or solid wastes (including petroleum products) released to the environment at the Site, and past disposal practices and/or releases (including spills and point discharges) that may have impacted the Site. This will include results from any previous sampling events that may have been conducted. Information regarding potential upgradient sources of contamination also will be collected and evaluated.

Respondent will develop DQOs for evaluating the collected information. The DQOs will be focused on determining which collected information is appropriate for incorporation into a Site database. After EPA review of the collected information and approval of the DQOs, Respondent will incorporate acceptable data and information into a single relational database.

By no later than the date for submittal of the Site Background Report, Respondent will submit a proposal for design of the relational database for EPA's approval. At a minimum, the database will support geographic information system (GIS) presentation of information and data, and Respondent will present information and data relevant to the decision-making process in this format during the course of the RI/FS.

Existing information and data will be utilized to help determine data gaps in Site characterization (including determination of background), identify chemicals of potential concern, develop a preliminary CSM, identify potential risks to human health and the environment, better define potential ARARs, and develop a range of potential remedial alternatives to address any releases identified at that point that may exceed applicable risk levels. Respondent will also provide electronic and database files directly to EPA to allow independent review and analysis of information and data.

2.2.1 Conduct Project Meeting

Respondent and EPA personnel with management or oversight responsibilities regarding the RI/FS will conduct a meeting to discuss any particular concerns or issues regarding the Site or the RI/FS process.

2.2.2. Initial Interim Actions

Respondent has proposed and EPA has approved the following Interim Actions at the Site that the Parties anticipate can be performed during 2004. Respondent will implement these Interim Actions as specified below. Where these actions require Respondent to develop work plans, the work plans shall meet the criteria set forth in AOC Paragraphs 42-43.

2.2.2.1 Ship Creek assessment literature study and potential sediment sampling, analysis and biological testing

Respondent will collect and review existing analytical data, studies, reports, assessments and other information to assist in developing an early understanding of sources, areas of potential contamination, potential exposure pathways and potential biological impacts with respect to Ship Creek. Respondent will submit a report to EPA within 15 days of the effective date of this AOC summarizing this existing information. Such report shall identify any significant data gaps regarding potential contamination and biological impacts at Ship Creek that can be addressed by field sampling and assessment in 2004. Unless otherwise directed by EPA, such report shall also be accompanied by a proposal for field studies to be conducted in 2004. The studies specified in the proposal may include Ship Creek sediment and detritus sampling, bioassays of benthic macroinvertebrate organisms, and/or other field work. Respondent will prepare an Interim Action work plan in accordance with the AOC and submit that to EPA following EPA's approval of the proposed field study.

2.2.2.2 Soil and/or groundwater sampling at northern boundary of the Site

Releases of solvents, fuel or other constituents from upgradient sources may enter the Site at its northern boundary. Respondent will develop a work plan for field work that can be conducted during 2004 to investigate and potentially identify some locations at Respondent-owned property along these boundaries where such releases may have occurred or be occurring. The work plan will include a summary of relevant existing information regarding releases from upgradient areas that may have affected or be affecting the Site, and include a sampling and analysis plan for groundwater and soil samples that will be obtained during the field work. Respondent will submit this work plan to EPA for review and approval within 60 days after the effective date of the AOC.

2.3 Subtask 2b: Data Review and RI Planning

Respondent will review the information compiled in Task 2a and identify, to the extent practicable and based on application of relevant EPA guidance, data needed to complete the RI/FS. The analysis will identify additional information and data that will be required to determine the nature and extent of contamination, complete the baseline human health and ecological risk assessments, and identify and screen remedial action and corrective measure alternatives. The analysis will include the preparation of a preliminary CSM.

2.3.1 Preliminary Conceptual Site Model (CSM)

The preliminary CSM will portray the relationship among chemicals of potential concern, their sources, transport mechanisms (including potential mechanisms and conduits for soil, sediments, surface water, and groundwater transport),

receptors, and other parameters that are determined to be relevant during implementation of the AOC.

The preliminary CSM for the ecological risk assessment (ERA) will include species and their habitats that could be impacted by Site-related contamination based on information generated during the historical review and will show the relationships among species and potential exposure pathways. The preliminary CSM for the human health risk assessment (HHRA) will include potential exposure pathways.

2.3.2 Preliminary Analytical Concentration Goals

Preliminary analytical concentration goals will be developed as part of the planning process to assist in selecting appropriate analytical methods and setting analytical DQOs for human health and ecological exposure pathways identified in the CSM. Respondent will consider the following data requirements and analytical levels, as appropriate, in developing these analytical goals:

1. chemical-specific ARARs, risk-based screening levels and preliminary remediation goals (PRGs);

2. location-specific ARARs, including sediment concentrations for protection of benthic invertebrates;

3. published fish tissue concentrations for protection of resident fish and wildlife; and

4. method detection limits for standardized analytical methods for soil, groundwater, surface water and sediment sampling.

2.4 Subtask 2c: Preliminary FS Planning Tasks

As part of the planning process for the FS, Respondent will prepare the RAO technical memorandum and an assessment of the data needed to evaluate natural attenuation options.

2.4.1 RAO Technical Memorandum

Respondent will submit a draft technical memorandum to EPA that identifies preliminary RAOs. The RAOs identified by Respondent will include a range of broadly defined potential RAOs and associated technologies and be consistent with CERCLA, the NCP, and EPA interpretive guidance. The range of potential alternatives will encompass, where appropriate, alternatives in which treatment significantly reduces the toxicity, mobility, or volume of the waste; alternatives that involve containment with little or no treatment; alternatives that include removal of waste, and a no-action alternative. Respondent will include, as appropriate, excavation, capping, in-situ treatment, monitored and enhanced natural attenuation, and other alternatives (as well as combinations of each

where called for) in the range of alternatives, and will include this analysis in the RAO technical memorandum.

The memorandum will include a preliminary identification of potential state and federal ARARs (chemical-specific, location-specific, and action-specific), in accordance with the NCP, to assist in the refinement of RAOs. Respondent will also identify other advisories, criteria, guidance, and other "to be considered" initiatives. Respondent will update this ARAR identification during implementation of the AOC as Site conditions, contaminants of concern, and RAOs become better defined.

If remedial actions or corrective measures involving treatment are identified by Respondent in the draft technical memorandum, or are identified by EPA prior to final approval of the RAO technical memorandum, treatability studies may be required. Where treatability studies are needed, initial treatability testing activities (such as research and study design) should occur concurrently with implementation of the RI/FS Work Plan.

2.4.2 Natural Attenuation Data Gaps

Respondent will identify the data needed to evaluate natural attenuation options, and include collection of this data in a RI planning task so that it is available when needed.

2.5 Subtask 2d: Identification and Evaluation of Potential Interim Actions

Respondent will submit an Interim Action Report to EPA as specified in the AOC that includes a description of any prospective Interim Actions that Respondent proposes to carry out. Interim Actions for purposes of the AOC include removal actions for CERCLA hazardous substances and measures under RCRA that address solid wastes that are not CERCLA hazardous substances. Any proposed Interim Actions that Respondent includes in this report will be based on existing information and data at the time the report is submitted to EPA. At any time during the effective period of the AOC, Respondent may elect or EPA may request Respondent to update the report and/or make further proposals for Interim Actions based on the information and data that are obtained during the RI/FS. Interim Actions that constitute CERCLA removal or remedial actions will comply with applicable NCP requirements.

2.6 Subtask 2e: RI/FS Work Plan (RI/FS Guidance, Chapter 2.3.1)

Respondent will submit a draft RI/FS Work Plan for the Site to EPA, which incorporates information and data obtained during implementation of subtasks 2a through 2d. The RI/FS Work Plan will be developed in conjunction with a sampling and analysis plan, which will consist of a field sampling plan, a quality assurance project plan, and a Site health and safety plan, although each plan

may be delivered under separate cover. Each approved work plan will include a description of the work to be performed, including a brief overview of the methodologies to be utilized, as well as a corresponding schedule for completion. In addition, each approved work plan must include the rationale for performing the required activities.

The draft RI/FS Work Plan will include a table that shows the relationship between the preliminary RAOs, identified data gaps, and sampling locations proposed by Respondent in the work plan. The RI/FS Work Plan will include a presentation of DQOs associated with each proposed information and data collection effort, and maps/GIS tools depicting the Site's physiography, hydrology, geology, land use, and ecological and natural resource features.

The draft RI/FS Work Plan will include a summary (including graphical and geographic information system depictions as appropriate) of the existing information and data in terms of physical and chemical characteristics of the contaminants identified, and their distribution among environmental media at the Site. The RI/FS Work Plan will incorporate the information and data from Task 2a.

Most importantly, Respondent will incorporate into the RI/FS Work Plan a description of all tasks to be performed, information and resources needed to perform each task, information to be produced during and at the conclusion of each task, a description of the work products that will be submitted to EPA, and the decision-making processes that will be followed by Respondent to interpret results and make recommendations for future efforts under the RI/FS. Specific decision points will be identified in the RIFS Work Plan.

The RI/FS Work Plan will include a project management plan, including a data management plan (e.g., requirements for project management systems and software, minimum data requirements, data format and backup data management). The RI/FS Work Plan will include a schedule for monthly reports to EPA as well as meetings and presentations to EPA at the conclusion of each major phase that has been identified as a critical decision point during implementation of the AOC. If Respondent determines that a phased approach to information and data generation is appropriate, the RI/FS Work Plan will include the basis for that determination, and how each subsequent phase of the work will flow from previous phases. Respondent will refer to Appendix B of the RI/FS Guidance for a comprehensive description of the contents of the required work plan. The RI/FS Work Plan will also include a description of the general approach for conducting the baseline risk assessments. Respondent or EPA may identify during the RI/FS process the need for additional or different information and data. Respondent is responsible for fulfilling additional information and data and analysis needs that Respondent or EPA identifies, consistent with the AOC.

2.6.1 Sampling and Analysis Plan (RI/FS Guidance, Chapter 2.3.2)

Respondent will prepare a sampling and analysis plan (SAP) to ensure that sample collection and analytical activities are conducted in accordance with technically acceptable protocols. The SAP provides a mechanism for planning field activities and, as specified in the NCP, 40 CFR 300.420(c)(4) and 300.430(b)(8), consists of a field sampling plan (FSP) and a quality assurance project plan (QAPP). These documents may be combined.

The FSP will define in detail the sampling and data-gathering methods that will be used on the project. It will include sampling quality assurance objectives, sample location and frequency, sampling equipment and procedures, and sample handling and laboratory analysis. The QAPP will describe the project objectives and organization, functional activities, and quality assurance and quality control (QA/QC) protocols that will be used. The laboratory QA/QC will, at a minimum, reflect use of analytic methods to identify contamination consistent with the levels for RAOs identified in Subtask 2c. In addition, the QAPP will address sampling procedures, sample custody, analytical procedures, data reduction, validation, reporting, personnel qualifications and, where appropriate, innovative and streamlined data collection techniques.

Respondent will demonstrate in the SAP that each laboratory it may use is qualified to conduct the proposed work. This includes use of methods and analytical protocols for the chemicals of concern in the media of interest within detection and quantification limits consistent with both QA/QC procedures and DQOs approved in the QAPP. The laboratory must have and follow an approved QA program. If the laboratory is not in the CLP program, a laboratory QA program must be submitted for EPA review and approval. EPA may require that Respondent submit information demonstrating that the laboratory is qualified to conduct the work, including information on personnel qualifications, equipment, and material specifications. Respondent will provide assurances that EPA has access to laboratory personnel, equipment, and records for sample collection, transportation, and analysis.

2.6.2 Site Health and Safety Plan (RI/FS Guidance, Chapter 2.3.3)

A health and safety plan will be prepared in conformance with Respondent's health and safety programs, and in compliance with OSHA and FRA regulations and protocols. The health and safety plan will include the eleven (11) elements described in the RI/FS Guidance, such as a health and safety risk analysis, a description of monitoring and personal protective equipment, medical monitoring, and Site control. It should be noted that EPA does not "approve" Respondent's health and safety plan, but rather EPA reviews it to ensure that all necessary elements are included, and that the plan provides for the protection of human health and the environment.

Section 3: Task 3—Community Involvement

The development and implementation of community involvement activities are the responsibility of EPA. Respondent may be requested to assist with activities such as providing information, developing a mailing list, participating in public meetings, and establishing a community information repository at or near the Site. Upon request by EPA, Respondent shall make limited funding available to a qualified community group as provided under Paragraph 57 of the AOC. Respondent shall ensure that the funding for a qualified community group is allocated to cover the entire RI/FS and other Work under the AOC, including review of the Proposed Plan. Consistent with 40 CFR 35.4090 (Waivers), Respondent may supplement the community group funding as Respondent considers appropriate. Public notice and opportunity for public comment and other participation during the RI/FS will meet both NCP and RCRA requirements.

Section 4: Task 4—Site Characterization (RI/FS Guidance, Chapter 3)

As part of the RI, Respondent will perform the activities described in this task, including the preparation of a site characterization/RI data compilation summary and an RI Report. The overall objective of site characterization is to describe and identify areas of contamination at or from the Site and other areas that may be affected by Site-related contaminants that may pose a threat to human health or the environment. This is accomplished by first determining and describing the Site's physiography, geology, and hydrology. Surface and subsurface pathways of contaminant migration to Ship Creek and Cook Inlet will be evaluated, including a sediment evaluation to better understand contaminant fate and transport analyses. Respondent will identify sources of contamination at the Site, and define the nature, extent, and volume of contaminants that pose unacceptable risk (using the human health and ecological risk assessment processes) relative to those sources.

During this phase of the RI/FS, the RI/FS Work Plan, SAP, and health and safety plan are implemented. Field information and data are collected and analyzed to provide the information required to meet the goals of the RI. In view of the possible unknown Site conditions, activities often are iterative, and to satisfy the objectives of the RI/FS it may be necessary for Respondent to supplement the work specified in the initial RI/FS Work Plan. In addition to the deliverables below, Respondent will provide a monthly progress report and participate in meetings at major decision points, as described in the Work Plan, during the RI/FS process.

4.1 Field Investigation (RI/FS Guidance, Chapter 3.2)

Field investigation includes gathering of information and data to fill data gaps, and to define Site physical and biological characteristics, sources of contamination, the nature and extent of contamination at or from the Site, and both human and ecological risks associated with contamination at or from the

Site. Respondent will perform these activities in accordance with the RI/FS Work Plan and SAP and as described in the AOC.

4.2 Implement and Document Field Support Activities (RI/FS Guidance, Chapter 3.2.1)

Unless approved by EPA for purposes of preliminary sampling and field studies (see SOW Section 2.2.2), Respondent will initiate field support activities only after EPA approval of the RI/FS Work Plan and SAP. Field support activities may include obtaining access to the Site, scheduling and procuring equipment, obtaining field laboratory space, laboratory services, and/or contractors. Respondent will notify EPA at least one week prior to initiating field support activities so that EPA may adequately schedule oversight tasks, if appropriate. Respondent will also notify EPA, in writing, upon completion of field support activities.

4.3 Investigate and Define Site Physical and Biological Characteristics (RI/FS Guidance, Chapter 3.2.2)

Respondent will collect information and data on the physical and biological characteristics of the Site relevant to the presence and migration of hazardous substances and solid wastes, the evaluation of risks to human health and the environment, and the development and evaluation of potential remedial alternatives. Data gathering will be focused on those characteristics that impact the decision-making process, including Site physiography, geology, hydrology and specific physical characteristics identified in the work plan. This information will be ascertained/gathered through various means that may include a combination of physical measurements, observations, sampling efforts and existing information that meets DQOs. This information will be utilized to help identify potential transport pathways and the human and ecological receptors mentioned in the project objectives. In defining the Site's physical characteristics Respondent will also obtain sufficient data for the interpretation of contaminant fate and transport, and to support development and screening of potential remedial alternatives, including information to assess treatment technologies.

4.3.1 Develop Preliminary Remediation Goals (PRGs)

To support RI/FS activities, Respondent will develop PRGs for Site contaminants of potential concern. Respondent will meet with EPA technical representatives prior to initiating this task. The objective of these meetings will be to discuss application of EPA guidance and other appropriate benchmarks for PRGs. Respondent will develop PRGs based on the following objectives:

1. Protection of human health assuming direct contact with potentially contaminated environmental media or receptors at or from the Site, including soil, surface water, sediments and ground water, resulting from

occupational activities, recreational use, transient use and other activities at the Site, including fishing at Ship Creek, in which contact may occur.

2. Protection of benthic invertebrates, resident fish and piscivorous wildlife receptors, if any, that may be affected by potential water or sediment contamination in Ship Creek.

PRGs will be based on existing EPA guidance documents and other relevant published guidelines to the extent possible, and with respect to sediments will include consideration of nationally-developed and/or regionally-developed numerical sediment guidelines for the protection of benthic invertebrates. PRGs can be the basis for media- and contaminant-specific screening levels that can guide the iterative scope of the RI/FS.

4.4 Identify Sources of Contamination (RI/FS Guidance, Chapter 3.2.3)

Respondent will identify source areas that are contributing to contamination at or from the Site that may cause human or ecological exposures above acceptable risk levels. Respondent will evaluate the distributions of contaminants in soil, groundwater, surface water and Ship Creek sediments and, if appropriate (e.g., if the data suggest the presence of an ongoing source), make recommendations to EPA if the need for further investigation or control of sources is identified. EPA will utilize this information in making source control adequacy determinations.

4.5 Define Human and Ecological Use of Site

Respondent will gather the information and data necessary to define use of the Site so that a Site-specific exposure assessment can be performed. In addition to existing literature, information and data gathering, defining the use of the Site may require observation, surveys and personal interviews. The RI/FS Work Plan will be considered as a starting point for collection of this information. Year-round Site use will be determined. In addition, potential exposures associated with Respondent's proposed future uses of the property it owns at the Site will be considered. Respondent will identify planned or projected developments and any other reasonably foreseeable future uses that may increase or decrease potential human or ecological exposure to hazardous substances and contaminants at the Site.

4.6 Describe the Nature and Extent of Contamination (RI/FS Guidance, Chapter 3.2.4)

Respondent will gather the information necessary to describe the nature and extent of contamination as needed to identify and evaluate potential exposures above acceptable risk levels as a final step during the field investigation. Respondent will then implement sampling that will generate information and data on contaminant distributions and biological effects. Any study program identified in an approved work plan or SAP will utilize analytical techniques sufficient to

detect and quantify the concentration of contaminants and the migration of contaminants through groundwater, surface water, soils and Ship Creek sediments at or from the Site. In addition, Respondent will collect the information and data necessary to assess contaminant fate and transport. Subsequent sampling events may be required. This process is continued until sufficient information and data are known to characterize the area and extent of contamination to complete the RI and to evaluate potential remedial alternatives. Respondent will use the information on the nature and extent, and fate and transport, of contamination in conjunction with screening level and baseline risk assessments to determine the level of risk presented by contamination at or from the Site. Respondent will also use this information to help determine the appropriate potential remedial alternatives to be evaluated.

4.7 Data Analyses (RI/FS Guidance, Chapter 3.4)

4.7.1 Evaluate Site Characteristics (RI/FS Guidance, Chapter 3.4.1)

Respondent will analyze and evaluate the information and data to describe: (1) Site physical and biological characteristics; (2) contaminant source characteristics in areas impacted by contaminant sources; (3) nature and extent of contamination at or from the Site as needed to identify and evaluate potential exposures above acceptable risk levels; and (4) contaminant fate and transport to receptors that may be exposed above acceptable risk levels. Site physical characteristics, source assessments, and extent of contamination analyses are utilized in the analysis of contaminant fate and transport. The evaluation of contaminant fate and transport will include the extent of horizontal and vertical spread of contamination as well as information from the literature on contaminant mobility and persistence of contaminants. If Respondent considers modeling appropriate, such models will be identified to EPA in a technical memorandum prior to their use. Except as otherwise provided in the AOC, all data and programming used in generating any model, including any proprietary programs, will be made available to EPA together with a sensitivity analysis. Respondent will discuss with EPA, and then collect if necessary, any information and data needed to fill data gaps identified by EPA. The information reviewed in this evaluation of Site characteristics will include that necessary to evaluate the need for remedial actions or corrective measures, develop the baseline risk assessment, and develop and evaluate potential remedial alternatives, as appropriate.

4.7.2 Assess Human and Ecological Risk

The baseline human health and ecological risk assessments will be conducted following the collection of chemical and biological information and data as determined by EPA.

EPA will review Respondent's qualifications to perform the risk assessments. EPA will determine Respondent's qualifications to perform the risk assessments

in accordance with applicable EPA policy. Upon EPA approval, Respondent will perform baseline risk assessments for human health and ecological impacts using guidance designated by EPA. This guidance may include but not be limited to the following: Risk Assessment Guidance for Superfund: Volume 1 - Human Health Evaluation Manual (Parts A and D); Interim Guidance: Developing Risk Based Clean-up Levels at Resource Conservation and Recovery Act Sites in Region 10, (January, 1998); Ecological Risk Assessment for Superfund: Process for Designing and Conducting Ecological Risk Assessments, Interim Final, June 1997; and Guidelines for Ecological Risk Assessment, EPA/630/R95/002-F, 1998. Many of these guidance documents and others may be found at the following web sites:

www.epa.gov/superfund/programs/risk/humhlth.htm
www.epa.gov/r10earth/offices/oea/risk/r0riskec.htm

Respondent will meet with EPA to scope the baseline risk assessments. Following the scoping meeting, Respondent will prepare a risk assessment scoping memorandum for EPA review and approval. The risk assessment scoping memorandum will describe the scope of the human health and ecological risk assessments as agreed upon with EPA during the scoping meeting, describe the key elements of the human health and ecological risk assessments (e.g., exposure pathway and receptor identification) and provide a list of interim deliverables and a schedule for their submittal. It is anticipated that the conceptual site models, exposure assessments, and problem formulation that were completed during RI scoping will be revised to reflect new information and data. Draft baseline human health and ecological risk assessment reports will be submitted to EPA for review and approval. The final risk assessment reports will be included with the RI report.

Following any Interim Action implementation or other removal or remedial action or corrective measure at the Site prior to completion of the RI/FS process, Respondent may submit one or more technical memoranda to EPA assessing the impacts of such activities, if any.

4.7.3 Data Management Procedures (RI/FS Guidance, Chapter 3.5)

Respondent will consistently document the quality and validity of field and laboratory data compiled and generated during the RI.

4.7.3.1 Document Field Activities (RI/FS Guidance, Chapter 3.5.1)

Information gathered during site characterization will be documented and adequately recorded by Respondent in well-maintained field logs and laboratory reports. The method(s) of documentation must be specified in the RI/FS Work Plan and/or the SAP. Field logs must be utilized to document observations, measurements, and significant events that have occurred during field activities. Laboratory reports must document sample custody, analytical responsibility,

analytical results, adherence to prescribed protocols, nonconformity events and corrections thereof, and/or data deficiencies.

4.7.3.2 Maintain Sample Management and Tracking (RI/FS Guidance, Chapters 3.5.2 and 3.5.3)

Respondent will maintain field reports, sample shipment records, analytical results, and QA/QC reports to ensure that only validated analytical data are reported and utilized in the characterization of the nature and extent of contamination and the development and evaluation of potential remedial alternatives. Analytical results developed under a work plan will not be included in any site characterization reports unless accompanied by or cross-referenced to a corresponding QA/QC report. In addition, Respondent will establish a data security system to safeguard chain-of-custody forms and other project records to prevent loss, damage, or alteration of project documentation.

4.8 Site Characterization Deliverables (RI/FS Guidance, Chapter 3.7)

Respondent will prepare the following site characterization deliverables:

4.8.1 Preliminary Site Characterization RI Data Compilation Summary (RI/FS Guidance, Chapter 3.7.2)

After completing field sampling and analyses, Respondent will submit a concise site characterization RI data compilation summary, in both paper and electronic format. This summary will review the investigative activities that have taken place, and describe and display Site information and data documenting the location and characteristics of surface and subsurface features and contamination at or from the Site, including sample locations, chemical concentration distributions and the results of any biological testing. This evaluation will include, to the extent practicable, chemical distributions relative to known sources, the location and varying concentrations of contaminants in areas influenced by sources, and the extent of contaminant migration through or from the Site. The RI data compilation summary will provide EPA with a preliminary reference for evaluating the risk assessments, the development and screening of potential remedial alternatives, and the further identification of ARARs.

4.8.2 Remedial Investigation (RI) Report (RI/FS Guidance, Chapter 3.7.3)

Respondent will prepare and submit a draft RI Report to EPA for review and approval. This report will summarize results of field activities to characterize the Site, sources of contamination, nature and extent of contamination, and the fate and transport of contaminants. Respondent will refer to the RI/FS Guidance for an outline of the report format and contents. Following comment by EPA, Respondent will prepare a final RI Report that satisfactorily addresses EPA's comments. Draft and final RI reports shall be submitted to EPA in paper as well as electronic format.

4.8.3 Human Health & Ecological Risk Assessment Report

Once all interim deliverables have been completed, Respondent will submit the baseline risk assessment reports. EPA guidance will be consulted in preparing the reports. Draft and final risk assessment shall be submitted to EPA in paper as well as electronic format.

Section 5: Task 5—Treatability Studies (RI/FS Guidance, Chapter 5)

To the extent necessary to complete the screening of potential remedial alternatives as described in Task 4, treatability testing will be performed by Respondent to assist in the detailed analysis of alternatives. If treatability studies are needed as part of an Interim Action, but not needed for the Site as a whole, then Respondent will perform treatability studies as part of the Interim Action process rather than as part of the FS. If applicable, testing results and operating conditions from treatability studies performed regarding Interim Actions will be used in the detailed design of any selected remedial technology. Respondent will perform the following activities if treatability studies are needed to complete the screening of potential remedial alternatives.

5.1 Determination of Candidate Technologies and the Need for Testing (RI/FS Guidance Chapters 5.2 and 5.4)

Respondent will identify, in a technical memorandum based on the preliminary screening during Task 4, and subject to EPA review and approval, candidate technologies for a treatability studies program. The listing of candidate technologies will cover the range of technologies required for alternatives analysis. The specific information and data requirements for the testing program will be determined and refined during the development and screening of remedial alternatives (Task 6).

5.1.1 Conduct Literature Survey and Determine Need for Treatability Testing (RI/FS Guidance, Chapter 5.2)

Respondent will conduct a literature survey to gather information on performance, relative costs, applicability, removal efficiencies, operation and maintenance (O&M) requirements, and implementability of candidate technologies. Based on this review and project DQOs, Respondent will recommend to EPA during Task 5 whether treatment is a feasible and cost-effective alternative for Site contaminants that exceed acceptable risk levels. If EPA and Respondent agree that treatment is a feasible and cost-effective alternative based on existing Site characteristics, and if practical candidate technologies have not been sufficiently demonstrated, or cannot be adequately evaluated for this Site on the basis of available information, treatability testing will be conducted. Where it is determined by EPA that treatability testing is required, and unless Respondent can demonstrate to EPA's satisfaction that they are not needed, Respondent will submit a statement of work to EPA outlining the steps

and information and data necessary to evaluate and initiate the treatability testing program.

5.1.2 Evaluation of Treatability Studies (RI/FS Guidance, Chapter 5.4)

Once a decision has been made to perform treatability studies, Respondent and EPA will decide on the type of treatability testing to use (e.g., bench-scale versus pilot). Because of the time required to design, fabricate, and install pilot scale equipment as well as perform testing for various operating conditions, the decision to perform pilot testing will be made as early in the process as possible to minimize potential delays to the FS. A brief scope of work will be prepared by Respondent that lists the candidate technologies, identifies the scale on which they will be tested (bench-scale vs. pilot), and lists available facilities and locations at which the testing can occur. This scope of work will be reviewed by EPA prior to preparation of the work plan for the treatability studies. To assure that a treatability testing program is completed on time, and with accurate results, Respondent will either submit a separate treatability testing work plan or an amendment to the appropriate work plan for EPA review and approval.

5.2 Treatability Testing and Deliverables (RI/FS Guidance, Chapters 5.5, 5.6 and 5.8)

Where treatability testing will be conducted, the deliverables will include not only the memorandum identifying candidate technologies as discussed in Section 5.1 above but also a work plan, a sampling and analysis plan, and a final treatability evaluation report. EPA may also require a treatability study health and safety plan, where appropriate.

5.2.1 Treatability Testing Work Plan (RI/FS Guidance, Chapter 5.5)

Respondent will prepare a treatability testing work plan or amendment to the appropriate work plan for EPA review and approval describing the Site background, remedial technology(ies) to be tested, test objectives, experimental procedures, treatability conditions to be tested, measurements of performance, analytical methods, data management and analysis, health and safety, and residual waste management. The DQOs for treatability testing will be documented as well. If pilot scale treatability testing is to be performed, the pilot scale work plan will describe pilot plant installation and start-up, pilot plant operation and maintenance procedures, operating conditions to be tested, a sampling plan to determine pilot plant performance, and a health and safety plan. If testing is to be performed off-site, any permitting requirements for such testing will be addressed.

5.2.2 Treatability Study SAP (RI/FS Guidance, Chapter 5.5)

If the QAPP or FSP are not adequate for defining activities to be performed during the treatability tests, a separate treatability study SAP or amendment to

the Site SAP will be prepared by Respondent for EPA review and approval. Section 2.6 1 of this SOW provides additional information on the requirements of the SAP.

5.2.3 Treatability Study Health and Safety Plan (RI/FS Guidance, Chapter 5.5)

If the original health and safety plan is not adequate for defining the activities to be performed during the treatment tests, Respondent will develop a separate or amended health and safety plan. Section 2.6.2 of this SOW provides additional information on the requirements of the health and safety plan. EPA does not "approve" the treatability study health and safety plan.

5.2.4 Treatability Study Evaluation Report (RI/FS Guidance, Chapter 5.6)

Following completion of treatability testing, Respondent will analyze and interpret the testing results in a technical report to EPA. Depending on the sequence of activities, this report may be a part of the RI/FS reports or a separate deliverable. The report will evaluate each technology's effectiveness, implementability, cost, and actual results as compared with predicted results. The report will also evaluate full-scale application of the technology, including a sensitivity analysis identifying the key parameters affecting full-scale operation.

Section 6: Task 6—Development and Screening of Remedial Alternatives (RI/FS Guidance, Chapter 4)

The development and screening of potential remedial alternatives are performed to develop an appropriate range of alternatives that will be evaluated. This range of alternatives may include, but not be limited to the following: no action; natural attenuation; enhanced natural recovery and/or attenuation; in-place confinement (capping); containment (e.g., barrier walls); excavation and disposal in existing landfills; treatment, as appropriate, to reduce the toxicity, mobility, or volume of hazardous substances; the use of presumptive remedies; and options combining aspects of these and/or other alternatives including Institutional Controls and Engineering Controls. Respondent will perform the following activities as a function of the development and screening of remedial alternatives.

6.1 Development and Screening of Remedial Alternatives (RI/FS Guidance, Chapter 4.2)

Following completion of the baseline risk assessments, Respondent will begin to develop and evaluate a range of appropriate alternatives that ensure protection of human health and the environment.

6.1.1 Refine and Document RAOs (RI/FS Guidance, Chapter 4.2.1)

Based on the baseline risk assessments and the results of the RI, Respondent will review and, if necessary, modify the Site-specific RAOs. Revised RAOs will

include updated PRGs that Respondent initially calculated during the RI. The revised PRGs will be documented in a technical memorandum that will be reviewed and approved by EPA. These modified PRGs will specify the contaminants and media of interest, exposure pathways and receptors, and an acceptable contaminant level or range of levels at particular locations for each exposure route.

6.1.2 Develop General Response Actions (RI/FS Guidance, Chapter 4.2.2)

Respondent will develop general response actions for each media of interest defining natural attenuation, enhanced natural attenuation, containment, treatment, Engineering Controls, Institutional Controls, the use of EPA-approved presumptive remedies, or other actions, singly or in combination, as appropriate to satisfy the RAOs.

6.1.3 Identify Areas and Volumes of Contamination that may require Remedial Action/ Corrective Measures (RI/FS Guidance, Chapter 4.2.3)

Respondent will identify areas and volumes of contamination to which general response actions, other than Interim Actions, may apply, taking into account requirements for protectiveness as identified in the RAOs. The chemical and physical characterization of the Site will also be taken into account.

6.1.4 Identify, Screen, and Document Remedial Technologies (RI/FS Guidance, Chapters 4.2.4 and 4.2.5)

Respondent will identify and evaluate technologies applicable to each general response action to eliminate those that cannot be implemented and/or are not feasible at the Site. General response actions will be refined to specify remedial technology types. Technology process options for each of the technology types will be identified either concurrent with the identification of technology types, or following the screening of the considered technology types. Process options will be evaluated on the basis of short and long-term effectiveness, implementability, and cost factors to select and retain one or, if necessary, more than one representative process for each technology type. If two technologies are of equal effectiveness and implementability, Respondent may propose that the more costly technology be eliminated from consideration. The technology types and process options will be summarized for inclusion in a technical memorandum. The reasons for eliminating alternatives must be specified.

6.1.5 Assemble and Document Alternatives (RI/FS Guidance, Chapter 4.2.6)

Respondent will assemble selected representative technologies into alternatives for the Site or, if appropriate, for each affected medium or operable unit. Together, all of the alternatives will represent a range of treatment and

containment combinations that will address contaminants of concern at or from each operable unit or the Site as a whole. Respondent will prepare a summary of the assembled alternatives and their related action-specific ARARs for inclusion in a technical memorandum. The reasons for eliminating alternatives during the preliminary screening process must be specified.

6.1.6 Refine Alternatives

Respondent will refine the remedial alternatives to identify the contamination addressed by each alternative. Sufficient information will be collected for an adequate comparison of alternatives. PRGs for each chemical in each medium will also be modified as necessary to incorporate any new risk assessment information presented in the baseline risk assessment reports. Additionally, action-specific ARARs will be reviewed and possibly updated as the remedial alternatives are refined.

6.1.7 Conduct and Document Screening Evaluations of Each Alternative (RI/FS Guidance, Chapter 4.3)

Respondent may perform a final screening process based on short- and long-term aspects of effectiveness, implementability, and relative cost. Generally, this screening process is only necessary when there are many feasible alternatives available for detailed analysis. If necessary, the screening of alternatives will be conducted to assure that only the alternatives with the most favorable composite evaluation of all factors are retained for further analysis. As appropriate, the screening will preserve the range of treatment and containment alternatives that was initially developed. The range of remaining alternatives will include options that use treatment technologies and permanent solutions to the maximum extent practicable. Respondent will prepare a technical memorandum summarizing the results and reasoning employed in screening, arraying alternatives that remain after screening, and identifying the action-specific ARARs for the alternatives that remain after screening.

6.2 Alternatives Development and Screening Deliverables (RI/FS Guidance, Chapter 4.5)

Respondent will prepare a technical memorandum summarizing its methods, rationale, and results of the alternatives development and screening process described above. This memorandum will include an identification of the alternatives selected for detailed analysis. Respondent will modify the memorandum if required by EPA's comments to assure identification of a complete and appropriate range of viable alternatives to be considered in the detailed analysis.

Section 7: Task 7—Detailed Analysis of Remedial Alternatives (RI/FS Guidance, Chapter 6)

The detailed analysis will be conducted by Respondent to provide EPA with the information needed to allow for the selection of Site remedies. This analysis is the final task to be performed by Respondent during the FS.

7.1 Detailed Analysis of Alternatives (RI/FS Guidance, Chapter 6.2)

Respondent will conduct a detailed analysis of alternatives that will consist of an analysis of each option against the set of nine CERCLA evaluation criteria and a comparative analysis of all options using the same evaluation criteria, as specified in Section 7.1.1 below of this Statement of Work.

7.1.1 Compare Each Alternative to the Nine Criteria

Respondent will apply the nine CERCLA evaluation criteria to the assembled remedial actions or corrective measures to ensure that the selected remedial alternative(s) will be protective of human health and the environment; will be in compliance with, or include a waiver of, ARARs; will be cost-effective; will utilize permanent solutions and alternative treatment technologies, or resource recovery technologies, to the maximum extent practicable; and will address the statutory preference for treatment as a principal element. The evaluation criteria include: 1) overall protection of human health and the environment; 2) compliance with ARARs; 3) long-term effectiveness and permanence; 4) reduction in toxicity, mobility, or volume; 5) short-term effectiveness; 6) implementability; 7) costs; 8) state (or support agency) acceptance; and 9) community acceptance. (Note: criteria 8 and 9 are considered after the RI/FS reports have been released to the general public.) For each alternative, Respondent will provide: 1) a description of the alternative that outlines the remedial strategy involved and identifies the key ARARs associated with each alternative; and 2) a discussion of the assessment of each alternative against each of the nine criteria. If Respondent does not have direct input on criterion 8 (state or support agency acceptance) or criterion 9 (community acceptance), these will be addressed by EPA.

7.1.2 Compare Alternatives Against Each Other and Document the Comparison of Alternatives (RI/FS Guidance, Chapters 6.2.5 and 6.2.6)

Respondent will perform a comparative analysis between the remedial alternatives to evaluate the relative performance of each alternative in relation to each specific evaluation criterion. That is, each alternative will be compared against the others using the evaluation criteria as a basis of comparison. Identification and selection of the preferred alternative are reserved by EPA. Respondent will prepare and submit a technical memorandum summarizing the results of the comparative analysis prior to preparation of the FS report.

7.2. Feasibility Study Report (RI/FS Guidance, Chapter 6.5)

Respondent will prepare a draft FS report for EPA review and comment. This report, as ultimately adopted or amended by EPA, will provide a basis for remedy selection by EPA and document the development and analysis of remedial alternatives. Respondent will refer to the RI/FS Guidance for an outline of the report format and the required report content. Respondent will prepare a final FS report that satisfactorily addresses EPA's comments. Draft and final FS Reports shall be submitted to EPA in paper as well as electronic format.

Section 8: EPA Guidance Documents

For purposes of this integrated CERCLA RI/FS and RCRA RFI/CMS the following list, although not comprehensive, comprises many of the regulations and guidance documents that will apply to this Work:

The National Oil and Hazardous Substance Pollution Contingency Plan (NCP), 40 C.F.R. Part 300 *et seq*.

"Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA," U.S. EPA, Office of Emergency and Remedial Response, October 1988, OSWER Directive No. 9355.3-01.

"Guidance on Conducting Non-Time-Critical Removal Actions Under CERCLA," U.S. EPA, Office of Emergency and Remedial Response, August 1993, OSWER Directive No. 9360.0-32.

"Land Use in the CERCLA Remedy Selection Process," U.S. EPA, Office of Solid Waste and Emergency Response, May 1995, OSWER Directive No. 9355.7-04.

"Reuse Assessments: A Tool to Implement the Superfund Land Use Directive," U.S. EPA/OERR, OSWER Directive No. 9355.7-06P, June 2001.

"Interim Guidance on Potentially Responsible Party Participation in Remedial investigation and Feasibility Studies," U.S. EPA, Office of Waste Programs Enforcement, Appendix A to OSWER Directive No. 9355.3-01.

"Guidance on Oversight of Potentially Responsible Party Remedial Investigations and Feasibility Studies," Volumes I and II, U.S. EPA, Office of Waste Programs Enforcement, July 1991, OSWER Directive No. 9835.1(c) and .1(d).

"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.

"RCRA Facility Investigation Guidance," U.S. EPA, May 1989, EPA Doc. No. EPA 530/SW-89-031.

"RCRA Corrective Action Plan," U.S. EPA Office of Solid Waste, May 1994, OSWER Directive No. 9902.3-2a.

"Handbook of Groundwater Protection and Cleanup Policies for RCRA Corrective Action," U.S. EPA, April 2004, EPA Doc. No. EPA/530/R-01/015.

"RCRA Public Participation Manual," U.S. EPA, Sept. 1996, No. 530-R-96-007.

"Guidance for the Data Quality Objectives Process EPA QA/G-4," U.S. EPA, Office of Environmental Information, EPA/600/R-96/055, August 2000.

"Guidance for the Preparation of Standard Operating Procedures QA-G-6. U.S. EPA Office of Environmental Information, EPA/240/B-01/004, March 2001.

"EPA Requirements for Quality Assurance Project Plans," USEPA. EPA QA/R5, March 2001.

"EPA Requirements for Quality Management Plans," U.S. EPA, Office of Emergency and Remedial Response and Office of Waste Programs Enforcement, EPA QA/R-2, Interim Final, November 1999.

"EPA Guidance on Quality Assurance Project Plans," QA/G-5, U.S. EPA, Office of Emergency and Remedial Response and Office of Waste Programs Enforcement, EPA/600/R-98/018, February 1998.

"Users Guide to the EPA Contract Laboratory Program: U.S. EPA, Sample Management Office," January 1991, OSWER Directive No. 9240.0-01D.

"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.

"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.

"Presumptive Remedies: Policy and Procedures," U.S. EPA, Office of Emergency and Solid Waste and Emergency Response, Sept. 1993, OSWER Directive No. 9355.0-47FS.

"Presumptive Response Strategy and Ex-Situ Treatment Technologies for Contaminated Groundwater at CERCLA Sites," U.S. EPA, Office of Emergency and Remedial Response, Oct. 1996, OSWER Directive No. 9283.1-12.

"Draft Guidance on Preparing Superfund Decision Documents," U.S. EPA, Office of Emergency and Remedial Response, March 1988, OSWER Directive No. 9355.3-02.

"Risk Assessment Guidance for Superfund--Volume I, Human Health Evaluation Manual (Part A)," December 1989, EPA/540/1-89/002.

"Risk Assessment Guidance for Superfund--Volume II Environmental Evaluation Manual," March 1989, EPA/540/1-89/001.

"Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments," U.S. EPA, OSWER Directive No. 9285.7-25, June 1998, EPA/540-R-97-006.

"Guidance for Data Useability in Risk Assessment," October 1990, EPA/540/G-90/008.

"Performance of Risk Assessments in Remedial Investigation/ Feasibility Studies (RI/FSs) Conducted by Potentially Responsible Parties (PRPs)," August 28, 1990, OSWER Directive No. 9835.15.

"Supplemental Guidance on Performing Risk Assessments in Remedial Investigation/Feasibility Studies (RI/FSs) Conducted by Potentially Responsible Parties (PRPs)," July 1991, OSWER Directive No. 9835.15(a).

"Supplemental Risk Assessment Guidance for Superfund," Region 10 U.S. EPA, Health and Environmental Assessment Section, August 1991.

"Role of the Baseline Risk Assessment in Superfund Remedy Selection Decisions," April 22, 1991, OSWER Directive No. 9355.0-30.

"Guidance for Comparing Background and Chemical Concentrations in Soil for CERCLA Sites, U.S.EPA, OSWER 9285.7-41, September 2002.

"Role of Background in the CERCLA Cleanup Program," U.S. EPA, OSWER Directive No. 9230.0-97, April 2002.

"Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites," U.S. EPA, OSWER Directive 9355.4-24, March 2003.

"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.

OSHA Regulations in 29 CFR 1910.120 (Federal Register 45654, December 19, 1986).

"Interim guidance on Administrative Records for Selection of CERCLA Response Actions," U.S. EPA, Office of Waste Programs Enforcement, March 1, 1989, OSWER Directive No. 9833.3A.

"Community Relations in Superfund: A Handbook," U.S. EPA, Office of Emergency and Remedial Response, January 1992, OSWER Directive No. 9320.0-03C.

"Community Relations During Enforcement Activities and Development of the Administrative Record," U.S. EPA, Office of Waste Programs Enforcement, November 1988, OSWER Directive No. 9836.0-1A.

"Coordination between RCRA Corrective Action and Closure and CERCLA Site Activities," Office of Enforcement and Compliance Assurance, U.S. EPA, September 24, 1996.

"Superfund Reforms: Updating Remedy Decisions, U.S. EPA, OSWER 9200.0-22, September 27, 1996.

"Institutional Controls: A Guide to Implementing, Monitoring, and Enforcing Institutional Controls at Superfund, Brownfields, Federal Facility, UST and RCRA Corrective Action Cleanups," [Draft] U.S. EPA OSWER, March 2003.