BEFORE THE

OHIO E.P.A.

APR 13 2010

ENTERED DIRECTOR'S JOURNAL

OHIO ENVIRONMENTAL PROTECTION AGENCY

In the Matter of	:	
	:	**Director's Final**
United States Department of	:	**Findings and Orders**
Energy	:	**For Removal Action and**
	:	**Remedial Investigation**
Portsmouth/Paducah Project Office	:	**and Feasibility Study and**
1017 Majestic Drive, Suite 200	:	**Remedial Design and**
Lexington, Kentucky 40513	:	**Remedial Action**
	:	
	:	
Respondent	:	
	:	
For the Site Known As:	:	
The DOE Portsmouth Gaseous	:	
Diffusion Plant (Decontamination	:	
And Decommissioning Project)	:	

I certify this to be a true and accurate copy of the official documents as filed in the records of the Ohio Environmental Protection Agency.

By: _____ Date: 4-13-2010

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PREAMBLE

It is agreed to by the Parties hereto as follows:

I. JURISDICTION

1. These Director's Final Findings and Orders ("Orders") are issued to Respondent United States Department of Energy ("US DOE") pursuant to the authority vested in the Director of Ohio EPA under Ohio Revised Code ("ORC") §§ 3704.03, 3734.13, 3734.20, 6111.03, and 3745.01. U.S. DOE enters these Orders pursuant to Section 104 of CERCLA, 42 U.S.C. Section 9604, Executive Order 12580, and the Atomic Energy Act of 1954, as amended, 42 U.S.C. Section 2011, et seq.

II. PARTIES BOUND

2. These Orders shall apply to and be binding upon Respondent and its successors in interest liable under Ohio law.

3. Except as otherwise provided by law, no change in ownership or corporate status of the Respondent including, but not limited to, any transfer of assets or real or personal property shall in any way alter Respondent's obligations under these Orders.

4. Respondent shall provide a copy of these Orders to all contractors, laboratories and consultants retained by Respondent to conduct any portion of the Work performed pursuant to these Orders within fourteen (14) days of the effective date of these Orders or upon date of retention. Respondent shall require that all contractors, laboratories and consultants retained by Respondent to perform the Work pursuant to these Orders also comply with the applicable provisions of these Orders. Respondent shall also require that contractor(s), retained by Respondent to conduct any portion of the Work performed pursuant to these Orders, (a) provide subcontractor(s) conducting any portion of the Work with a copy of these Orders and (b) include provisions in any such subcontract(s) requiring subcontractor(s) comply with applicable provisions of these Orders.

III. DEFINITIONS

5. Unless otherwise expressly provided herein, all terms used in these Orders or in any appendices shall have the same meaning as defined in ORC Chapters 3704, 3734 and 6111, CERCLA, and the rules promulgated thereunder. Whenever the terms listed

below are used in these Orders or in any appendices, attached hereto and incorporated herein, the following definitions shall apply:

a. "Action Memorandum/a" means the document(s) issued by Respondent detailing the removal action(s) selected by Respondent with Ohio EPA concurrence for the Site after review of the Engineering Evaluation/Cost Analysis (EE/CA) generated by the Respondent after it conducts the Removal Site Evaluation. The Action Memorandum/a formalizes the selection of the removal action(s) after publication of the applicable EE/CA and any changes in the proposed removal action(s) resulting from public comments on the EE/CA. The Action Memorandum/a includes a responsiveness summary of public comments on the EE/CA. Any Waste Acceptance Criteria (WAC), Milestones, Work Plan schedules, and Closure Plan(s) therein are subject to Ohio EPA approval, as opposed to concurrence, in accordance with the Review of Submissions Section of these Orders.

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

c. "Contaminant" and "Contamination" means (1) any "hazardous waste" under ORC §3734.01(J) or Section 1004(5) of RCRA, 42 U.S.C. § 6903(5); (2) any "industrial waste" under ORC §6111.01(C); (3) any "other wastes" under ORC §6111.01(D); (4) any "hazardous substance" as defined in Section 101(14) of CERCLA, 42 U.S.C. § 9601(14); (5) any "hazardous constituents" as listed in Appendix VIII to 40 C.F.R. Part 261 and Appendix IX to 40 C.F.R. Part 264; (6) any "pollutant or contaminant" as defined in Section 101(33) of CERCLA, 42 U.S.C. § 9601(33); (7) "regulated asbestos containing material" as defined in OAC Rule 3745-20-01(42), and (8) "air pollutant" or "air contaminant" as defined in OAC Rule 3745-15-01(C), including any release of one or more of the same.

d. "Day" means a calendar day unless expressly stated to be a business day. In computing any period of time under these Orders, where the last day would fall on a Saturday, Sunday, or state or federal holiday, the period shall run until the close of the next business day.

e. "Decontamination and Decommissioning" ("D&D") for purposes of Work performed pursuant to these Orders means the following activities conducted under documents concurred with and/or approved by Ohio EPA pursuant to these Orders: 1) Conducting a Site-wide waste disposition alternatives evaluation; 2) Deactivation of equipment, removal and cleaning of process residues and deposits from equipment structures and piping; 3) Dismantlement, demolition, and removal of equipment, structures, piping, building contents, concrete foundations, and any residual soil which adheres to the foregoing or

otherwise must be excavated as part of D&D activities; 4) Treatment, disposition, and disposal, off-Site or in a secure on-Site disposal cell meeting design, operational, and waste acceptance criteria developed pursuant to these Orders, or as otherwise provided in a Work Plan concurred with by Ohio EPA under these Orders of:

i. demolished and dismantled equipment, structures, piping, building contents, concrete, foundations and other wastes generated through the performance of D&D activities (e.g., sample residuals, decontamination wastewater, dust suppression wastewater, and personal protective equipment); and
ii. any residual soil which adheres to the materials and items listed in (3) above, or which otherwise must be excavated as an integral part of a removal or remedial action pursuant to these Orders.

and 5) Any sampling, investigation, or other activities required to complete the activities identified in Paragraph 5.e.(1)-(4) above.

D&D **does not** include: 1) Investigation and remediation of environmental media other than as described above; 2) activities carried out in connection with the Cold Shutdown Program, Tc-99 Remediation Program, the Lease with the United States Enrichment Corporation; 3) surveillance and maintenance of the facilities listed in Attachments G and H pending implementation of a response action at such facility or facilities under these Orders (e.g., draining liquids, targeted equipment removal, etc.); 4) soils, piping, and other underground structures outside the footprint of buildings/structures identified in a Work Plan concurred with by Ohio EPA pursuant to these Orders; 5) with Ohio EPA's agreement, pre-D&D mobilization and preparatory actions not performed under these Orders such as dismantlement and relocation of salvageable/reusable equipment, draining or removal of substances such as Freon, oil, or other liquids, removing items such as mercury containing switches and instruments, lighting fixtures, ballasts, light bulbs, etc., actions to reduce hazards (e.g., reduction of fire hazards, fixative and sealant application for radioactive and asbestos contamination control, etc.), general housekeeping (e.g., excess material removal, hydro-cleaning, vacuuming, etc.), targeted equipment removal, reconfiguring plant equipment monitoring and support systems (e.g., phones, alarms, data control, communication cables, etc.), utility disconnects (e.g., air gapping, lock out tag out, isolation, etc.), utility reconfiguration, preparation of staging/lay down areas, infrastructure modifications (e.g., dry air systems, nitrogen systems, CAAS systems, etc.), and work area and common area setup activities (e.g., trailers, electrical supply, fencing, etc.); and 6) any activities not considered to be "Work" pursuant to Paragraph 51.g. of the Dispute Resolution and Paragraph 80 of the Agreement Not To Refer Sections of these Orders.

The investigation and remediation of environmental media is being conducted by Respondent pursuant to the Ohio Consent Decree as identified in Paragraph 6.e. of these Orders.

f. "D& D Response Costs" means all costs incurred by Ohio EPA including, but not limited to, payroll costs, contractor costs, travel costs, direct costs, overhead costs, legal and enforcement related costs, oversight costs, laboratory costs, and the costs of reviewing or developing plans, reports, and other items pursuant to these Orders, verifying the Work, or otherwise developing, implementing or enforcing these Orders. For purposes of this definition, "enforcement related costs" do not include costs incurred by Ohio EPA in preparing future administrative enforcement orders or litigation costs incurred by Ohio EPA to seek sanctions against Respondent for any violations of these Orders.

g. "Engineering Evaluation/Cost Analysis" ("EE/CA") means the document prepared by Respondent in accordance with the EE/CA SOW and the National Contingency Plan (NCP), including Section 300.415(b)(4)(i) of the NCP, that contains the analysis of removal alternatives for the Site for the list of Non-Time Critical Removal Action (EE/CA) Groups set forth in Attachment G to these Orders, and concurred with by Ohio EPA. The EE/CA shall: (1) satisfy environmental review requirements in the NCP for removal actions; (2) satisfy administrative record requirements of the NCP for removal action selection; and (3) provide a framework for evaluating alternative technologies. The EE/CA identifies the objectives of the removal action and analyzes the effectiveness, implementability, and cost of various alternatives that may satisfy these objectives. Any WAC, Milestones, Work Plan schedules, and Closure Plan(s) therein are subject to Ohio EPA approval, as opposed to concurrence, in accordance with the Review of Submissions Section of these Orders.

h. "Facility" means the U.S. Department of Energy Portsmouth Gaseous Diffusion Plant located at Piketon, Pike County, Ohio. The U.S. Department of Energy Portsmouth Gaseous Diffusion Plant is described more fully in Exhibit 1, attached.

i. "Feasibility Study" ("FS") means a study(ies) undertaken to develop and evaluate options for remedial action(s) to reduce or eliminate the threat to human health and the environment presented by structures that will undergo D&D and is more fully described in the RI/FS SOW(s). The FS is generally performed concurrently and in an interactive fashion with the Remedial Investigation. The term also refers to a report(s) that describes the results of the study(ies).

j. "Funding Availability" or "Available Funds" means: (1) for determinations with

respect to Milestones for the current federal fiscal year (FY), the US DOE-Headquarters allotment for D&D Work pursuant to these Orders; and (2) for determinations with respect to FY+1, FY+2 Milestones and out-year target dates, OMB and US DOE-Headquarters budget guidance and targets.

k. "Milestone" means enforceable dates as set forth in the Compliance Schedule Section of these Orders, any dates identified as Milestones in any Work schedules approved by Ohio EPA, and any other dates approved by Ohio EPA as Milestone dates. A Milestone is a requirement and is enforceable.

l. "NCP" means the National Oil and Hazardous Substances Pollution Contingency Plan, codified at 40 C.F.R. Part 300 (1990), as amended.

m. "Ohio EPA" means the Ohio Environmental Protection Agency and its designated representatives.

n. "Orders" means these Director's Final Findings and Orders and all attachments hereto.

o. "Paragraph" means a portion of these Orders identified by an Arabic numeral or an uppercase or lowercase letter.

p. "Parties" means Respondent and the Ohio EPA.

q. "Pre-Investigation Evaluation Report" ("PER") means the document(s) of the same name prepared by Respondent pursuant to the Performance of the Work by Respondent Section of these Orders and submitted pursuant to the Review of Submissions Section of these Orders.

r. "Preliminary Assessment" ("PA") means the preliminary assessment as that term is defined in 40 C.F.R. 300.410.

s. "Proposed Plan" means the report(s) generated by Respondent, and concurred with by Ohio EPA, describing the remedial alternatives analyzed, proposing a preferred remedial action alternative(s), and summarizing the information relied upon to identify the preferred alternative chosen by Respondent and Ohio EPA in a manner that best meets the evaluation criteria outlined in the NCP. Any WAC, Milestones, Work Plan schedules, and Closure Plan(s) therein are subject to Ohio EPA approval, as opposed to concurrence, in accordance with the Review of Submissions Section of these Orders.

t. "Record of Decision" ("ROD") means the document(s) issued by Respondent in accordance with Section 117(b) of CERCLA, 42 U.S.C. §9617, which

document(s) shall be consistent with 40 C.F.R. 300.430(f)(5), detailing the remedial action(s) selected by Respondent with Ohio EPA concurrence for the Site after review of the Remedial Investigation/Feasibility Study Report(s) generated by the Respondent and issuance of the Proposed Plan. The ROD formalizes the remedy after publication of the Proposed Plan, including any changes in the preferred remedial alternative resulting from public comments on the Proposed Plan. The ROD includes a responsiveness summary for public comments on the Proposed Plan. Any WAC, Milestones, Work Plan schedules, and Closure Plan(s) therein are subject to Ohio EPA approval, as opposed to concurrence, in accordance with the Review of Submissions Section of these Orders.

u. "Remedial Action" ("RA") means those remedial action(s) or remedy(s), as those terms are defined in Section 101(24) of CERCLA, 42. U.S.C. §9601(24), including those actions undertaken by Respondent to implement and maintain the effectiveness of the final plans and specifications submitted by Respondent pursuant to the Remedial Design and Remedial Action Work Plan(s) concurred with by Ohio EPA. Any WAC, Milestones, Work Plan schedules, and Closure Plan(s) therein are subject to Ohio EPA approval, as opposed to concurrence, in accordance with the Review of Submissions Section of these Orders.

v. "Remedial Design" ("RD") means those activities to be undertaken by Respondent to develop the final plans and specifications for the Remedial Action(s) pursuant to the Remedial Design and Remedial Action Work Plan(s) concurred with by Ohio EPA. Any WAC, Milestones, Work Plan schedules, and Closure Plan(s) therein are subject to Ohio EPA approval, as opposed to concurrence, in accordance with the Review of Submissions Section of these Orders

w. "Remedial Design and Remedial Action Work Plan" ("RD/RA Work Plan") means the document(s) of the same name drafted by Respondent, with Ohio EPA concurrence, pursuant to the Performance of the Work by Respondent Section of these Orders. Any WAC, Milestones, Work Plan schedules, and Closure Plan(s) therein are subject to Ohio EPA approval, as opposed to concurrence, in accordance with the Review of Submissions Section of these Orders.

x. "Remedial Investigation" ("RI") means a process undertaken to determine the threat to human health and the environment presented by D&D at the Site. The RI process emphasizes data collection and Site characterization, and is generally performed concurrently and in an interactive fashion with the Feasibility Study process. The RI process includes sampling and monitoring, as necessary, and includes the gathering of sufficient information to determine the necessity for remedial action and to support the evaluation of remedial alternatives. The term

also refers to a report that describes the results of the investigation.

y. "Remedial Investigation and Feasibility Study Work Plan" ("RI/FS Work Plan") means the document(s) of the same name submitted by Respondent pursuant to the Performance of the Work by Respondent Section of these Orders and concurred with by Ohio EPA pursuant to the Review of Submissions Section of these Orders. Any WAC, Milestones, Work Plan schedules, and Closure Plan(s) therein are subject to Ohio EPA approval, as opposed to concurrence, in accordance with the Review of Submissions Section of these Orders.

z. "Removal Action" shall have the same meaning as "remove" or "removal" as defined by Section 101(23) of CERCLA, 42 U.S.C. §9601(23).

aa. "Removal Action Work Plan Outline" means the "Removal Action Work Plan Outline for the implementation of the Removal Action(s)" at the Site, as set forth in Attachment E to these Orders. The Removal Action Work Plan Outline is not specific to any Site.

bb. "Removal Action Work Plan" means the document(s) of the same name submitted by Respondent pursuant to the Performance of the Work by Respondent Section of these Orders and concurred with by Ohio EPA pursuant to the Review of Submissions Section of these Orders. Any WAC, Milestones, Work Plan schedules, and Closure Plan(s) therein are subject to Ohio EPA approval, as opposed to concurrence, in accordance with the Review of Submissions Section of these Orders.

cc. Removal Site Evaluation (RSE) means the RSE as described in 40 CFR 300.410.

dd. Removal Site Inspection (RSI) means the RSI as described in 40 CFR 300.410.

ee. "Respondent" means the United States Department of Energy ("US DOE"). Respondent is the Lead Agency at the Site as defined in 40 C.F.R. § 300.5.

ff. "RI/FS Statement of Work" ("RI/FS SOW") means the "Generic Statement of Work for Conducting Remedial Investigation(s) and Feasibility Study(ies)", as set forth in Attachment A to these Orders.

gg. "RD/RA Statement of Work" ("RD/RA SOW") means the "Generic Statement of Work for Remedial Design(s) and Remedial Action(s)" at the Site, as set forth in Attachment B to these Orders.

hh. "Section" means a portion of these Orders identified by a roman numeral.

ii. "Site" means all buildings, structures, and contents thereof subject to D&D as defined in this Section, including areas where D&D materials are stored, treated, managed or disposed in accordance with these Orders at the Facility.

jj. "Supporting Documents" means the field sampling plan ("FSP"), quality assurance project plan ("QAPP"), and health and safety plan ("HASP") developed concurrently with the Removal Action Work Plan(s), RI/FS Work Plan(s) and the RD/RA Work Plan(s) pursuant to these Orders and Section 6 of the Removal Action Work Plan Outline, Section 3 of the RI/FS SOW and Section 4 of the RD/RA SOW, respectively.

kk. "Target Date" means an anticipated completion date for a task that has not been designated as a Milestone and shall be a goal for accomplishing a designated task. A target date is not a requirement and is not enforceable. Target dates correspond to the categories of target dates set forth in the Compliance Schedule Section of these Orders.

ll. "Transferee" means any future owner of any interest in the Site, including but not limited to, owners of an interest in fee simple, mortgagors, easement holders, and lessees.

mm. "Waste Acceptance Criteria" ("WAC") means the criteria developed by Respondent with community input and approved by Ohio EPA which specify standards that must be met by each waste prior to its acceptance into any on-Site disposal facility, if such a facility is selected as a remedy pursuant to these Orders. The criteria must specify: waste evaluation and characterization standards, waste physical characteristics standards, waste packaging standards, waste safe handling standards, waste transportation standards, activity criteria and chemical concentration criteria.

nn. "Work" means all activities Respondent is required to perform under the Performance of the Work by Respondent and Additional Work Sections of these Orders.

IV. FINDINGS

6. All of the findings necessary for the issuance of these Orders pursuant to ORC §§ 3734.01, 6111.01 and 3745.01 have been made and are outlined below. Nothing in the findings shall be considered to be an admission by Respondent of any matter of law or fact. The Director of Ohio EPA has determined the following findings:

a. The Portsmouth Gaseous Diffusion Plant (GDP) is located on approximately 3,714 acres of federally owned land.

b. The Portsmouth Gaseous Diffusion Plant was owned and operated by the US Atomic Energy Commission, Energy Research and Development Administration, and US DOE from 1954 until 1993. United States Enrichment Corporation (USEC) continued uranium enrichment at the GDP from 1993 until May 2001.

c. The ownership of all the Facility, including real property and buildings, but excluding certain personal property and fixtures, is retained by US DOE. USEC leases and operates certain buildings/structures and real and personal property as described in USDOE-USEC lease agreements until they are returned to USDOE.

d. On September 30, 1986, the United States Environmental Protection Agency ("US EPA") and US DOE entered into a Federal Facility Compliance Agreement ("FFCA") addressing RCRA violations at the Facility, which were cited in July 8, 1985, and November 12, 1985 US EPA Findings of Non-compliance.

e. On August 31, 1989 US DOE entered into a Consent Decree with Ohio EPA to address conditions at the Facility. The aforementioned Consent Decree was filed in Civil Action Number C2-89-732, in the United States District Court for the Southern District of Ohio, Eastern Division ("Ohio Consent Decree").

f. On September 27, 1989, US EPA and US DOE entered into an Administrative Order on Consent, US EPA Docket Number V-W-90R-03 ("Administrative Order on Consent"), for the performance of response action activities at the Facility. On August 11, 1997, the Administrative Order on Consent was amended to streamline remediation of the Facility and to establish Ohio EPA as the regulator overseeing day-to-day remediation activities as provided in the Administrative Order on Consent ("Three Party Order").

g. On October 4, 1995, US DOE entered into administrative orders with Ohio EPA to address compliance with the Federal Facilities Compliance Act of 1992, 42 U.S.C. Section 6939c, enacted October 6, 1992.

h. In February 1998, Ohio EPA issued orders to Respondent for the management of Depleted Uranium Hexafluoride ("DUF6 Orders").

i. On March 15, 2001, Ohio EPA issued Ohio Hazardous Waste Installation and Operation Permit No. 04-66-0680 to Respondent.

j. The corrective action/response action process being conducted at the Facility pursuant to the Ohio Consent Decree employs a quadrant approach in which the Facility is divided into four quadrants for the purposes of organizing and facilitating the corrective action/response action process. The quadrants are based approximately on the direction of groundwater flow at the Facility.

k. The Ohio Consent Decree required US DOE to, among other tasks, complete a RCRA Facility Investigation ("RFI") for each of the quadrants established for the Facility. The RFI evaluated the risk and extent of contamination at the Facility. The RFI reports for each quadrant were approved in September 1997.

l. On March 17, 1999, Ohio EPA issued administrative orders ("Integration Orders") to Respondent for the integration of groundwater monitoring, surveillance, and maintenance programs that had previously been addressed pursuant to RCRA and/or Ohio's solid waste laws and rules. This order waived certain administrative requirements in order to allow Respondent to streamline the oversight of the various units at the Facility.

m. The Ohio Consent Decree also required US DOE to, among other tasks, complete a Corrective Measures Study for each quadrant or unit within the quadrant. The purpose of the Corrective Measures Study was to identify potential remedies for the Facility for Ohio EPA's consideration. The Corrective Measures Study reports are required to be completed pursuant to the Ohio Consent Decree.

n. Ohio EPA issued the following seven (7) Decision Documents for seven (7) solid waste management units or quadrants on the Facility. Each of the Decision Documents were issued as follows:

Decision Document	Month/Year issued
X-611A	June 1996
X-749B Peter Kiewit Landfill	May 1997
Quadrant III	May 1999
X-734 Landfill	October 1999
Quadrant IV	September 2000
Quadrant I	March 2001

X-701B	December 2003

o. The Decision Documents outline Ohio EPA's selected remedies for the above-referenced quadrants or units within the quadrants of the Facility. Currently, the selected remedies have been or are being implemented.

p. USEC announced its intention to terminate enrichment operations at the GDP in August 2000. The GDP portion of the Facility is no longer enriching uranium.

q. US DOE established a cold standby program in 2001 to maintain GDP enrichment re-start capability at the Facility.

r. In September 2005 the cold standby program ended, transitioning to a cold shutdown program. USDOE has determined that the GDP and support facilities will require deactivation, decontamination, and demolition with proper recycling or disposal of the resulting wastes and materials.

s. On February 22, 2008, Ohio EPA issued orders to Respondent for the Management of Department of Transportation compliant DUF6 cylinders from Oak Ridge, Tennessee ("Management Orders").

t. The Site is a hazardous waste facility, solid waste facility or other location where hazardous waste was treated, stored or disposed.

u. Respondent is or has been a generator of Contaminants or Contamination at the Site. Respondent has directly or indirectly allowed Contamination and/or directed the placement and/or disposal of Contaminants at the Site.

v. Hazardous substances are present at the Site that, if the provisions of these Orders are not complied with, threaten to cause or contribute to releases of hazardous substances to air or water or soil. Hazardous substances at the Site include, but are not limited to: polychlorinated biphenyls, asbestos, radionuclides, chlorinated hydrocarbons, lead, and mercury.

w. Because of their quantity, concentration, physical or chemical characteristics, the Contaminants found at the Site are "hazardous waste" as defined under ORC § 3734.01(J) or Section 1004(5) of RCRA, 42 U.S.C. § 6903(5).

x. The Contaminants found at the Site are "industrial waste" or "other wastes" as defined under ORC §§ 6111.01(C) and (D); "hazardous substance" as defined in

Section 101(14) of CERCLA, 42 U.S.C. § 9601(14); "hazardous constituents" as listed in Appendix VIII to 40 C.F.R. Part 261 and Appendix IX to 40 C.F.R. Part 264; "pollutant or contaminant" as defined in Section 101(33) of CERCLA, 42 U.S.C. § 9601(33); "regulated asbestos containing material" as defined in OAC Rule 3745-20-01(42); and "air pollutant" or "air contaminant" as defined in OAC Rule 3745-15-01(C).

y. D&D activities will generate materials containing or consisting of Contaminants, the release of which would pose a threat to human health and the environment.

z. The ground and surface waters at the Facility are "waters of the state" as defined in ORC § 6111.01(H).

aa. Ohio EPA has incurred D&D Response Costs and continues to incur D&D Response Costs associated with this Site.

bb. Respondent is a "person" as defined under ORC §§ 3704.01, 3734.01(G) and 6111.01(I).

cc. Conditions at the Site, absent compliance with these Orders, would threaten to cause or contribute to air or water pollution or soil contamination as provided in ORC § 3734.20(B).

dd. The migration and threatened migration of Contaminants to soil, ground water, or surface water at or from the Site constitutes a discharge to "waters of the state," as the term is defined in ORC § 6111.01(H).

ee. The Work required pursuant to these Orders will contribute to the prohibition or abatement of the discharge of Contaminants to waters of the State.

ff. Ohio EPA has preliminarily identified Site-specific objectives for use in performing the RI/FS(s) for the Site. Ohio EPA's Site-specific objectives are to:

(1) Prevent direct contact with contaminated wastes through the survey, sample and analysis, and subsequent treatment, containment, control and/or removal of all hazardous substances, hazardous wastes, hazardous constituents, solid wastes, industrial wastes, pollutant or contaminant, regulated asbestos containing material, air pollutant, air contaminant, mixed wastes, radiologic wastes and other wastes from buildings and structures, and through the dismantlement of all surplus equipment and structures, proper recycling of materials and disposal of all wastes, in a manner fully protective of human health and the environment, and in compliance with all applicable, relevant, and appropriate requirements (ARARs) and to-be-considered criteria (TBCs), (including,

as low as reasonably achievable (ALARA) criteria) established for the Site, pursuant to the National Contingency Plan (NCP).

(2) Prevent the migration of Contaminants to air, surface water, and soil in a manner protective of human health and the environment.

(3) If an on-Site disposal cell ("OSDC") is selected instead of or in addition to off-Site disposal, design and operation criteria shall comply with Ohio ARARs and Ohio EPA-approved WAC which shall specify allowable Contaminant concentrations, physical structure, and removable and fixed radionuclide levels.

Ohio EPA's Site-specific objectives may change over time as additional information about the Site is developed.

gg. In issuing these Orders, the Director has given consideration to, and based his determination on, evidence relating to technical feasibility and economic reasonableness of complying with these Orders, and to evidence relating to conditions calculated to result from compliance with these Orders, and their relation to the benefits to the people of the state to be derived from such compliance.

hh. The actions to be taken pursuant to these Orders are reasonable and necessary to protect the public health or safety or the environment as provided in ORC § 3734.20.

V. GENERAL PROVISIONS

7. Objectives of the Parties

a. The objectives of the Parties in entering into these Orders are to conduct D&D activities under the CERCLA Removal Action process for the structures identified in Attachment G (list of Non-Time Critical Removal Action (EE/CA) Groups) and the CERCLA RI/FS through RD/RA process for structures identified in Attachment H (list of Remedial Action (RI/FS) Process Buildings and Complex Facilities) and for any Site-wide Waste Disposition Evaluation Project; and protect public health and safety and the environment from the disposal, discharge, or release, or threat of release of Contaminants at the Site through performance of: i) for structures identified in Attachment G (list of Non-Time Critical Removal Action (EE/CA) Groups), an EE/CA(s), design and construction of the removal action(s), and development and implementation of the removal action(s) as set forth in an Action Memorandum(s) that will be developed by

Respondent, with Ohio EPA concurrence, following the performance of the EE/CA(s) by Respondent; ii) for the structures listed in Attachment H (list of Remedial Action (RI/FS) Process Buildings and Complex Facilities), and iii) for any Site-wide Waste Disposition Evaluation Project RI/FS(s), design and construction of the Remedy(ies), and development and implementation of final operation and maintenance plan(s) by Respondent as set forth in a Record of Decision(s) that will be developed by Respondent, with Ohio EPA concurrence, following the performance of the RI/FS(s) by Respondent.

b. Respondent shall perform the EE/CA(s), RI/FS(s) and RD/RA(s) to:

i. Investigate the threatened or potential releases of Contaminants at the Site as required by the NCP;

ii. Assess risk to human health and the environment posed by the Site as required by the NCP;

iii. Implement interim action(s) if necessary to address substantial threats at the Site;

iv. Collect sufficient data to support decisions regarding removal and remedial action(s) for the Site;

v. Develop and evaluate potential removal/remedial alternatives for the Site;

vi. Design the selected removal action(s)/remedy(ies), as concurred with by Ohio EPA for the Site and in accordance with any submissions concurred with, or approved, as applicable, by Ohio EPA;

vii. Construct the designed removal action(s)/remedy(ies) at the Site; and

viii. If an OSDC is chosen as a remedy, operate and maintain the constructed remedy at the Site.

c. It is the parties' intention to plan the Work under these Orders so that the Work is protective of human health, safety, and the environment and allows the timely execution of the Work in accordance with these Orders and timely execution of the environmental corrective action work in accordance with the Ohio Consent Decree. These Orders only address D&D activities as defined in the Definitions Section of these Orders.

8. Commitment of Respondent

Respondent shall perform the Work in accordance with these Orders including but not limited to the RI/FS SOW, RD/RA SOW, EE/CA SOW, all relevant guidance documents, and all standards and specifications, as concurred with by Ohio EPA pursuant to these Orders and in accordance with any Ohio EPA approved Milestones, the non-schedule related requirements of any Work Plan(s) concurred with by Ohio EPA, and, for the Site-Wide Waste Disposition Evaluation Project (if an OSDC is a component of the remedy selected under that project), any WAC, WAC Milestones and Closure Plan(s) as approved by Ohio EPA. Respondent shall reimburse Ohio EPA for all D&D Response Costs in accordance with the Reimbursement of Costs Section of these Orders and shall perform all other obligations of these Orders. Respondent agrees to schedule and perform the Work in accordance with these Orders in a manner to allow the timely execution of the Work in accordance with these Orders and the timely execution of the environmental corrective action work in accordance with the Ohio Consent Decree.

9. Compliance with Law

a. All activities undertaken by Respondent pursuant to these Orders shall be performed in accordance with the requirements of all applicable federal, state and local laws and regulations, and in a manner consistent with the NCP. The portions of response actions conducted entirely on-site pursuant to Work Plans or plans concurred with or approved by Ohio EPA under these Orders can also be, at Respondent's discretion, conducted pursuant to Section 121 of CERCLA, 42 USC Section 9621. Section 121(e)(1) specifically provides that "(n)o Federal, State, or local permit shall be required for the portion of any removal or remedial action conducted entirely onsite, where such remedial action is selected and carried out in compliance with this section." The NCP, at 40 C.F.R. Part 300.400(e) defines the term "on-site" to mean "the areal extent of contamination and all suitable areas in very close proximity to the contamination necessary for implementation of the response action."

b. Ohio EPA believes that activities conducted pursuant to these Orders, if concurred with or approved, as applicable, by Ohio EPA, would be considered necessary and consistent with the NCP.

c. Where any portion of the Work requires a permit, license or other authorization from Ohio EPA or any other state, federal or local government agency, Respondent shall submit applications in a timely manner and take all other actions necessary to obtain such permit, license or other authorization. These Orders are not, and shall not be construed to be, a permit, license or other authorization issued pursuant to any statute or regulation.

d. It is Ohio EPA's position that the Anti-Deficiency Act, 31 U.S.C. Section 1341, as amended, does not apply to any obligations set forth in these Orders, and that obligations herein are not affected by Respondent's failure to obtain adequate funds or appropriations from Congress. It is Respondent's position that the obligations set forth in these Orders are subject to the provisions of the Anti-Deficiency Act and are subject to the availability of funding. The Parties agree that it is premature to raise and resolve the validity of such positions at this time.

e. Nothing in these Orders is intended to excuse or in any way address violations of Ohio law or the Ohio Consent Decree occurring or beginning prior to the effective date of these Orders, regardless of when such violation is discovered.

f. Provisions of these Orders requiring the agreement or approval of either Respondent or Ohio EPA shall be construed such that a Party may not unreasonably withhold such agreement or approval.

VI. PERFORMANCE OF THE WORK BY RESPONDENT

10. Supervising Contractor

All Work performed pursuant to these Orders shall be performed by Respondent or by a contractor determined by Respondent to have requisite expertise in hazardous waste site investigation and remediation. Prior to the initiation of the Work, Respondent shall promptly notify Ohio EPA in writing of the name of any supervising contractor to be used in performing the Work under these Orders after selection and identification of such contractor.

11. Community Relations Plan/Project Initiation Meeting (PIM) / Site visit.

a. *Submission of Community Relations Plan.* Within sixty (60) days of the effective date of these Orders, unless otherwise agreed to by the Parties, Respondent shall submit to Ohio EPA a Community Relations Plan for Ohio EPA review and concurrence. This plan shall discuss the means by which Respondent will communicate with respect to D&D with the Site Specific Advisory Board (SSAB) and other local stakeholders and the public. Ohio EPA will review the Community Relations Plan pursuant to the procedures set forth in the Review of Submissions Section of these Orders. Upon Ohio EPA's concurrence with the Community Relations Plan, Respondent shall implement the Community Relations Plan concurred with by Ohio EPA.

b. Within 60 days of the effective date of these Orders, unless otherwise agreed to

by the Parties, Respondent shall:

i. meet with Ohio EPA to discuss, as described in Sections 2.1 and 2.2 of the RI/FS SOW, the Site-wide Waste Disposition Evaluation Project, and Respondent's performance of the Work required under these Orders, including PER submission deadlines for the Site-Wide Waste Disposition Evaluation Project; the PER submission deadlines are enforceable Milestones; and

ii. coordinate with Ohio EPA to establish a date for a Site visit.

c. Within 180 days of the effective date of these Orders, unless otherwise agreed to by the Parties, Respondent shall:

i. Meet with Ohio EPA to discuss, as described in Sections 2.1 and 2.2 of the RI/FS SOW, the Remedial Action of Process Buildings and Complex Facilities, and Respondent's performance of the Work required under these Orders, including PER submission deadlines for the Remedial Action of Process Buildings and Complex Facilities; the PER submission deadlines are enforceable Milestones; and

ii. Meet with Ohio EPA to discuss, as described in Sections 2.1 and 2.2 of the EE/CA SOW, the initial Non-Time Critical Removal Action for the Non-time Critical Removal Action (EE/CA) Groups listed in Attachment G, and Respondent's performance of the Work required under these Orders, including Removal Site Evaluation (RSE) submission deadlines for such Removal Action; the RSE submission deadlines are enforceable Milestones; and

iii. Coordinate with Ohio EPA to establish a date for a Site visit with respect to the actions set forth in this Paragraph 11.c. of these Orders.

12. General Requirements Applicable to both RODs and Action Memoranda Submitted to Ohio EPA by Respondent under these Orders:

a. Any RODs or Action Memoranda that are developed and submitted to Ohio EPA for review prior to any Waste Disposition ROD being finalized that selects an OSDC as a component of the remedial alternative shall:

i. require that waste generated pursuant to that ROD or Action Memorandum be taken off-Site for disposal;

ii. require that any staging, prior to off-Site disposal, of any hazardous or low-level mixed waste be done in compliance with ARARs without waiver(s) unless such waiver(s) is specifically identified by Respondent and is agreed to by Ohio EPA in writing (Ohio can relay its agreement with a waiver of an ARAR in either its concurrence with an applicable ROD, Action Memorandum, RD/RA Work Plan, Removal Action Work Plan, or in a separate written correspondence), and such waiver is in accordance with the NCP;

iii. require that any staging, prior to off-Site disposal, of any other wastes be done in compliance with ARARs without waiver(s), unless such waiver(s) is specifically identified by Respondent and is agreed to by Ohio EPA in writing (Ohio can relay its agreement with a waiver of an ARAR in either its concurrence with an applicable ROD, Action Memorandum, RD/RA Work Plan, Removal Action Work Plan, or in a separate written correspondence), and such waiver is in accordance with the NCP;

iv. require any RD/RA Work Plan or Removal Action Work Plan to describe how the staging will be done in accordance with ARARs, unless Ohio EPA agrees, in writing, to a waiver of an ARAR and the waiver is in accordance with the NCP; and

v. require that the RD/RA Work Plan or Removal Action Work Plan identify a Milestone by which all staged waste will be disposed or otherwise sent off-Site.

Respondent may include a contingent remedy in a ROD or Action Memorandum that states that if an OSDC or, with Ohio EPA written agreement, another acceptable disposition pathway, becomes operational and available for the waste stream pursuant to the Ohio EPA approved WAC, prior to the Milestone (identified pursuant to subparagraph a.v. of this Paragraph) in the Ohio EPA concurred with RD/RA Work Plan or Removal Action Work Plan, that such waste can be disposed of in the OSDC or, with Ohio EPA written agreement, in accordance with another acceptable disposition pathway as opposed to off-Site. Any such contingency shall not extend beyond the Milestone (identified pursuant to subparagraph a.v. of this Paragraph) in the Ohio EPA concurred with RD/RA Work Plan or Removal Action Work Plan. Nothing herein prevents Respondent from pursuing an amendment to such a ROD or Action Memorandum to allow for another acceptable disposition pathway, with Ohio EPA written agreement, or allow on-Site disposal if an OSDC becomes operational and able to accept for disposal the waste stream identified in the ROD or Action Memorandum prior to the Milestone (identified pursuant to subparagraph a.v. of this Paragraph) in the

Ohio EPA concurred with RD/RA Work Plan or Removal Action Work Plan. For purposes of this Paragraph, Ohio EPA agrees to not unreasonably withhold its agreement.

b. If a Waste Disposition ROD is finalized that does not select an OSDC as the remedial alternative, no subsequent RODs or Action Memoranda shall rely on an OSDC as a component of the removal action or remedy. If a Waste Disposition ROD is finalized that selects an OSDC as the remedial alternative, RODs and Action Memoranda issued subsequent to the Waste Disposition ROD being finalized may include off-Site disposal as a contingent remedy/removal action in the event the OSDC is not operational and able to accept for disposal the waste stream identified in the ROD or Action Memorandum by the Milestone) identified in the Ohio EPA concurred with RD/RA Work Plan or Removal Action Work Plan for the disposition of the affected waste(s). If such a contingent off-Site disposal remedy/removal action is not included in the ROD/Action Memorandum, and the OSDC is not operational and able to accept for disposal by the Milestone identified in the Ohio EPA concurred with RD/RA Work Plan or Removal Action Work Plan for the disposition of the affected waste(s), Respondent shall expeditiously pursue either an Explanation of Significant Difference(s) or a ROD modification, as applicable, in accordance with the NCP.

c. For purposes of these Orders a Waste Disposition ROD is considered finalized if Ohio EPA has concurred with the Waste Disposition ROD.

d. All ROD(s) and Action Memorandum(s) that rely in any manner on waste disposition in any OSDC selected in the Waste Disposition ROD shall require such waste disposition to be in accordance with the Ohio EPA approved WAC and shall require Respondent to prepare and submit submissions to Ohio EPA for review and approval pursuant to the Review of Submissions provisions of these Orders to effectuate any modifications to the Ohio EPA approved WAC that are necessary to support such waste disposition.

13. Remedial Investigation and Feasibility Study

a. *Submission of PER(s)*. In accordance with the Compliance Schedule Section of these Orders, unless otherwise agreed to by the Parties, Respondent shall submit to Ohio EPA a Pre-Investigation Evaluation Report(s) ("PER") documenting the performance and results of the scoping tasks identified in Sections 2.2 and 2.3 of the RI/FS SOW. If an OSDC is evaluated as a possible remedial alternative, Respondent agrees to evaluate as one of the alternatives or sub-alternatives in the FS a fully ARAR compliant OSDC, with no ARARs waived, as part of the PER. This evaluation in the FS shall include identifying all

state and federal ARARs and to be considered (TBC) criteria for an OSDC, including but not limited to any ARARs for siting, design, waste acceptance criteria (WAC), construction, operation, maintenance, closure and post-closure care requirements. Section 2.2 of the RI/FS SOW states the PER(s) shall address each RI/FS SOW task by one of the following three methods: 1) indicating that the task has already been performed and providing the results of the task and supporting documentation; 2) indicating that the task is not relevant to the Site and providing the technical justification for omitting the task; or 3) indicating that the task is relevant to the Site and will be addressed in the RI/FS Work Plan. Section 2.3 of the RI/FS SOW, attached hereto as Attachment A, refers to the criteria for development of the PER(s).

b. *Submission of RI/FS Work Plan(s).* In accordance with the Compliance Schedule Section of these Orders, Respondent shall submit to Ohio EPA a RI/FS Work Plan(s) and the Supporting Documents for the Site. Any RI/FS Work Plan shall incorporate the applicable PER and address Ohio EPA's comments on the PER. If an OSDC is going to be evaluated as a possible remedial alternative, the RI/FS Work Plan shall include: i) any activities needed in order to evaluate as an alternative or sub-alternative a fully ARAR compliant OSDC, with no ARARs waived; ii) a process for refining and/or identifying additional ARARs and TBC criteria for an OSDC, including but not limited to ARARs for siting, design, WAC, construction, operation, maintenance, closure and post-closure care requirements; and iii) a draft WAC document. Paragraph 13.c. herein refers to the criteria for development of the RI/FS Work Plan(s).

c. *Criteria for RI/FS Work Plan(s) development.* The PER(s), the RI/FS Work Plan(s), Supporting Documents and any other deliverables required under any RI/FS Work Plan(s) concurred with by Ohio EPA, shall be developed in conformance with the RI/FS SOW contained in Attachment A of these Orders and the guidance documents listed in Attachment C of these Orders. The RI/FS Work Plan(s) shall include a proposed schedule that includes a completion schedule for each task and clearly identifies which task completion schedules are Milestones. If Ohio EPA determines that any additional or revised guidance documents affect the Work to be performed in implementing an RI/FS, Ohio EPA will notify Respondent so that the applicable PER(s), RI/FS Work Plan(s), and other affected documents, if any are affected, can be modified by Respondent accordingly.

d. *Handling of any inconsistencies.* Should Respondent identify any inconsistency between any of the laws and regulations and guidance documents which it is required to follow by these Orders, Respondent shall notify Ohio EPA in writing of each inconsistency and the effect of the inconsistencies upon the Work to be performed. Respondent shall also recommend, along with a supportable

rationale justifying each recommendation, the requirement Respondent believes should be followed. Respondent shall implement the affected Work with Ohio EPA concurrence and/or approval, as applicable.

e. *Review by Ohio EPA.* Ohio EPA will review the PER(s), RI/FS Work Plan(s), and Supporting Documents pursuant to the procedures set forth in the Review of Submissions Section of these Orders.

f. *Implementation of RI/FS Work Plan(s).* Upon Ohio EPA's concurrence with a RI/FS Work Plan, Respondent shall implement the RI/FS Work Plan concurred with by Ohio EPA. Respondent shall submit all plans, reports, or other deliverables required under the RI/FS Work Plan(s) concurred with by Ohio EPA, in accordance with the Ohio EPA approved Milestones set forth therein and the non-schedule related requirements of the RI/FS Work Plan(s) concurred with by Ohio EPA, for review and concurrence or approval, as applicable, pursuant to the Review of Submissions Section of these Orders.

14. Proposed Plan and Record of Decision

Based upon the RI/FS(s) concurred with by Ohio EPA, the Proposed Plan(s) for remedial action shall be prepared by Respondent, with Ohio EPA input and concurrence, for public review and comment in accordance with the Compliance Schedule Section of these Orders. The Proposed Plan(s) shall be prepared pursuant to US EPA's policy titled "A Guide to Preparing Superfund Proposed Plans, Records of Decision, and other Remedy Selection Decision Documents" (July 1999)," and any subsequent amendments thereto. Additionally, if an OSDC is anticipated, the Proposed Plan for any such OSDC shall include, at a minimum, an Ohio EPA approved WAC. Performance measures shall be consistent with DOE requirements for protection of the public and environment and evaluated for a 1,000 year period following disposal facility closure as discussed in DOE Manual 435.1-1, Radioactive Waste Management Manual Chapter IV, paragraph P(2), pages IV-9 through IV-10.

In accordance with the Compliance Schedule Section of these Orders, Respondent shall develop and submit a responsiveness summary(ies) to Ohio EPA for input and concurrence. Ohio EPA will review the responsiveness summary(ies) pursuant to the procedures set forth in the Review of Submissions Section of these Orders. Unless amendment of the Proposed Plan is necessary as set forth in the NCP at 40 C.F.R. Section 300.430, Respondent, with input and concurrence from Ohio EPA, may develop a draft ROD that revises the proposed remedial alternative(s) in response to those comments or that reiterates the proposed remedial alternative(s) without change. Respondent may have an additional thirty (30) days to submit the responsiveness summary to Ohio EPA if it provides written notification to Ohio EPA before the initial thirty (30) day timeframe ends. Thereafter, in the event Respondent needs additional

time beyond the initial thirty (30) days plus the thirty (30) day extension, Respondent may submit a request for another extension to Ohio EPA for review and approval.

The selection of the proposed remedial alternative(s) shall be based on the proposed remedy, along with any changes to the remedy based on public comment, and any such changes shall be subject to Ohio EPA's input and concurrence or approval, as applicable. The selection of the proposed alternative shall be documented by Respondent, with Ohio EPA input and concurrence (any WAC, Milestones, Work Plan schedules, and Closure Plan(s) therein are subject to Ohio EPA approval, as opposed to concurrence, in accordance with the Review of Submissions Section of these Orders), in a ROD(s) for the Site. The ROD(s) shall be issued in accordance with the Compliance Schedule Section of these Orders. The ROD(s) shall include a summary of the applicable RI/FS, a summary of the remedy selection decision and the responsiveness summary. The activities required by this Paragraph shall be performed consistent with the substantive provisions of US EPA's policy titled "A Guide to Preparing Superfund Proposed Plans, Records of Decision, and other Remedy Selection Decision Documents" (July 1999)."

15. Remedial Design and Remedial Action

a. *RD/RA project initiation meeting(s)*. If requested by either Party, Respondent shall meet with Ohio EPA on a mutually agreed date to discuss the requirements of the RD/RA Work Plan(s).

b. *Submission of RD/RA Work Plan(s)*. In accordance with the Compliance Schedule Section of these Orders, unless otherwise agreed to by the Parties, Respondent shall submit to Ohio EPA a RD/RA Work Plan(s) and schedule, including clearly identified Milestone dates, for implementation of the Work required under the Performance of Work Section of these Orders. The RD/RA Work Plan(s) shall provide for the design, construction, final operation and maintenance of the remedy(ies) as set forth in the ROD(s). If a ROD includes an OSDC, the RD/RA Work Plan for any such OSDC shall incorporate the approved WAC and include tasks for development and approval of Cell Design Components, an Operations Plan, and a WAC implementation plan that includes a Waste Acceptance System Requirements Document, Waste Form Compliance Plan, and Waste Acceptance Delivery Schedules. Paragraph 15.c. herein refers to the criteria for development of the RD/RA Work Plan(s).

c. *Criteria for RD/RA Work Plan(s) development*. The RD/RA Work Plan(s), Supporting Documents, and any other deliverables required under the RD/RA Work Plan(s) concurred with by Ohio EPA shall be developed in conformance with the RD/RA SOW contained in Attachment B of these Orders, and the guidance documents listed in Attachment C of these Orders. The RD/RA Work

Plan(s) shall include a proposed schedule that includes a completion schedule for each task and clearly identifies which task completion schedules are Milestones. If Ohio EPA determines that any additional or revised guidance documents affect the Work to be performed in implementing a RD/RA concurred with by Ohio EPA, Ohio EPA will notify Respondent so that the applicable RD/RA Work Plan(s) and other affected documents can be modified accordingly.

d. *Handling any inconsistencies.* Should Respondent identify any inconsistency between any of the laws and regulations and guidance documents that Respondent is required to follow by these Orders, Respondent shall notify Ohio EPA in writing of each inconsistency and the effect of the inconsistencies upon the Work to be performed. Respondent shall also recommend, along with a supportable rationale justifying each recommendation, the requirement that Respondent believes should be followed. Respondent shall implement the affected Work with Ohio EPA concurrence and/or approval, as applicable.

e. *RD/RA Work Plan Review by Ohio EPA.* Ohio EPA will review the RD/RA Work Plan(s) and Supporting Documents pursuant to the procedures set forth in the Review of Submissions Section of these Orders.

f. *Implementation of the RD/RA Work Plan(s).* Upon Ohio EPA's concurrence with a RD/RA Work Plan, Respondent shall implement the RD/RA Work Plan. Respondent shall submit all plans, reports, or other deliverables required under the RD/RA Work Plan(s) concurred with by Ohio EPA, in accordance with the Ohio EPA approved Milestones set forth therein and the non-schedule related requirements of the RD/RA Work Plan(s) concurred with by Ohio EPA, for review and concurrence or approval, as applicable, pursuant to the Review of Submissions Section of these Orders.

16. Final Operation and Maintenance Plan

If an OSDC is chosen as a remedy, the Respondents shall develop a Final Operation and Maintenance Plan(s) ("Final O&M Plan(s)") in accordance with the Compliance Schedule Section of these Orders. The Final O&M Plan(s), including a schedule for implementation, shall be submitted in accordance with the applicable RD/RA Work Plan concurred with by Ohio EPA. Ohio EPA will review the Final O&M Plan(s) pursuant to the procedures set forth in the Review of Submissions Section of these Orders. Upon concurrence with a Final O&M Plan by Ohio EPA, Respondent shall implement the Final O&M Plan. Respondent shall submit all plans, reports, or other deliverables required under the Final O&M Plan(s) concurred with by Ohio EPA, in accordance with the Ohio EPA approved Milestone(s) set forth therein and the non-schedule related requirements of the Final O&M Plan(s) concurred with by Ohio EPA, for review and concurrence or approval, as applicable, pursuant to the Review of

Submissions Section of these Orders. Respondent and Ohio EPA agree to work together to identify opportunities to merge or combine multiple documents to accelerate/streamline the documentation process.

17. RSE and RSI

In accordance with the Compliance Schedule Section of these Orders, unless otherwise agreed to by the Parties, Respondent shall submit to Ohio EPA a RSE for each building/structure or group of buildings/structures listed in Attachment G of these Orders. The RSE includes a removal preliminary assessment and, if warranted, a removal site inspection (RSI) report as described in Appendix D (EE/CA SOW). The RSE shall include a determination if more information is needed such that an RSI is warranted to characterize any building/structure or group of buildings/structures to support development of the EE/CA and evaluation of any removal alternatives therein.

18. EE/CA and Action Memorandum

Based upon the RSE and RSI, if an RSI was conducted, concurred with by Ohio EPA, the EE/CA for removal action(s) shall be prepared by Respondent, with Ohio EPA input and concurrence (any WAC, Milestones, Work Plan schedules, and Closure Plan(s) therein are subject to Ohio EPA approval, as opposed to concurrence, in accordance with the Review of Submissions Section of these Orders), for public review and comment in accordance with the Compliance Schedule Section of these Orders. The EE/CA shall be prepared in conformance with the EE/CA SOW contained in Attachment D hereto, the guidance documents listed in Attachment C of these Orders, and pursuant to USEPA Guidance EPA/540/F-94/009, titled "Conducting Non-Time Critical Removal Actions Under CERCLA," and any subsequent amendments thereto. Additionally, if an on-Site disposal cell is anticipated, the EE/CA shall, at a minimum, address whether removal action wastes meet any Ohio EPA approved WAC. In accordance with Compliance Schedule Section of these Orders, Respondent shall develop and submit an Action Memorandum(a), including a responsiveness summary(ies) to Ohio EPA for input and concurrence. Ohio EPA will review the Action Memorandum(a), including responsiveness summary(ies), pursuant to the procedures set forth in the Review of Submissions Section of these Orders. In the Action Memorandum(a), Respondent, with input and concurrence from Ohio EPA (any WAC, Milestones, Work Plan schedules, and Closure Plan(s) therein are subject to Ohio EPA approval, as opposed to concurrence, in accordance with the Review of Submissions Section of these Orders), may revise the proposed removal action(s) identified in the EE/CA(s) in response to those comments or may finalize the proposed removal action(s) identified in the EE/CA(s) without change. Respondent may have an additional thirty (30) days to submit the Action Memorandum(a), including responsiveness summary(ies), to Ohio EPA if it provides written notification to Ohio EPA before the initial thirty (30) day timeframe ends. Thereafter, in the event

Respondent needs additional time beyond the initial thirty (30) days plus the thirty (30) day extension, Respondent may submit a request for another extension to Ohio EPA for review and approval.

The selection of the proposed removal alternative(s) shall be based on the proposed removal action, along with any changes to the removal action based on public comment, and any such changes shall be subject to Ohio EPA's input and concurrence (any WAC, Milestones, Work Plan schedules, and Closure Plan(s) therein are subject to Ohio EPA approval, as opposed to concurrence, in accordance with the Review of Submissions Section of these Orders). The selection of the proposed removal action alternative shall be documented by Respondent, with Ohio EPA input and concurrence (any WAC, Milestones, Work Plan schedules, and Closure Plan(s) therein are subject to Ohio EPA approval, as opposed to concurrence, in accordance with the Review of Submissions Section of these Orders), in a Action Memorandum(s) for the Site. The Action Memorandum(s) shall be issued in accordance with the Compliance Schedule Section of these Orders. The Action Memorandum(s) shall include a summary of the applicable RSE and RSI, if an RSI was conducted, a summary of the removal action selection decision and the responsiveness summary. The activities required by this Paragraph shall be performed consistent with the substantive provisions of US EPA's Guidance EPA/540/F-94/009, titled "Conducting Non-Time Critical Removal Actions Under CERCLA."

19. Removal Action Work Plan

a. *Removal Action Project Initiation Meeting(s)*. If requested by either Party, Respondent shall meet with Ohio EPA on a mutually agreed date to discuss the requirements of the Removal Action Work Plan(s).

b. *Submission of Removal Action Work Plan(s)*. In accordance with the Compliance Schedule Section of these Orders, unless otherwise agreed to by the Parties, Respondent shall submit to Ohio EPA a Removal Action Work Plan(s) and schedule, including clearly identified Milestone dates, for implementation of the Work required under the Performance of Work Section of these Orders. The Removal Action Work Plan(s) shall provide for the design, construction, final operation and maintenance of the Removal Action(s) as set forth in the Action Memorandum(s). Additionally, if an OSDC is anticipated, the EE/CA shall, at a minimum, address whether Removal Action wastes meet any Ohio EPA approved WAC and shall include a WAC implementation plan that includes a Waste Acceptance System Requirements Document, Waste Form Compliance Plan, and Waste Acceptance Delivery Schedules. Paragraph 19.c. herein refers to the criteria for development of the Removal Action Work Plan(s).

c. *Criteria for Removal Action Work Plan(s) Development*. The Removal Action Work Plan(s), Supporting Documents, and any other deliverables required under the Removal Action Work Plan(s) concurred with by Ohio EPA shall be developed in conformance with the Removal Action Work Plan Outline contained in Attachment E of these Orders, and the guidance documents listed in Attachment C of these Orders. The Removal Action Work Plan(s) shall include a proposed schedule that includes a completion schedule for each task and clearly identifies which completion schedules are Milestones. If Ohio EPA determines that any additional or revised guidance documents affect the Work to be performed in implementing a Removal Action Work Plan concurred with by Ohio EPA, Ohio EPA will notify Respondent so that the applicable Removal Action Work Plan(s) and other affected documents can be modified accordingly.

d. *Handling any Inconsistencies.* Should Respondent identify any inconsistency between any of the laws and regulations and guidance documents that Respondent is required to follow by these Orders, Respondent shall notify Ohio EPA in writing of each inconsistency and the effect of the inconsistencies upon the Work to be performed. Respondent shall also recommend, along with a supportable rationale justifying each recommendation, the requirement that Respondent believes should be followed. Respondent shall implement the affected Work with Ohio EPA concurrence and/or approval, as applicable.

e. *Removal Action Work Plan Review by Ohio EPA*. Ohio EPA will review the Removal Action Work Plan(s) and Supporting Documents pursuant to the procedures set forth in the Review of Submissions Section of these Orders.

f. *Implementation of the Removal Action Work Plan(s)*. Upon Ohio EPA's concurrence with a Removal Action Work Plan, Respondent shall implement the Removal Action Work Plan. Respondent shall submit all plans, reports, or other deliverables required under the Removal Action Work Plan(s) concurred with by Ohio EPA, in accordance with the Ohio EPA approved Milestones set forth therein and the non-schedule related requirements of the Removal Action Work Plan(s) concurred with by Ohio EPA, for review and concurrence or approval, as applicable, pursuant to the Review of Submissions Section of these Orders.

VII. COMPLIANCE SCHEDULE

20. Establishment of Milestones and Target Dates:

a. Milestones shall be established for a three year rolling period consisting of the current federal fiscal year (FY) plus two additional federal fiscal years (FY+1 and FY+2). On the effective date of these Orders, the enforceable Milestones in

Tables 1A through 1C, below, that occur within the next three federal fiscal years are established as Milestones for: FY (October 1, 2009 - September 30, 2010); FY+1 (October 1, 2010 - September 30, 2011); and FY+2 (October 1, 2011 - September 30, 2012). On October 1, 2010 and every year thereafter on October 1 during the pendency of these Orders, what were previously FY+1 Milestones will become the current fiscal year (FY) Milestones, what were previously FY+2 Milestones will become FY+1 Milestones, and previously identified FY+3 target dates shall be converted to FY+2 Milestones. All Milestones for FY through FY+2, both initially and annually thereafter, shall be submitted in writing by Respondent to Ohio EPA for information and approval of previously unidentified Milestones. All conversions will be automatic and remain in effect, unless Respondent notifies Ohio EPA of any need to extend the Milestones, pursuant to Paragraph 21 of these Orders.

b. Within thirty (30) days of the effective date of these Orders, Respondent shall provide Ohio EPA with a projection of those Milestone activities listed in the Tables below that Respondent anticipates to occur in FY, FY+1, and FY+2. On August 31, 2010 and annually thereafter, Respondent shall submit an updated projection of those Milestone activities listed in the Tables below that Respondent anticipates to occur within the next three FYs (FY, FY+1, and FY+2). These projections will be submitted for Ohio EPA's informational and review and comment purposes only and are not subject to the Review of Submissions Section of these Orders.

c. Non-enforceable Target dates shall be established for the out-years beyond the three year rolling Milestone period. On the effective date of these Orders, non enforceable target dates in the schedule set forth in Table 1E, below, are established for the out-years beyond FY+2.

d. Within thirty (30) days of the effective date of these Orders and then no later than August 31 of every year thereafter, commencing with August 31, 2010, Respondent shall identify PIM dates for any D&D Removal Action(s) and Remedial Action(s) that Respondent anticipates to occur in FY, FY+1 and FY+2 and that are not already included in Removal Action(s) and Remedial Action(s) addressed by Table 1A, 1B, or 1C. Respondent shall indicate which building(s)/structure(s) will be included in the action(s) and whether such anticipated action(s) are part of the non-time critical Removal Action(s) for the Non-Time Critical Removal Action (EE/CA) Groups, part of the Remedial Action(s) for the Remedial Action (RI/FS) Process Buildings and Complex Facilities, or part of the Site-Wide Waste Disposition Evaluation Project. PIM dates identified for FY, FY+1, and FY+2 are enforceable Milestones.

e. In accordance with the Funding Section of these Orders, Ohio EPA will consider

funding availability in reviewing Respondent's proposals for establishing and adjusting Milestones and target dates pursuant to these Orders.

Table 1 : COMPLIANCE SCHEDULE

Table 1A - Milestones for Non-Time Critical Removal Actions

Note: Submissions identified below may require multiple review iterations prior to approval or concurrence.

Activity to be performed for each Building/Structure or Group of Buildings/Structures

By the date established during the Project Initiation Meeting (PIM) held pursuant to the Performance of the Work Section of these Orders or, in the case of subsequent Milestones, the date established during any PIM established pursuant to Paragraph 20.d	Submit Removal Site Evaluation (RSE), including a proposed date for submission of a draft EE/CA, a removal preliminary assessment and, if warranted, a removal site inspection, to Ohio EPA for review and concurrence.
By 1) the date established in the approved schedule in the concurred with RSE, or 2) the date upon which DOE takes possession of a building/structure or a group of buildings/structures to which access is required to complete the RSE plus the amount of time provided for in the RSE for preparation and submittal of the draft EE/CA, whichever comes later	Submit draft EE/CA to Ohio EPA for review and concurrence.
Within 45* days of receipt of Ohio EPA concurrence on the EE/CA	Public notice the EE/CA, initiating the 30-day public comment period.
Within 60* days of close of the public comment period	Submit draft Action Memorandum with public responsiveness summary to Ohio EPA for review and concurrence.
Within 90* days of receipt of Ohio EPA concurrence on the Action Memorandum	Submit draft Removal Action Work Plan to Ohio EPA for review and concurrence. Any schedules therein are subject to Ohio EPA approval.
By the date established in the approved schedule in the concurred with Removal Action Work Plan	Initiate Removal Action.
Within 150* days of both completion of the Removal Action field work and receipt of all validated data	Submit draft Removal Action Completion Report to Ohio EPA for review and concurrence.
* Unless otherwise mutually agreed to in writing by the Parties.	

Table 1B - Milestones for Remedial Action of Process/Complex Buildings/Structures

Note: Submissions identified below may require multiple review iterations prior to approval or concurrence.

Activity to be performed for each Building/Structure or Group of Buildings/Structures	
By the date established during the Project Initiation Meeting (PIM) held pursuant to the Performance of Work Section of these Orders or, in the case of subsequent Milestones, the date established during any PIM established pursuant to Paragraph 20.d.	Submit PER to Ohio EPA for review and comment.
Within 180* days of comments on the PER, or within 180* days of the date upon which DOE takes possession of a building/structure or group of buildings/structures to which access is required to complete the RI/FS Work Plan, whichever comes later	Submit Draft RI/FS Work Plan to Ohio EPA for review and concurrence. Any schedules therein are subject to Ohio EPA approval.
By the date established in the approved schedule in the concurred with RI/FS Work Plan	Submit Draft RI/FS Report to Ohio EPA for review and concurrence.
Within 90* days of receipt of final concurrence with the RI/FS Report	Submit Draft Proposed Plan to Ohio EPA for input and concurrence.
Within 45* days of receipt of final concurrence with the Proposed Plan	Public notice the Proposed Plan, initiating the 30-day public comment period.
Within 30* days of public notice of Proposed Plan	Conduct public meeting.
Within 120* days of close of the public comment period for Proposed Plan	Submit Draft Record of Decision (ROD) and Responsiveness Summary to Ohio EPA for review and concurrence.
Within 45* days of receipt of final concurrence with the Draft ROD	Publish notice of availability of the Final ROD in a major local newspaper of general circulation.
Within 180* days of receipt of Ohio EPA concurrence with the Draft ROD	Submit Draft RD/RA Work Plan (if selected remedy requires field work) including RD/RA schedule to Ohio EPA for review and concurrence. Any schedules therein are subject to Ohio EPA approval.
By the date established in the approved schedule in the concurred with RD/RA Work Plan	Submit Remedial Design, if applicable per the ROD, including plans, specifications and construction phases to Ohio EPA for review and concurrence.

By the date established in the approved schedule in the concurred with RD/RA Work Plan	Initiate Remedial Action.
Within 120* days of both completion of field work and receiving all validated data	Submit Draft Field Work Completion Report (and O&M Plan, if appropriate) to Ohio EPA for review and concurrence.
* Unless otherwise mutually agreed to in writing by the Parties.	

Table 1C - Milestones for Site-Wide Waste Disposition Remedial Action Project

Note: Submissions identified below may require multiple review iterations prior to approval or concurrence.

Activity to be Performed	
By the date established during the Project Initiation Meeting (PIM) held pursuant to the Performance of Work Section of these Orders or, in the case of subsequent Milestones, the date established during any PIM established pursuant to Paragraph 20.d.	Submit PER to Ohio EPA for review and comment.
Within 180* days of comments on the PER, or within 180* days of the date upon which DOE takes possession of any property or buildings/structures to which access is required to complete the RI/FS Work Plan, whichever comes later	Submit Draft RI/FS Work Plan to Ohio EPA for review and concurrence. Any schedules therein are subject to Ohio EPA approval.
By the date established in the approved schedule in the concurred with RI/FS Work Plan	Submit Draft RI/FS Report to Ohio EPA for review and concurrence, including draft preliminary WAC if an alternative including a potential On-Site Disposal Cell (OSDC) is retained in the FS. Any WAC submittal is subject to Ohio EPA approval.
Within 90* days of receipt of final concurrence with the RI/FS Report	Submit Draft Proposed Plan to Ohio EPA for input and concurrence. The Draft Proposed Plan shall include a WAC for Ohio EPA approval.
Within 45* days of concurrence with the Proposed Plan	Public notice the Proposed Plan, initiating the 30-day public comment period.
Within 30* days of public notice of Proposed Plan	Conduct public meeting.
Within 120* days of close of the public comment period for Proposed Plan	Submit Draft Record of Decision (ROD), including the approved WAC if an OSDC is selected, and Responsiveness Summary to Ohio EPA for review and concurrence.
Within 45* days of receipt of final concurrence with the Draft ROD	Publish notice of availability of the Final ROD including the approved WAC in a major local newspaper of general circulation.

Within 180* days of receipt of Ohio EPA concurrence with the Draft ROD	Submit Draft RD/RA Work Plan and schedule to Ohio EPA for review and concurrence. Any schedules therein are subject to Ohio EPA approval.
By the date established in the approved schedule in the concurred with RD/RA Work Plan	Submit Remedial Design, if applicable per the ROD, including plans, specifications and construction phases to Ohio EPA for review and concurrence.
By the date established in the approved schedule in the concurred with RD/RA Work Plan	Initiate Remedial Action.
If OSDC is selected, 90* days prior to final waste receipt	Submit Draft Closure Plan (including post closure/O&M Plan and environmental covenant) to Ohio EPA for review and approval.
Within 90* days of both completion of closure Work contained in the Closure Plan and receiving any necessary validated data.	Submit Closure Certification Report to Ohio EPA for review and concurrence.
* Unless otherwise mutually agreed to in writing by the Parties.	

Table 1D – Subsequent Milestones

Subsequent Milestones	Activity to be Performed
After the PIM, scheduled and held in accordance with Paragraph 20.d of these Orders, upon the dates established in the PIM, and upon any other Milestone date established pursuant to these Orders	Comply with the Milestones for the identified removal action(s) and remedial action(s) based upon the durations and requirements set forth in Table 1A, 1B, or 1C, as applicable, and Paragraph 20 of these Orders, as well as any other Milestones established in the PIM and these Orders for the identified removal action(s) and remedial action(s).

Table 1E - Target Dates

Targets	Activity to be Performed
Within thirty (30) days of the effective date of these Orders and then no later than August 31 of every year thereafter, commencing with August 31, 2010.	Respondent shall submit to Ohio EPA a projection of those activities that Respondent anticipates to be performed for FY+3 and beyond and for which Respondent is able to identify with a reasonable amount of certainty the timeframe(s) when such removal action(s) and remedial action(s) are anticipated to occur. Any submission made pursuant to this requirement is for Ohio EPA informational and review and comment purposes only and is not subject to the Review of Submissions Section of these Orders.

21. Extensions:

a. If Respondent or Ohio EPA identifies a need for Respondent to extend a Milestone(s) set forth in the Compliance Schedule or other Milestone(s) established pursuant to these Orders, the Respondent or Ohio EPA shall provide written notification within 30 days of the identification of such need and the reasons therefore. The notification shall be of sufficient detail to fully explain the rationale for an extension of the Milestone(s), including an accounting of the circumstances that justify the proposed extension.

b. Ohio EPA agrees to consider, in its review, all reasons provided by Respondent in its proposal to extend the Milestone(s).

c. Within thirty (30) days from the date of the written notification of the need for an extension of a Milestone(s), Respondent shall submit a revised draft of the document or submission containing or establishing the original Milestone documents (i.e., Compliance Schedule, Work Plan, etc.) that reflects the requested extension.

d. Prior to approving or disapproving a proposed extension of the Milestone(s), Ohio EPA will consult with Respondent regarding the proposed extension. Respondent and Ohio EPA shall attempt to resolve any disagreement with respect to a proposed extension of a Milestone, pursuant to the provisions of Paragraphs 49 and 50 of the Dispute Resolution Section of these Orders. Determinations by Ohio EPA to not approve a proposed extension will be accompanied by a written statement detailing the reasons why Ohio EPA did not approve the extension.

e. Upon receipt of a proposed extension request, Ohio EPA will determine whether good cause for the requested extension exists and approve the proposed extension if Ohio EPA determines that good cause exists for such an extension. For purposes of this Section, good cause for an extension may include a delay caused by, or likely caused by: i) an event of unavoidable delay as determined by Ohio EPA pursuant to the Unavoidable Delay Section of these Orders; ii) Ohio EPA's failure to take any action in accordance with any deadline expressly established in these Orders for Ohio EPA action; iii) the good faith invocation of dispute resolution pursuant to the Dispute Resolution Section of these Orders; iv) Ohio EPA's approval of a proposed extension if it may negatively impact the Milestone for which an extension is sought; v) additional Work agreed to by the Respondent and Ohio EPA pursuant to the Additional Work Section of these Orders if such additional Work negatively impacts the Milestone for which an extension is sought; vi) direct conflict between such Milestone and the requirements of any other existing contract, order, or permit to which

Respondent is a party; or vii) the refusal of an off-Site facility to accept wastes subject to these Orders as scheduled. Delays caused by Respondent's failure to adequately coordinate its activities with USEC or any off-Site facility shall not be considered good cause for an extension. Ohio EPA's determination of whether good cause for an extension exists is necessarily a fact specific determination. The foregoing examples of circumstances that may constitute good cause shall not be construed to create a presumption that such circumstances will, in any particular instance, be determined by Ohio EPA to constitute good cause.

f. If Respondent disagrees with an Ohio EPA notification of the need to extend a Milestone, Respondent shall, within 30 days, so notify the Ohio EPA, in writing of the reasons for such disagreement. If Respondent and Ohio EPA are unable to resolve their disagreement, either Respondent or Ohio EPA may invoke the dispute resolution procedures of Paragraphs 49 and 50 of the Dispute Resolution Section of these Orders.

22. Annual Report:

On or before the 31st day of December, of each year these Orders remain in effect, Respondent shall submit to Ohio EPA a written Annual Report for the previous federal fiscal year, and an updated Compliance Schedule which incorporates all approved amendments of the Compliance Schedule made during the previous fiscal year, for the Site. The Annual Report shall include the following information: an accounting of the status of the projects described in the Compliance Schedule and any Work Plans, decision documents, or other documents concurred with or approved by Ohio EPA, an updated statement regarding compliance with the Milestones contained in the Compliance Schedule, and any Work Plans, decision documents, or other documents concurred with or approved by Ohio EPA; a description of any projected difficulties in achieving compliance with future Milestones and target dates; an index or chart that clearly indicates all pages of the Compliance Schedule and any Work Plans, decision documents or other documents concurred with or approved by Ohio EPA that are affected by approved amendments of the Compliance Schedule.

VIII. FUNDING

23. It is the expectation of the Parties to these Orders that all obligations of Respondent arising under these Orders will be fully funded. Respondent shall take all necessary steps and use its best efforts to obtain sufficient funding to comply with the provisions of any Work Plans, decision documents, or other documents concurred with or approved by Ohio EPA, and these Orders. Upon Ohio EPA's request, Respondent will, as soon as practicable, provide additional information, participate in meetings or other discussions, and convey such other additional information, questions or concerns

as Ohio EPA deems necessary. Respondent's compliance with the Funding provisions of these Orders shall constitute compliance with the above standard. Respondent shall consult with the Ohio EPA in formulating its annual D&D budget request as set forth in this Section.

24. By March 31 of each year following issuance of these Orders, Respondent shall provide Ohio EPA with available information or a briefing on the proposed D&D budget request for the Site, including appropriate supporting documents. In the process of formulating its annual budget request, Respondent may be subject to target funding guidance directed by the Office of Management and Budget (OMB) or US DOE Headquarters (DOE-HQ). Respondent shall not be required to provide Ohio EPA budget information that Respondent is required by OMB guidance, to keep confidential. The information or briefing shall address the impacts of such OMB or DOE-HQ target funding guidance or other budget information that Respondent is not prohibited from releasing pursuant to applicable law, regulations, or DOE requirements. Nothing herein shall be construed to prevent Ohio EPA from making a request pursuant to the Freedom of Information Act of 2007, 5 U.S.C. 552. The Ohio EPA agrees, subject to the Ohio Public Records Law, ORC Section 149.43, not to release confidential budget information to any other person or entity prior to submission by the President of his budget request to Congress unless required to do so by court order. Ohio EPA agrees to notify Respondent as soon as reasonably possible of receipt of a public records request for pending budget information provided by Respondent pursuant to these Orders. Respondent may seek to intervene in any proceeding brought to compel or enjoin release of this information. If allowed to intervene, Respondent may assert its interest in, and the legal basis for, maintaining the confidentiality of this information.

25. Respondent and Ohio EPA shall discuss work scope, priorities, Milestones and target dates, and funding levels required to comply with any Work Plans, decision documents, or other documents concurred with or approved by Ohio EPA, and these Orders. These discussions shall be conducted before Respondent submits its annual budget request to DOE-Headquarters. Ohio EPA will consider Funding Availability in reviewing Respondent's proposals for establishing and adjusting Milestones and target dates pursuant to these Orders. Ohio EPA's comments to Respondent may include those additional or accelerated activities recommended by Ohio EPA that are believed by Ohio EPA to be outside of D&D target funding levels for the Site. Respondent may revise its budget request and supporting documents to resolve the comments of Ohio EPA. Respondent reserves the right to identify which activities it believes cannot be accomplished within the established D&D target funding levels for the Site. Nothing herein shall affect Respondent's ultimate responsibility and authority to formulate and submit to the President appropriate budget requests and to allocate appropriate funds to serve Respondent's missions.

IX. LAND USE AND CONVEYANCE OF TITLE

26. Environmental Covenant

If a Record of Decision or an Action Memorandum selects a remedy or removal action requiring the filing of an Environmental Covenant, Respondent shall, within thirty (30) days after completion of the remedy or removal action, excluding O&M, or after acquiring an interest in the Property, record with the Pike County Recorder's Office an Environmental Covenant for the Property that is part of the Site owned by the Respondent. The Environmental Covenant shall be consistent with the template attached hereto as Attachment F, shall be signed by Respondent, and shall be approved and signed by Ohio EPA. The Environmental Covenant must be recorded in the deed or official records of the County Recorder of Pike County, Ohio pursuant to R.C. 5301.82. The terms and conditions of the Environmental Covenant, as recorded, are incorporated into these Orders and shall be binding upon Respondent and enforceable under these Orders under state law and RC Chapter 5301 to the extent consistent with applicable federal law. In the event that an Environmental Covenant is held not to be enforceable by the State of Ohio against the owner because of the action of federal law or otherwise, the ROD or Action Memorandum which required the filing of the Environmental Covenant shall be revised to reflect the failure of that portion of the remedy.

27. Proof of Filing Environmental Covenant

Within thirty (30) days after filing with the Pike County Recorder the executed Environmental Covenant, Respondent shall certify to Ohio EPA that the Environmental Covenant has been filed for recording, and include with the certification a file and date-stamped copy of the recorded Environmental Covenant. Upon each conveyance by Respondent of an interest in any portion of the Property, including but not limited to easements, deeds, leases and mortgages, Respondent shall include in the instrument of conveyance a restatement consistent with paragraph 10 of the Environmental Covenant. The terms and conditions of the Environmental Covenant, as recorded, are incorporated into these Orders and shall be binding upon Respondent and enforceable under these Orders under state law and RC Chapter 5301 to the extent consistent with applicable federal law. For purposes of this Paragraph, a conveyance of an interest in any portion of the Site shall not include any leases or subleases under the 1993 Gaseous Diffusion Plant Lease Agreement Between the United States Department of Energy and the United States Enrichment Corporation, including the Supplemental Agreement Number 1 thereto regarding GCEP.

28. Land Use Self-Reporting Requirement

If a security, containment, treatment and/or monitoring system is included in a

selected remedy or removal action for the Site, Respondent shall maintain the integrity of any such security, containment, treatment, and/or monitoring systems. Respondent shall submit on an annual basis unless otherwise agreed to in writing by the Parties, written documentation verifying that any such security, containment, treatment, and/or monitoring systems are in place and operational. Respondent shall maintain the integrity of any removal or remedial action performed pursuant to these Orders, in accordance with submissions concurred with and/or approved by Ohio EPA, as applicable.

29. Notice of Transfer of Property

Prior to each conveyance by Respondent of an interest in any portion of the Site, including but not limited to easements, deeds, leases and mortgages, Respondent shall notify Transferee of the existence of any security, containment, treatment, and/or monitoring systems, and/or activity and use limitations, including environmental covenant(s), that are part of removal or remedial actions under these Orders and that apply to the portion of the Site to be conveyed, and shall provide a copy of these Orders to Transferee. Respondent shall notify Ohio EPA at least ten (10) days in advance of each conveyance by Respondent of an interest in any portion of the Site. Respondent's notice shall include the name and address of the Transferee and a description of the provisions made for the continued access to and maintenance of the security, containment, treatment, and/or monitoring systems at the Site that are part of a removal action or remedial action under these Orders.

For purposes of this Paragraph, a conveyance of an interest in any portion of the Site shall not include any leases or subleases under the 1993 Gaseous Diffusion Plant Lease Agreement Between the United States Department of Energy and the United States Enrichment Corporation, including the Supplemental Agreement Number 1 thereto regarding GCEP.

30. Confirmation of Conveyance

Within thirty (30) days after each conveyance of an interest by Respondent in any portion of the Site, the Respondent shall submit to Ohio EPA, via certified mail, the following information:

a. A copy of the deed or other documentation evidencing the conveyance;

b. The name, address, and telephone number of the new property owner and the name, address, and telephone number of the contact person for the Property owner;

c. A legal description of the Property, or the portion of the Property, being

transferred;

d. If prepared as part of the transaction, a survey map of the Property, or the portion of the Property, being transferred; and

e. The closing date of the transfer of ownership of the Property, or portion of the Property.

For purposes of this Paragraph, a conveyance of an interest in any portion of the Site shall not include any leases or subleases under the 1993 Gaseous Diffusion Plant Lease Agreement between the United States Department of Energy and the United States Enrichment Corporation, including the Supplemental Agreement Number 1 thereto regarding GCEP.

X. ADDITIONAL WORK

31. Ohio EPA or Respondent may determine that in addition to the tasks defined in any of the Removal Action Work Plans concurred with by Ohio EPA, RI/FS Work Plans concurred with by Ohio EPA, and/or in any of the RD/RA Work Plan(s) concurred with by Ohio EPA, additional Work may be necessary to accomplish the Objectives of the Parties as provided in the General Provisions Section of these Orders. Additional Work may also include, pursuant to ORC §3734.20 or other applicable law, the implementation of interim actions to address substantial threats to human health or safety or the environment should such threats be identified during the conduct of any of the Removal Actions, RI/FSs and/or RD/RAs.

32. Unless otherwise agreed in writing by Ohio EPA, within thirty (30) days of receipt of written notice from Ohio EPA that additional Work is necessary and the reason(s) for such work, Respondent shall submit a proposed addendum to the applicable Removal Action Work Plan(s) ("Removal Action Work Plan Addendum"), RI/FS Work Plan(s) ("RI/FS Work Plan Addendum") and/or the applicable RD/RA Work Plan(s) ("RD/RA Work Plan Addendum") which contains (a) a work plan for the implementation of additional Work, (b) any revisions to the Supporting Documents and other Removal Action, RI/FS and/or RD/RA deliverable, as appropriate, (c) a schedule, including clearly identified Milestone dates, for performance of the additional Work, and (d) revisions to other schedules impacted by the additional Work, if any. The proposed addendum will be reviewed in accordance with the Review of Submissions Section of these Orders. If Respondent disputes: i) Ohio EPA's determination that additional Work is necessary; or ii) Ohio EPA's selection of additional Work as unlawful or unreasonable, Respondent shall initiate the procedures for dispute resolution set forth in the Dispute Resolution Section of these Orders or the conferring procedures set forth in Paragraph 45.d. whichever is applicable, within thirty (30) days after receipt of Ohio

EPA's notification of the need for additional Work. The Removal Action Work Plan Addendum(s), RI/FS Work Plan Addendum(s) and/or the RD/RA Addendum(s) shall conform to the standards and requirements set forth in the documents attached to these Orders as Attachments A, B, C, D, and E. Upon Ohio EPA's concurrence with a Removal Action Work Plan Addendum, RI/FS Work Plan Addendum, and/or a RD/RA Work Plan Addendum pursuant to the Review of Submissions Section of these Orders, Respondent shall implement the applicable Removal Action Work Plan Addendum concurred with by Ohio EPA, RI/FS Work Plan Addendum concurred with by Ohio EPA and/or the applicable RD/RA Work Plan Addendum concurred with by Ohio EPA. Respondent shall submit all plans, reports, or other deliverables required under the Removal Action Work Plan Addendum, RI/FS Work Plan Addendum or RD/RA Work Plan Addendum concurred with by Ohio EPA, in accordance with the Ohio EPA approved Milestones set forth therein and the non-schedule related requirements of the Removal Action Work Plan Addendum(s), RI/FS Work Plan Addendum(s), or RD/RA Work Plan Addendum(s) concurred with by Ohio EPA, for review and concurrence or approval, as applicable, pursuant to the Review of Submissions Section of these Orders.

33. If Respondent determines that additional Work is necessary, Respondent shall submit a proposal to Ohio EPA to explain what the additional Work is, why the additional Work is necessary, and what impact, if any, the additional Work will have on the RI/FS Work Plan(s) and schedule(s) and/or the Removal Action Work Plan(s) and schedule(s), or RD/RA Work Plan(s) and schedule(s). The proposal shall be subject to the Review of Submissions Section of these Orders. If Ohio EPA concurs with the proposal to perform additional Work, Respondent shall within thirty (30) days, unless otherwise agreed to in writing by Ohio EPA, submit the new or revised document incorporating the additional Work, which could include, as applicable, a Removal Action Work Plan Addendum(s), RI/FS Work Plan Addendum(s) and/or RD/RA Work Plan Addendum(s), as described above, for the performance of additional Work. Any Removal Action Work Plan Addendum, RI/FS Work Plan Addendum and/or RD/RA Work Plan Addendum shall conform to the standards and requirements set forth in the documents attached to these Orders as Attachments A, B, C, D, and E. Upon Ohio EPA concurrence with a Removal Action Work Plan Addendum, RI/FS Work Plan Addendum and/or RD/RA Work Plan Addendum by Ohio EPA pursuant to the Review of Submissions Section of these Orders (any WAC, Milestones, Work Plan schedules, and Closure Plan(s) therein are subject to Ohio EPA approval, as opposed to concurrence, in accordance with the Review of Submissions Section of these Orders), Respondent shall implement the Removal Action Work Plan Addendum, RI/FS Work Plan Addendum and/or the RD/RA Work Plan Addendum in accordance with the Ohio EPA approved Milestones set forth therein and the non-schedule related requirements of the Removal Action Work Plan Addendum(s), RI/FS Work Plan Addendum(s), or RD/RA Work Plan Addendum(s) concurred with by Ohio EPA. Additional Work does not include any activity performed in response to an emergency at the Site for which

Respondent submits to Ohio EPA written notice of the performed activity. In the event that additional Work is necessary pursuant to these Orders and the performance of additional Work negatively impacts a Milestone established pursuant to these Orders, the impacted Milestone shall be extended by the period of time indicated in the additional Work proposal, as concurred with by Ohio EPA.

XI. SAMPLING AND DATA AVAILABILITY

34. Unless otherwise agreed to by the Site Coordinators, Respondent shall notify Ohio EPA not less than fifteen (15) days in advance of all sample collection activity undertaken pursuant to these Orders. Upon request, Respondent shall allow split and/or duplicate samples to be taken by Ohio EPA or its designated contractor. Ohio EPA shall also have the right to take any additional samples it deems necessary. Upon request, Ohio EPA shall allow Respondent to take split and/or duplicate samples of any samples Ohio EPA takes as part of its oversight of Respondent's implementation of the Work. Upon request and subject to Ohio's public records laws and requirements, Ohio EPA shall submit to Respondent copies of records or other documents, including sampling and monitoring data, in accordance with Ohio's public records laws and requirements.

35. Unless otherwise agreed by Ohio EPA, within fourteen (14) days of Respondent's receipt of a request by Ohio EPA, Respondent shall submit to Ohio EPA copies of, or allow Ohio EPA to inspect and review, the results of all sampling and/or tests or other data, including raw data and original laboratory reports, generated by or on behalf of Respondent, and in the possession of Respondent or Respondent's contractors or subcontractors with respect to the Site and/or the implementation of these Orders. If Respondent provides Ohio EPA copies, Respondent may either submit the aforementioned copies in an electronic format approved by Ohio EPA, or submit hard copies to be provided within fourteen (14) days of a request by Ohio EPA. Respondent may submit to Ohio EPA any interpretive reports and written explanations concerning the raw data and original laboratory reports. Such interpretive reports and written explanations shall not be submitted in lieu of original laboratory reports and raw data. Should Respondent subsequently discover an error in any report or raw data, Respondent shall promptly notify Ohio EPA of such discovery and provide the correct information. All requirements of the Atomic Energy Act (AEA), 42 USC Section 2011 et seq., and all Executive Orders respecting the handling of unclassified controlled nuclear information, restricted data, national security information, including the "need to know" requirement, and Official Use Only (OUO) information, as these terms are defined pursuant to the AEA or applicable Executive Order, shall be applicable to any grant of access to information, including sample collection, under provisions of these Orders. Nothing in this Section shall be applied in a manner to withhold sampling and/or tests or other data, including raw data and original laboratory reports, from Ohio EPA personnel

holding the appropriate security clearance and satisfying other legally applicable requirements for gaining access to such information.

XII. ACCESS

36. Ohio EPA and its contractors shall have access at all reasonable times to the Site and any other property to which access is required for the implementation of these Orders, to the extent access to the property is controlled by Respondent. Ohio EPA agrees that it will comply with all applicable statutes, rules, regulations and Facility requirements related to health, safety, and Site security. Access under these Orders shall be for the purposes of conducting any activity related to these Orders including but not limited to the following:

a. Monitoring the Work;

b. Conducting sampling, including at background monitoring wells;

c. Inspecting and copying records, operating logs, contracts, and other documents related to the implementation of these Orders;

d. Conducting investigations and tests related to the implementation of these Orders;

e. Monitoring compliance with activity and use limitations; and

f. Verifying any data and/or other information submitted to Ohio EPA.

37. To the extent that the Site or any other property to which access is required for the implementation of these Orders is owned or controlled by persons other than Respondent, Respondent shall use its best efforts to secure from such persons access for Respondent and Ohio EPA and its contractors as necessary to effectuate these Orders. Copies of all access agreements obtained by Respondent shall be provided to Ohio EPA upon execution of the access agreement. If any access required to implement these Orders is not obtained prior to Respondent's submission of the RI/FS Work Plan(s) or within thirty (30) days of the date Ohio EPA notifies Respondent in writing that additional access beyond that previously secured is necessary, Respondent shall promptly notify Ohio EPA in writing of the steps Respondent has taken to attempt to obtain access. Ohio EPA may, as it deems appropriate, assist Respondent in obtaining access.

38. Notwithstanding any provision of these Orders, the State of Ohio retains all of its access rights and authorities, including enforcement authorities related thereto, under

any applicable statute or regulation including but not limited to ORC §§ 3734.20 and 6111.05, and Respondent reserves all of its rights, authorities, and defenses with respect thereto. Nothing herein shall be construed to eliminate or restrict any State right to seek access to the Site which it may otherwise have under Federal or State law.

XIII. DESIGNATED SITE COORDINATORS

39. Within seven (7) days of the effective date of these Orders, Respondent and Ohio EPA shall notify the other Party, in writing, of the name, address, telephone number, and e-mail address of its designated Site Coordinator and Alternate Site Coordinator.

40. As used in these Orders, the term "Site Coordinator" refers interchangeably to the Site Coordinator and the Alternate Site Coordinator designated for a named party. If any designated Site Coordinator is changed, the identity of the successor will be given to the other Party at least seven (7) days before the changes occur, unless impracticable, but in no event later than the actual day the change is made.

41. To the maximum extent practicable, except as specifically provided in these Orders, communications between Respondent and Ohio EPA concerning the implementation of these Orders shall be made between the Site Coordinators. Respondent's Site Coordinator shall be available for communication with Ohio EPA regarding the implementation of these Orders for the duration of these Orders. Each Site Coordinator shall be responsible for ensuring that all communications from the other Party are appropriately disseminated and processed. Respondent's Site Coordinator or Alternate Site Coordinator shall be present on the Site or on call during all hours of Work at the Site.

42. Without limitation of any authority conferred on Ohio EPA by statute or regulation, the Ohio EPA Site Coordinator's authority to act on behalf of Ohio EPA overseeing implementation of these Orders includes but is not limited to the following:

a. Directing the type, quantity and location of samples to be collected by Respondent pursuant to a Work Plan concurred with by Ohio EPA;

b. Collecting samples;

c. Observing, taking photographs, or otherwise recording information related to the implementation of these Orders, including the use of any mechanical or photographic device;

d. Directing that the Work stop whenever Ohio EPA's Site Coordinator determines

that the activities at the Site may create or exacerbate a threat to public health or safety, or threaten to cause or contribute to air or water pollution or soil contamination;

e. Conducting investigations and tests related to the implementation of these Orders;

f. Inspecting and copying records, operating logs, contracts and/or other documents related to the implementation of these Orders; and

g. Assessing Respondent's compliance with these Orders.

XIV. PROGRESS REPORTS AND NOTICE

43. Unless otherwise directed by Ohio EPA, Respondent shall submit a written progress report to the Ohio EPA within thirty (30) days after the end of each calendar quarter. At a minimum, the progress reports for RI/FS activities shall include that information designated in Section 10 of the RI/FS SOW, progress reports for RD/RA activities shall include the information designated in Section 3.7.1 of the RD/RA SOW, progress reports for EE/CA activities shall include the information designated in Section 4.0 of the EE/CA SOW and progress reports for Removal Action activities shall include the information designated in Section 10 of the Removal Action Work Plan Outline. Quarterly reports may not be used to propose modifications to plans that Ohio EPA has concurred with or approved, as applicable; Respondent shall submit such requests to Ohio EPA in a separate written correspondence.

44. Progress reports (one copy only) shall be sent either by e-mail (Maria.Galanti@epa.state.oh.us) or by U.S. Mail to the address listed below. All other documents (two copies) required to be submitted pursuant to these Orders to Ohio EPA shall be sent: i) by e-mail (Maria.Galanti@epa.state.oh.us) in a format approved by Ohio EPA or, upon request by Ohio EPA, by U.S. mail to the following agency address(s):

Maria Galanti, Site Coordinator, or her successor
Ohio EPA, Southeast District Office
2195 Front Street
Logan, Ohio 43138

All written correspondence to Respondent shall be directed to:

Melda J. Rafferty, Site Coordinator (or her successor)
U. S. Department of Energy

P. O. Box 700
Piketon, Ohio 45661

and

Joel E. Bradburne, Portsmouth Site Lead (or his successor)
U. S. Department of Energy
P. O. Box 700
Piketon, Ohio 45661

A Party may designate an alternative contact name or address upon written notification to the other Party and in accordance with the Designated Site Coordinators Section of these Orders, as applicable.

XV. REVIEW OF SUBMISSIONS

45. Respondent shall complete and transmit each initial draft submission required to be submitted pursuant to the Performance of the Work by Respondent, the Compliance Schedule and the Additional Work Sections of these Orders to Ohio EPA on or before any corresponding Milestone or on or before any other enforceable deadline established for the submittal of the submission under these Orders.

a. Ohio EPA will notify Respondent in writing thirty (30) days after receipt of an initial or revised submission of its approval, disapproval, concurrence, nonconcurrence, or of any Ohio EPA comments, as applicable. In the event that any submission requires a longer review period, Ohio EPA will notify Respondent in writing of that fact within thirty (30) days after receipt of the Submission. If Ohio EPA gives notice of such delay to Respondent, any delay by Respondent in the performance of the Work under these Orders which is due to Ohio EPA document review beyond thirty (30) days shall not be considered a violation of these Orders, and the time allowed for performance of that portion of the Work by Respondent shall be extended by the period of time resulting from the Ohio EPA delay. On or before the close of the review/comment period, Ohio EPA shall transmit its written comments to Respondent. Comments by Ohio EPA shall provide adequate specificity so that Respondent may respond to the comments and, if appropriate, make changes to the draft document.

b. Representatives of Respondent shall make themselves readily available to Ohio EPA during the review/comment period for purposes of informally responding to questions and comments on the draft documents.

c. Unless otherwise agreed in writing by Ohio EPA, within thirty (30) days of receipt of Ohio EPA's comments on an initial or revised submission, Respondent shall: (1) respond to all Ohio EPA written comments on the draft document submitted during the review/comment period by revising the document and/or explaining why the document was not revised in response to a comment; and (2) transmitting any such revised document and explanation to Ohio EPA. In the event that Respondent requires a longer timeframe to respond to Ohio EPA's comments, Respondent will notify Ohio EPA in writing of that fact within thirty (30) days after receipt of Ohio EPA's comments. If Respondent gives notice of such delay to Ohio EPA and Respondent's delay beyond thirty (30) days causes any delay by Ohio EPA in reviewing any other submissions, the time allowed for Ohio EPA's review of the other submissions shall be extended by the period of time resulting from Respondent's delay. Upon request by either Party, the Parties agree to meet, in person or by phone, to discuss any such comments.

d. Availability of Dispute Resolution for draft submissions.

i. WAC Issues and any OSDC Issues, as those terms are defined in the Dispute Resolution Section of these Orders, are not subject to the Dispute Resolution Section of these Orders. The Parties agree that if there is disagreement regarding any WAC Issues or OSDC Issues, they will confer in good faith to resolve the disagreement to the mutual satisfaction of the Parties and, if the disagreement has not been resolved at the staff or progressively higher management levels, raise said disagreements to the Director of Ohio EPA and, for Respondent, the Assistant Secretary for Environmental Management, or their respective designees, to continue the conferring process. A disagreement exists when one Party notifies the other Party in writing that there is a disagreement.

ii. If a Waste Disposition ROD has not been finalized that selects an OSDC as a remedy, as the term finalized is defined in Paragraphs 12.c. and 45.f. of these Orders, then during the time that a disagreement exists regarding a WAC submission, Respondent agrees not to issue a Waste Disposition ROD that utilizes an OSDC as part of the chosen remedial action and agrees not to issue any RODs or Action Memoranda that rely on an OSDC as part of the primary chosen remedial action or removal action. Provided, however, that Respondent may issue RODs or Action Memoranda pursuant to Paragraph 12.a. of these Orders, that include contingent remedial actions or removal actions that rely on an OSDC.

iii. During the time that a disagreement regarding an OSDC Issue remains unresolved under this subparagraph d., Respondent shall not move forward with physical activities directly impacted by the disagreement unless Ohio EPA agrees in writing that such activities may move forward. Ohio EPA will not unreasonably withhold its agreement. If an OSDC Issue remains unresolved under this subparagraph (d), and so long as Respondent is in compliance with Paragraph 45.d. of these Orders and any Ohio EPA approved WAC, Ohio EPA agrees to exhaust the process set forth in Paragraph 45 of these Orders only as to the OSDC Issue that remains unresolved prior to taking any action directly related to the OSDC Issue that remains unresolved pursuant to its rights and authorities under applicable law. Nothing herein shall be construed to require Ohio EPA to exhaust the process set forth in Paragraph 45 of these Orders prior to taking action to enforce other provisions that are not the subject of a disagreement pursuant to Paragraph 45 of these Orders.

iv. During the time that a disagreement regarding a WAC Issue remains unresolved under this subparagraph d., Respondent shall not move forward with waste placement activities within the OSDC that are directly impacted by the disagreement unless Ohio EPA agrees in writing that such activities may move forward. Ohio EPA will not unreasonably withhold its agreement.

v. Dispute resolution shall be available to the Parties for other submissions, which are not excluded from dispute resolution pursuant to Paragraph 45.d.i., above, and which have not been finalized pursuant to Paragraphs 45.f and 12.c of these Orders.

e. Ohio EPA will notify Respondent in writing within thirty (30) days of receipt of a revised draft of a submission, of its approval, concurrence, conditional approval, conditional concurrence, disapproval, nonconcurrence, or of any Ohio EPA comments to a revised draft, as applicable.

f. Finalization of Documents. The submission shall become the Final Submission upon Respondent's receipt of Ohio EPA written concurrence or approval, whichever is applicable. In the event a submission for which dispute resolution is available pursuant to the Dispute Resolution Section of these Orders receives a conditional concurrence or conditional approval from Ohio EPA, the submission shall become the Final Submission if Respondent does not invoke Dispute Resolution in accordance with the Dispute Resolution Section of these Orders. Any submission disputed pursuant to the Dispute Resolution Section of these Orders shall become a Final Submission upon the Parties reaching agreement on the Submission pursuant to the Dispute Resolution Section.

46. Excluded from Ohio EPA concurrence pursuant to this Section are the health and safety plan (HASP), progress reports, and the PER (which is subject to concurrence once incorporated into the RI/FS Work Plan(s).). Any submissions regarding WAC, Milestones, Work Plan schedules, and any Closure Plan(s) shall be subject to Ohio EPA approval, as opposed to concurrence, in accordance with the procedures set forth in this Section.

47. When Ohio EPA concurs with a submission, including any approved portions thereof, under this Section of these Orders, all Final Submissions shall be deemed to be incorporated in and made an enforceable part of these Orders. Provided, however, that schedules included or identified in such submissions that are not identified as Milestones, will not be enforceable.

XVI. DISPUTE RESOLUTION

48. Exclusions

a. This Section does not apply to any WAC, including any portion thereof, Ohio EPA comments on such submissions, modifications to any WAC, including modifications required pursuant to Paragraph 12.d. of these Orders, or any implementation issues which may arise related to any WAC. The items listed herein will be collectively referred to hereafter as "WAC Issues."

b. This Section does not apply to any OSDC construction issues; any OSDC implementation issues; any Closure Plans for any OSDC, including any portion thereof, Ohio EPA comments on such submissions; or any irnplementation issues which may arise related to any Closure Plan; or any additional Work involving any of the matters set forth in this subparagraph b. The items listed herein will be collectively referred to hereafter as "OSDC Issues" and are intended to refer only to such OSDC Issues that arise in the context of a Waste Disposition RI/FS, Waste Disposition ROD, Waste Disposition RD/RA, construction of an OSDC as described in a Waste Disposition ROD and subsequent Waste Disposition RD/RA for design and construction of an OSDC, and OSDC implementation issues.

c. This Section does not apply to the Reimbursement of Costs Section of these Orders.

49. Informal Dispute Resolution

In the event of a conditional concurrence, conditional approval, nonconcurrence or disapproval, by Ohio EPA of a submission (excluding WAC Issues, OSDC Issues) or portion thereof submitted by Respondent, or a disagreement regarding schedules,

Milestones, or the Work, including field activities, performed under these Orders, either Party's Site Coordinator shall notify the other Party's Site Coordinator in writing that it wishes to invoke an informal dispute pursuant to this Section within thirty (30) days from the date of Ohio EPA's conditional concurrence, conditional approval, nonconcurrence, or disapproval of a submission or a disagreement regarding schedules, Milestones, or the Work, including field activities, performed under these Orders. The Parties shall have ten (10) days from the date written notice of the informal dispute is received by a Party's Site Coordinator to negotiate in good faith to resolve the dispute. This informal dispute resolution period may be extended by agreement of the Site Coordinators for up to twenty (20) additional days.

50. Formal Dispute Resolution Process for Disputes Regarding Compliance with Established Milestones and any Request by Respondent for Extension of Established Milestones

a. The formal dispute process for disputes regarding compliance with established Milestones or requests by Respondent for extension of established Milestones is governed by Paragraph 50 of these Orders.

b. In the event that a dispute regarding compliance with an established Milestone or request by Respondent for extension of an established Milestone is not resolved during the informal dispute resolution period, either Party's Site Coordinator shall notify the other Party's Site Coordinator in writing by the end of the informal dispute resolution period that it wishes to invoke a formal dispute pursuant to this Section. This notice shall include a brief description of the item(s) in dispute. If a Party does not submit a written notification of dispute to the other Party by the end of the informal dispute resolution period that the Party wishes to invoke a formal dispute pursuant to this Paragraph of the Orders, the Party shall be deemed to have waived the ability to invoke formal dispute resolution.

c. Within twenty (20) days of receipt of the written notice invoking the formal dispute resolution procedure, the Site Coordinators shall exchange written positions, including technical rationale supporting their positions. The Site Coordinators shall have ten (10) days from the date they have exchanged and received written positions to negotiate in good faith to resolve the formal dispute. This formal dispute period may be extended by agreement of the Site Coordinators for up to twenty (20) additional days.

d. Disputes not resolved by the Site Coordinators shall be referred to the Dispute Resolution Committee within seven (7) days of completion of the process set forth in the preceding Paragraph 50.c. of these Orders, if possible, but in any event no longer than fourteen (14) days. The Dispute Resolution Committee shall have four members consisting of one individual designated by Ohio EPA, one designated by Respondent and the two Site Coordinators. The Ohio EPA designee shall be the Chief, Division of Emergency and Remedial Response, or his or her designee, who shall co-chair the Committee with the Respondent

designee. The Respondent designee shall be the Portsmouth/Paducah Project Office Manager or his or her designee.

e. Within fourteen (14) days of receipt of a disputed matter, the Dispute Resolution Committee shall meet and attempt resolution. Meetings may be conducted by telephone, unless one of the members requests a face-to-face meeting. Disputed matters not resolved by the Dispute Resolution Committee within fourteen (14) days of receipt shall be referred to the Deputy Director of Legal Affairs or his designee, Ohio EPA, for a final decision.

51. Formal Dispute Resolution Process for Disputes Regarding a Submission (Excluding WAC Issues, OSDC Issues, Established Milestones, and Any Request for Extension of an Established Milestone.), or Any Other Work Required Under These Orders

a. The formal dispute process for submissions or any other Work (excluding WAC Issues, OSDC Issues, compliance with established Milestones, and any request for extension of an established Milestone), including field activities, performed under these Orders is governed by Paragraph 51 of these Orders.

b. In the event that a dispute regarding the items listed in Paragraph 51.a. of these Orders, was not resolved during the informal dispute resolution period, either Party's Site Coordinator shall notify the other Party's Site Coordinator in writing by the end of the informal dispute resolution period that it wishes to invoke a formal dispute pursuant to this Section. This notice shall include a brief description of the item(s) in dispute. If a Party does not submit a written notification of dispute to the other Party by the end of the informal dispute resolution period that it wishes to invoke a formal dispute pursuant to this Section of the Orders, the Party shall be deemed to have waived the ability to invoke formal dispute resolution.

c. The written notification of dispute shall specify the nature of the dispute, the Work affected by the dispute, the disputing Party's position with respect to the dispute, and the information the disputing Party is relying upon to support its position.

d. Within 30 days of receiving written notification of a dispute, the Site Coordinators and designated representatives for the Respondent and Ohio EPA shall attempt to resolve the dispute. For Respondent, the designated representative(s) shall include the Portsmouth Site Lead/Manager. For Ohio EPA the designated representative(s) shall include the Manager of DERR, Southeast District Office. If the Site Coordinators and designated representatives of Respondent and Ohio EPA are unable to resolve the dispute within 30 days of receiving written notification of dispute, the dispute shall be elevated to Respondent's Deputy Manager of the PPPO and Ohio EPA's Chief of DERR, or their designees, who shall attempt to reach joint agreement with respect to the matter(s) in dispute within 30 days of the dispute being elevated to them.

e. Disputed matters not resolved by Respondent's Deputy Manager of the PPPO and Ohio EPA's Chief of DERR within thirty (30) days shall be referred within seven (7) days of the end of the thirty (30) days to Respondent's Manager of the Portsmouth/Paducah Project Office (accompanied by appropriate counsel) or his designee and to the Deputy Director of Legal Affairs or his designee, Ohio EPA, who shall attempt to reach agreement on the disputed matter within thirty (30) days of the matter being referred to them.

f. In the event Respondent's Manager of Portsmouth/Paducah Project Office and Ohio EPA's Deputy Director of Legal Affairs are unable to reach agreement on the disputed matter(s), Ohio EPA will notify Respondent's Manager of the Portsmouth/Paducah Project Office in writing of Ohio EPA's final position. Within thirty (30) days of Respondent's receipt of Ohio EPA's final position, Respondent shall notify Ohio EPA, in writing, of its acceptance or non-acceptance of Ohio EPA's final position. If Respondent accepts Ohio EPA's final decision or fails to notify Ohio EPA of non-acceptance in accordance with this Section, Ohio EPA's position shall be deemed accepted. If Respondent notifies the Ohio EPA, in accordance with this section, of non-acceptance of Ohio EPA's final position, Respondent shall set forth the specific reasons for non-acceptance in the notification. If Respondent notifies Ohio EPA of non-acceptance of Ohio EPA's final position, such position will not be binding on Respondent. Under the Reservation of Rights Section of these Orders, Respondent and Ohio EPA have reserved their rights as to any further action and, in the context of any such further action, either Party may raise any facts or information raised during a dispute raised pursuant to Paragraph 51 of these Orders.

g. If a dispute is invoked regarding a submission which is subject to Paragraph 51 of the Dispute Resolution Section of these Orders, and Ohio EPA has not concurred or conditionally concurred with, such submission following exhaustion of said Dispute Resolution, any further activities pursuant to the disputed submission and all subsequent work and documentation, and other subsequent activities pertaining to the project for which the submission was prepared (e.g., other submissions, field work, design work, which occur in the process after the unresolved dispute) and related to or otherwise following the submission shall not be considered to be "Work" conducted pursuant to these Orders and any future Milestones or other requirements in these Orders that would otherwise have applied to such activities shall not apply.

52. General

a. The Site Coordinators shall, whenever possible, operate by consensus. Should Ohio EPA or Respondent have a good faith dispute associated with a submission which is subject to the Dispute Resolution provisions of these Orders, schedules, Milestones, field activity, or any other Work required under

these Orders, the dispute resolution procedures of this Section shall apply except as specifically set forth elsewhere in these Orders.

b. During the pendency of any dispute, Ohio EPA and Respondent agree that they shall continue to implement those portions of these Orders which are not affected by the matter in dispute and which Ohio EPA determines can be reasonably implemented pending final resolution of the issue(s) in dispute. If Ohio EPA determines that all or part of those portions of Work which are affected by the dispute should stop during the pendency of the dispute, Respondent shall discontinue implementing those portions of the Work. Ohio EPA and Respondent agree that they shall make reasonable efforts to informally resolve all disputes.

c. In the event Respondent disputes, pursuant to this Section, Ohio EPA's determination in Paragraph 52.b., above, that Work must stop, Respondent agrees to abide by Ohio EPA's determination during the pendency of this separate dispute. If Respondent disagrees with Ohio EPA's determination that Work should continue and Respondent elects to suspend that Work, it is Respondent's obligation to seek any necessary extension to Milestone(s) for such Work pursuant to Paragraph 21 of these Orders.

d. The pendency of a dispute under this Section shall extend only the time period for completion of the item(s) in dispute and items affected by the matter in dispute, except that upon mutual agreement of the Site Coordinators, any time period may be extended as is deemed appropriate under the circumstances. Such agreement shall not be unreasonably withheld by Ohio EPA. Elements of the Work not affected by the dispute shall be completed in accordance with the applicable Milestones.

e. Within 30 days of a resolution or final position under Paragraphs 49 and 50 of these Orders, Respondent shall incorporate and implement such resolution or final position, including incorporating such resolution into the Work Plan or other submission at issue. Within 30 days of a resolution or final position agreed to by Ohio EPA and Respondent under Paragraph 51 of these Orders, Respondent shall incorporate and implement such resolution or final position, including incorporating such resolution into the Work Plan or other submission at issue. The Work Plan or other submission, with the resolution or final position incorporated, will be the Final Submission. The time periods designated in this Section may be extended by mutual written agreement of Respondent and Ohio EPA.

f. In the event it is determined that either of the Parties, acting in good faith, has mistakenly invoked Paragraph 50 when Paragraph 51 should have been invoked or has mistakenly invoked Paragraph 51 when Paragraph 50 should have been invoked for a pending dispute, the Parties agree that so long as the requirements under the Paragraph which were actually invoked have been met, the pending

dispute shall be transferred to the appropriate process for completion and deemed to be timely invoked thereunder.

XVII. UNAVOIDABLE DELAYS

53. Respondent shall cause all Work to be performed in accordance with applicable (1) Milestones and (2) requirements set forth in these Orders or any Work Plan concurred with by Ohio EPA unless any such performance is prevented or delayed by an event that constitutes an unavoidable delay. For purposes of these Orders, an "unavoidable delay" shall mean an event beyond the control of Respondent that prevents or delays performance of any such obligations required by these Orders and that could not be overcome by due diligence on the part of Respondent. Increased cost of compliance, among other circumstances, shall not be considered an event beyond the control of Respondent for the purposes of these Orders. It shall be presumed, for purposes of these Orders, that delays due to compliance with applicable statutes and regulations governing procurement, despite the exercise of reasonable diligence are unforeseeable and beyond Respondent's control.

54. Respondent shall notify Ohio EPA in writing within ten (10) days after learning of the occurrence of an event that Respondent contends is an unavoidable delay. Such written notification shall describe the anticipated length of the delay, the cause or causes of the delay, the measures taken and to be taken by Respondent to minimize the delay, and the timetable under which these measures will be implemented. Respondent shall have the burden of demonstrating that the event constitutes an unavoidable delay.

55. If Ohio EPA does not agree that the delay has been caused by an unavoidable delay, Ohio EPA will within thirty (30) days or as otherwise agreed by the Parties, notify Respondent in writing of that finding and of any noncompliance with these Orders associated with Respondent's claim of unavoidable delay. In the event that Ohio EPA's review cannot be completed within thirty (30) days or as otherwise agreed by the Parties, Ohio EPA will notify Respondent in writing of that fact within fifteen (15) days after receipt of the document. If Ohio EPA gives notice of such delay to Respondent, any delay by Respondent in performance of the Work under these Orders which is due to Ohio EPA taking longer than thirty (30) days shall not be considered a violation of these Orders, and the time allowed for performance by Respondent shall be extended by the period of time resulting from the Ohio EPA delay. If Ohio EPA agrees that the asserted unavoidable delay is attributable to an unavoidable delay, Ohio EPA will notify Respondent in writing of the length of the extension for the performance of the obligations affected by the unavoidable delay. Determinations under this Section shall be subject to the Dispute Resolution Section of these Orders or the conferring procedures set forth in Paragraph 45.d of these Orders, whichever is applicable.

XVIII. REIMBURSEMENT OF COSTS

56. Ohio EPA has incurred and continues to incur D&D Response Costs in connection with D&D at the Site. Within sixty (60) days of the effective date of these Orders, Respondent shall reimburse the Ohio EPA in the amount of $13,856.53 for pre-award D&D Response Costs incurred relating to the Site, which are consistent with the activities required by these Orders, incurred between April 9, 2008 and the effective date of these Orders. Ohio EPA's D&D Response Costs incurred after the effective date of these Orders shall be reimbursed pursuant to this Section. Respondent shall reimburse Ohio EPA for all D&D Response Costs in accordance with this Section.

57. Reimbursable D&D Response Costs shall consist only of expenditures actually made by Ohio EPA in providing technical assistance under these Orders relating to the Site:

a. Technical review and substantive comment on reports or studies which Respondent prepares in relation to the D&D at the Site and submits to Ohio EPA or any other technical review in support of this Order;

b. Identification and explanation of State requirements applicable to Federal Facilities in performing the Work, especially State applicable or relevant and appropriate requirements ("ARARs");

c. Field visits to ensure investigations and other activities required to be implemented pursuant to these Orders are implemented in accordance with appropriate Ohio EPA requirements, or in accordance with agreed upon conditions between Ohio EPA and Respondent that are established under these Orders. This shall include review of draft data in order to analyze and guide fieldwork;

d. Support and assistance to Respondent in the conduct of public participation activities in accordance with Federal and State requirements for public involvement;

e. Preparation for and participation in technical meetings;

f. Laboratory costs incurred as a result of split sampling performed in order to validate any investigations performed by Respondent pursuant to these Orders;

g. Other activities specified in these Orders.

58. Within sixty (60) days of the effective date of these Orders, and on an annual basis thereafter, Ohio EPA shall submit, in a timely fashion and in writing, to

Respondent, Ohio EPA's proposed Scope of Work and estimates of D&D Response Costs to be incurred relating to the Work, as defined herein, to be performed under these Orders by Ohio EPA for the upcoming year. Prior to the expiration of the grant and subsequently thereafter as necessary, Ohio EPA shall submit a renewal grant application and, subsequent to negotiation between Respondent and Ohio EPA, Respondent shall make the renewal grant award. These actions shall be performed utilizing the procedures of 10 C.F.R. Part 600 Subparts A, C, and F with the following exceptions:

a. Notwithstanding 10 C.F.R. Section 600.205, Respondent shall not impose any additional requirements on this Response Cost reimbursement except with the written consent of Ohio EPA.

b. Ohio EPA shall remit to Respondent interest earned on advances as necessary and where required by the Cash Management Improvement Act and its implementing regulations, 31 C.F.R. Part 205, which shall apply in lieu of 10 C.F.R. Section 600.252

c. Unless the grant establishes payment pursuant to 10 C.F.R. Section 600.221(d), Respondent's payments shall be made in advance in accordance with 10 C.F.R. Section 600.221(c).

d. Pursuant to 10 C.F.R. Section 600.221(g), Respondent may withhold a cash payment pending correction of any material noncompliance related to the cash payment. Respondent may use the noncompliance and enforcement remedies of 10 C.F.R. Part 600 Subparts A, C, and F to prevent the expenditure by Ohio EPA of money on expenses not authorized by Paragraphs 56 and 57 of this Section or to recover money spent by Ohio EPA on such unauthorized expenses. Respondent shall not suspend or terminate grant payments for expenses authorized by Paragraphs 56 and 57 of this Section. Respondent shall not use its noncompliance and enforcement remedies against Ohio EPA for any punitive purposes unless necessary to address fraud. Any withholding, suspension, or termination of payment of costs pursuant to 10 C.F.R. Part 600 Subparts A, C, or F shall be subject to the informal dispute resolution and appeals procedures as described in Paragraphs 59 and 60 of this Section.

59. In the event that Respondent contends that any costs incurred were unallowable, or were incurred in a manner inconsistent with Federal law or the grant award, Respondent may challenge those costs under the grant. Whenever practicable, Respondent and Ohio EPA shall attempt to resolve informally any dispute over the award or administration of financial assistance including any matter controlled by this Section. Respondent and Ohio EPA representatives may initiate the informal process

by requesting that the involved parties attempt to resolve any issue covered by this Section. Such informal resolution shall begin with the representative of Respondent's contracting officer who signed the grant to the State agency implementing the cost recovery provisions of these Orders and the contract representative of Ohio EPA attempting to resolve the issue. If they are not successful, they may elevate the issue to the cognizant Contracting Officer for purposes of dispute resolution pursuant to 10 C.F.R. 600.22(a), and the Fiscal Officer for the Division of Emergency and Remedial Response of Ohio EPA for resolution. If these parties are unable to agree on resolution, each of the involved parties will issue a written decision setting forth their position on the issue. The written position of Respondent shall be deemed to be the Contracting Officer's determination from which a formal appeal may be taken. This written position will be issued within twenty-one (21) days after the parties agree that they are unable to informally resolve the issue.

60. If unresolved after conclusion of informal dispute resolution pursuant to Paragraph 59 of this Section, Ohio EPA's demand and Respondent's challenge may be resolved through the appeals procedures set forth in 10 C.F.R. 600.22 and 10 C.F.R. 600.243(b) as modified below:

a. Unless Ohio EPA requests a hearing, Respondent shall request that the hearing forum not require Ohio EPA to make any appearances outside of Dayton, or Columbus, Ohio in exercising appeal procedures under 10 C.F.R. 600.22 and 600.243(b);

b. Ohio EPA may seek to recover the contested costs through any other mechanism available to the State if the Senior Procurement Executive's decision has not been issued within ninety (90) days after all submissions are filed or after the time for filing has expired, whichever occurs earlier.

61. Subject to Paragraphs 62 and 63 of this Section, Respondent shall not be responsible under the terms of these Orders for reimbursing Ohio EPA for any costs actually incurred in excess of the amount Respondent has obligated on the grant. Should Ohio EPA incur costs exceeding the amount obligated on the grant, Ohio EPA may submit such costs to Respondent for consideration of payment to the extent appropriated funds are available and such payment is allowed by applicable law and regulation, including the Antideficiency Act, 31 U.S.C. 2143.

62. Ohio EPA's performance of its obligations under these Orders shall be excused if its D&D Response Costs as defined herein are not paid as required by this Section.

63. Ohio EPA reserves any right it may have to recover costs for matters not reimbursable pursuant to these Orders and the grant award, costs not reimbursed by Respondent pursuant to this Section after exhaustion of the appeals procedures

described in Paragraphs 59 and 60 of this Section, costs in excess of the maximum Respondent obligation in the grant award, or costs not being paid because Respondent and Ohio EPA have been unable to successfully conclude negotiations on the terms or language of the grant award. Respondent reserves all rights and defenses in the event Ohio EPA seeks to recover such costs. Subject to the reservation herein, in the event there is a conflict between this section and the grant issued pursuant to these Orders, the grant shall control.

XIX. ACCESS TO INFORMATION

64. Upon request, Respondent shall provide to Ohio EPA within thirty (30) days, unless otherwise agreed to by the Parties, copies of all documents and information within Respondent's possession or control or that of their contractors (and to which Respondent is entitled pursuant to the terms of the contract between Respondent and any such contractor) or agents relating to events or conditions related to the Work at the Site including, but not limited to manifests, reports, correspondence, or other documents or information. Respondent may submit the aforementioned copies in an electronic format approved by Ohio EPA. This provision shall not be a limitation on any request for information to the Respondent by Ohio EPA made under state or federal law for information relating to events or conditions at the Site.

65. Respondent may assert a claim that documents or other information submitted to Ohio EPA pursuant to these Orders are confidential under the provisions of OAC 3745-50-30(A) or ORC § 6111.05(A). If no such claim of confidentiality accompanies the documents or other information when they are submitted to Ohio EPA, they may be made available to the public without notice to Respondent.

66. Respondent may assert that certain documents or other information are privileged under the attorney-client privilege or any other privilege recognized by state law. If Respondent make such an assertion, they shall provide Ohio EPA with the following: (1) the title of the document or information; (2) the date of the document or information; (3) the name and title of the author of the document or information; (4) the name and title of each addressee and recipient; (5) a general description of the contents of the document or information; and (6) the privilege being asserted by Respondent.

67. All requirements of the Atomic Energy Act (AEA), 42 USC Section 2011 et seq., and all Executive Orders respecting the handling of unclassified controlled nuclear information, restricted data, national security information, including the "need to know" requirement, and Official Use Only (OUO) information, as these terms are defined pursuant to the AEA or applicable Executive Order, shall be applicable to any grant of access to information, including sample collection, under provisions of these Orders. Nothing in these Orders shall be applied in a manner to withhold sampling and/or tests

or other data, including raw data and original laboratory reports, from Ohio EPA personnel holding the appropriate security clearance and satisfying other legally applicable requirements for gaining access to such information.

68. Respondent shall preserve for the duration of these Orders and for a minimum of ten (10) years after termination of these Orders, all documents and other information within its possession or control, or within the possession or control of its contractors (and to which Respondent is entitled pursuant to the terms of the contract between Respondent and any such contractor) or agents, which in any way relate to the Work notwithstanding any document retention policy to the contrary. Respondent may preserve such documents by microfiche, or other electronic or photographic device. At least sixty (60) days prior to the conclusion of the document retention period, Respondent shall notify Ohio EPA that the retention period is about to end. At the conclusion of the ten (10) year document retention period, Respondent may dispose of any such documents and information without further notice to Ohio EPA. If Ohio EPA requests such documents and information prior to their disposition at the end of the retention period, Respondent shall deliver such documents and other information to Ohio EPA, subject to the provisions of the AEA and applicable law.

XX. ADMINISTRATIVE RECORD

69. Upon the effective date of these Orders, Respondent shall create and maintain the Administrative Record under Section 113(k) of CERCLA for all Work performed pursuant to these Orders. The Administrative Record shall be preserved in accordance with the Access to Information Section of these Orders.

XXI. PERIODIC REVIEW

70. Respondent shall conduct reviews as to the effectiveness of the Remedial Action at least every five (5) years to the extent required by, and as described in section 121(c) of CERCLA and any applicable regulations. Respondent shall conduct its review in a manner that allows Ohio EPA to evaluate the effectiveness of the Remedial Action(s). Upon request by Ohio EPA, Respondent shall submit any sampling data or information developed or collected pursuant to this Section to Ohio EPA in accordance with the Access to Information Section of these Orders.

71. If Ohio EPA or Respondent determines that information received, in whole or in part, during a review conducted pursuant to the Periodic Review Section of these Orders indicates that the Remedial Action(s) is not protective of public health and safety and the environment, Ohio EPA or Respondent may propose additional Work in accordance with the Additional Work Section of these Orders.

XXII. MODIFICATIONS

72. These Orders may be modified by agreement of the Parties. Modifications shall be in writing, signed by the authorized representative of the Respondent, and by the Director, and shall be effective on the date entered in the Journal of the Director of Ohio EPA. Such modification may include moving one or more buildings, structures and/or areas from the list of USEC Leased/GCEP Buildings and DUF6 Conversion Facilities in Attachments I and J to Attachment G or H.

XXIII. OTHER CLAIMS

73. Nothing in these Orders shall constitute or be construed as a release from any claim, cause of action, or demand in law or equity against any person, firm, partnership, or corporation not a Party to these Orders, for any liability arising from, or related to, events or conditions at the Site.

XXIV. RESERVATION OF RIGHTS

74. Ohio EPA reserves the right to seek legal and/or equitable relief to enforce the terms and conditions of these Orders, including penalties against Respondent for noncompliance with these Orders. Additionally, Ohio EPA reserves the right in such an action for legal and/or equitable relief to seek recovery of its costs in preparing any additional administrative enforcement orders or litigation costs incurred by Ohio EPA as such costs are not being reimbursed by Respondent pursuant to these Orders. Except as expressly provided herein, Respondent reserves any rights it may have to raise any legal or equitable defense or fact, including but not limited to facts raised during dispute resolution pursuant to the Dispute Resolution Section of these Orders, in any action brought by Ohio EPA to enforce the terms and conditions of these Orders. Ohio EPA reserves any rights it may have to raise any legal or equitable argument or fact, including but not limited to facts raised during dispute resolution pursuant to the Dispute Resolution Section of these Orders, in any action it takes to enforce the terms and conditions of these Orders.

75. Ohio EPA reserves the right to terminate these Orders and/or perform all or any portion of the Work or any other measures in the event that the requirements of these Orders are not wholly complied with within the time frames required by these Orders. Respondent reserves all rights and defenses in response to such actions.

76. Ohio EPA reserves the right to take any action, including but not limited to any enforcement action, action to recover costs, or action to recover damages to natural

resources, pursuant to any available legal authority as a result of past, present, or future violations of state or federal laws or regulations or the common law, and/or as a result of events or conditions arising from, or related to, the Site. Upon termination pursuant to the Termination Section of these Orders, Respondent shall have resolved its liability to Ohio EPA only for the Work performed pursuant to these Orders. Respondent reserves all defenses it may have to any of the State actions described in this Paragraph.

77. Except as to those issues not subject to the Dispute Resolution Section as set forth in Paragraphs 45.d.i. and 48 of these Orders, in the event Ohio EPA does not concur with the removal action(s) or final remedy(ies), and only after exhausting the dispute resolution procedures set forth in the Dispute Resolution Section of these Orders if a dispute is raised in accordance with these Orders, Respondent reserves any rights it may have as Lead Agency to make the removal action or final remedy selection(s) and to document its removal action decision in the Action Memorandum(a) pursuant to 40 CFR 300.415 and to document its remedial decision(s) in the ROD(s) pursuant to 40 CFR §§ 300.430(f)(1)(ii), (f)(4)(i). In the event Ohio EPA does not concur with the removal action(s) or final remedy(ies), and only after exhausting the dispute resolution procedures set forth in the Dispute Resolution Section of these Orders if a dispute is raised in accordance with these Orders, Ohio EPA reserves its right to challenge the removal action(s) or final remedy(ies) pursuant to 42 USC 9621(f)(3)(B) and to take any other action, including but not limited to the actions described in Paragraphs 74 through 79 of these Orders. For the duration of these Orders, nothing herein shall be construed to prevent Ohio EPA from seeking legal or equitable relief to enforce the terms of the Ohio Consent Decree. Respondent reserves all rights and defenses in response to such actions/challenges.

78. Nothing in these Orders shall be construed as a waiver of Respondent's jurisdiction over source, by-product, or special nuclear materials under the Atomic Energy Act of 1954, as amended 42 U.S.C. § 2201, et seq. Nothing in the preceding sentence alters the Respondent's duty to comply with these Orders.

79. For the duration of these Orders, nothing herein shall affect Respondent's obligations pursuant to, or Ohio EPA's legal right to enforce, the following: the Ohio Consent Decree; the Three Party Order; Amended Administrative Order on Consent; the Integration Orders; the DUF6 Orders as amended; the Management Orders, the October 4, 1995 TSCA UE FFCA Orders; the Hazardous Waste Installation and Operation Permit No. 04-66-0680, as modified; and any other applicable order, permit, or authorization. Nothing herein shall affect Respondent's ability to raise all available rights and defenses in response to any such enforcement action by Ohio EPA. Nothing herein modifies any of the provisions set forth in the Ohio Consent Decree; the Three Party Order; Amended Administrative Order on Consent; the Integration Orders; the DUF6 Orders as amended; the Management Orders, the October 4, 1995 TSCA UE

FFCA Orders; the Hazardous Waste Installation and Operation Permit No. 04-66-0680, as modified; and any other applicable order, permit, or authorization.

XXV. AGREEMENT NOT TO REFER

80. During the implementation of these Orders, and provided Respondent is considered by Ohio EPA to be in compliance with these Orders, Ohio EPA agrees not to refer Respondent to the Ohio Attorney General's Office or take administrative enforcement action against Respondent for Work required by these Orders. Upon termination of these Orders pursuant to the Termination Section, and during the term of these Orders so long as Respondent performs the Work pursuant to these Orders, Ohio EPA agrees not to refer Respondent to the Ohio Attorney General's Office, or take administrative enforcement action against Respondent for Work required under these Orders. For submissions subject to Paragraph 51 of the Dispute Resolution Section of these Orders, if Ohio EPA does not concur or conditionally concur with a submission and either:

i) the timeframe for invoking dispute has passed; or
ii) dispute resolution was invoked pursuant to Paragraph 51 and, after exhausting the dispute resolution process, Ohio EPA does not concur or conditionally concur with the disputed submission

then any further activities pursuant to the disputed submission and all subsequent activities (e.g., other submissions, field work, design work, etc.) related to the submission shall not be considered to be "Work" conducted pursuant to these Orders as set forth in Paragraph 51.g. of these Orders and any future Milestones or other requirements in these Orders that would otherwise have applied to such activities shall not apply.

XXVI. TERMINATION

81. Respondent's obligations under these Orders shall terminate upon Ohio EPA's approval in writing of Respondent's written certification to Ohio EPA that all Work required to be performed under these Orders including payment of D&D Response Costs has been completed. The Respondent's certification shall contain the following attestation: "I certify that the information contained in or accompanying this certification is true, accurate, and complete." This certification shall be submitted by Respondent to Ohio EPA and shall be signed by a responsible official of Respondent. The termination of Respondent's obligations under these Orders shall not terminate the Respondent's obligations under the Reservation of Rights, Access to Information, Other Claims and Land Use and Conveyance of Title Sections of these Orders.

XXVII. WAIVER AND AGREEMENT

82. In order to resolve disputed claims, Respondent consents to the issuance of these Orders, and agrees to comply with these Orders.

83. Respondent hereby waives the right to appeal the issuance, terms and conditions, and service of these Orders and Respondent hereby waives any and all rights that it may have to seek administrative or judicial review of these Orders either in law or equity.

84. Notwithstanding the limitations herein on Respondent's right to appeal or seek administrative or judicial review, Ohio EPA and Respondent agree that if these Orders are appealed by any other party to the Environmental Review Appeals Commission, or any court, Respondent retains the right to intervene and participate in such appeal. In such event, Respondent shall continue to comply with these Orders notwithstanding such appeal and intervention unless these Orders are stayed, vacated or modified.

XXVIII. EFFECTIVE DATE

85. The effective date of these Orders shall be the date these Orders are entered in the Journal of the Director of Ohio EPA.

XXIX. SIGNATORY AUTHORITY

86. Each undersigned representative of a Party to these Orders certifies that he or she is fully authorized to enter into these Orders and to legally bind such Party to these Orders.

IT IS SO ORDERED AND AGREED:

OHIO ENVIRONMENTAL PROTECTION AGENCY

Chris Korleski, Director
Ohio Environmental Protection Agency

APR 13 2010
Date

IT IS SO AGREED:

UNITED STATES DEPARTMENT OF ENERGY

BY:

W. E. Murphie 3/25/2010

William E. Murphie, Manager — Date
United States Department of Energy
Portsmouth/Paducah Project Office

Attachment A

GENERIC STATEMENT OF WORK

FOR CONDUCTING

REMEDIAL INVESTIGATION(S) AND

FEASIBILITY STUDY(IES)

FOR THE U.S. DOE PORTSMOUTH GASEOUS DIFFUSION PLANT

SITE-WIDE WASTE DISPOSITION EVALUATION PROJECT

AND

PROCESS BUILDINGS AND COMPLEX FACILITIES DECONTAMINATION AND DECOMMISSIONING EVALUATION PROJECTS

Note: In the event of any conflict between this Attachment and the Director's Final Findings and Orders to which it is appended ("Orders"), the provisions shall be construed if possible so that effect is given to both, however, if the conflict is irreconcilable, the provisions of the Orders shall prevail.

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Appendix A – Preliminary Evaluation Report Outlines

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Appendix H – RI/FS Submittals List

Appendix I – Overview of SOW Elements and Project Applicability

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1.0 Purpose

This Generic Statement of Work (SOW) for Conducting Remedial Investigations and Feasibility Studies sets forth the generic process requirements for initiating, conducting and documenting Remedial Investigations and Feasibility Studies (RI/FS) for the Site-Wide Waste Disposition Evaluation project, and the Process Buildings and the Complex Facilities Decontamination and Decommissioning (D&D) Evaluation projects listed in Attachment H to these Orders, at the Department of Energy (DOE) Portsmouth Site.

The purpose of an RI is to determine the threat to human health, safety and the environment in relation to project activities at the Site. The RI process emphasizes appropriate data collection and Site characterization, and is generally performed concurrently and in an interactive fashion with the feasibility study process. The RI process includes sampling and monitoring, as necessary, and includes gathering of sufficient information to determine the necessity for remedial action and to support the evaluation of remedial alternatives for each Remedial Action project at the Site. The purpose of a FS is to develop and evaluate options for remedial action(s) to reduce or eliminate the threat to human health, safety and the environment. The Respondent shall gather enough information to develop and evaluate remedial alternatives to provide the Ohio Environmental Protection Agency (Ohio EPA) with the information needed to concur or approve, as applicable, with a remedy(ies). The RI and FS are conducted simultaneously and in an iterative manner to allow the information gathered during the RI to influence the development of remedial alternatives, which in turn affects data needs and the scope of the RI.

The RI/FS shall be performed in accordance with the requirements of the consensual Director's Final Findings and Orders for the Site, referred to herein as "Orders", and this SOW, and in a manner consistent with the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), Final Rule (40 CFR Part 300). Respondent shall refer to appropriate sections of U.S. EPA's Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA (EPA/540/G-89/004, October 1988) (U.S. EPA RI/FS Guidance) and other guidance that the Ohio EPA may use in conducting an RI/FS. A list of documents is provided as Attachment C to the Orders to provide direction and guidance for conducting investigations and developing and evaluating remedial action alternatives. The applicability of individual guidance will be determined by the scope of the response action and data needs as determined during the scoping phase. Sections of relevant guidance which further describe the RI/FS tasks are referenced throughout this SOW and appendices. Ohio EPA and/or Respondent may identify other relevant guidance to be used in connection with performance of the RI/FS as Work proceeds under the Orders. Respondent shall furnish all personnel, materials, and services needed or incidental to performing the RI/FS except as otherwise specified in the Orders.

At the completion of a RI/FS for each Remedial Action project, the Respondent shall be responsible for the selection of a remedy and shall memorialize the selected remedy in a Record of Decision (ROD) for each Remedial Action project. The remedy selected by the Respondent shall be protective of human health and the environment, comply with applicable or relevant and appropriate requirements (ARARs) of federal and state environmental laws and regulations or satisfy the requirements of 42 U.S.C. Section 9621 and 40 CFR Section 300.430 pertaining to waiver or non-attainment of ARARs, be cost-effective, utilize permanent solutions and treatment technologies or resource recovery technologies to the maximum extent practicable, and address the preference for treatment as a principal element. The final RI and FS Reports for each Remedial Action project, as concurred with or approved, as applicable, by

Ohio EPA, shall, with the administrative record, form the basis for selection of the remedy(ies) and provide the information needed to support development of the ROD(s).

Ohio EPA shall provide oversight of Respondent's activities throughout the RI/FS for each Remedial Action project, including field activities. Respondent shall support Ohio EPA's conduct of oversight activities.

2.0 RI/FS Scoping

Scoping is the planning process for the RI/FS. Consistent with the Orders and preliminary Site-specific Objectives (SSOs), and in consultation with Ohio EPA, Respondent shall determine the specific project scope and prepare and submit for review and comment a Pre-investigation Evaluation Report (PER) for each Remedial Action project.

2.1 Project Initiation Meeting (PIM) and Site Visit

Consistent with Section VI (Paragraph 11) of the Orders, Respondent shall contact Ohio EPA's Site Coordinator to set up a Project Initiation Meeting (PIM) for each Remedial Action project. The purpose of the PIM is to afford Respondent and Respondent's contractors an opportunity to review with Ohio EPA the technical requirements of the Orders and this SOW and seek clarification regarding the performance of the required Work and/or preparation of deliverables, and to establish a date for a Site visit for each Remedial Action project, if needed. Topics of discussion may include, but need not be limited to, the Site management strategy, preliminary RAOs, data quality objectives (DQOs), development of initial Waste Acceptance Criteria (WAC) if an on-Site disposal cell (OSDC) is anticipated to be evaluated as one of the remedial alternatives for the Site-Wide Waste Disposition Evaluation project, initiation and/or integration of emergency or interim actions, involvement and coordination with other Ohio EPA programs and other agencies, community relations activities, preparation of a formal community relations plan, performance of the FS, and communication between Respondent and Ohio EPA. Each PIM will be attended by Ohio EPA's Site Coordinator and agency staff providing support to the Site Coordinator in overseeing Respondent's conduct of the RI/FS. Ohio EPA also encourages PIM attendance by those persons providing support to Respondent.

2.2 Pre-investigation Evaluation Report (PER)

Respondent shall document in the Pre-investigation Evaluation Report (PER) for each Remedial Action project the performance and results of the scoping tasks identified in this section, thus establishing the framework for subsequent development of the RI/FS Work Plan. Respondent shall address in the PER each RI/FS SOW task by one of the following three methods:

1. Indicating that the task has previously been performed and providing the results of the task and supporting documentation;
2. Indicating that the task is not relevant to the Remedial Action project at the Site and providing the technical justification for omitting the task; or
3. Indicating that the task is relevant to the Remedial Action project at the Site and will be addressed in the RI/FS Work Plan.

Respondent shall include, as an attachment to each PER, a Level 1 annotated bibliography of existing reports relevant to the RI/FS. Upon request, Respondent shall provide copies of the

reports to Ohio EPA. In addition, Respondent shall provide details of any relevant non-D&D activities conducted prior to the PER.

Scoping is continued, repeated as necessary, and refined throughout the RI/FS process as data become available. The following section summarizes the PER requirements; Appendix A to this Generic Statement of Work for Conducting Remedial Investigations and Feasibility Studies provides sample PER outlines for the Site-Wide Waste Disposition Evaluation project and the Process Buildings and Complex Facilities Decontamination and Decommissioning Evaluation projects.

2.3 PER Elements

I. Description of Current Conditions (SOW Appendix A, Sections 3.0 and 3.1 of outlines A-1 and A-2)

Consistent with the applicable outline in Appendix A of this SOW, Respondent shall collect and analyze existing information available for the Site to develop a preliminary conceptual site model (CSM) to assist in assessing the threat to human health, safety and the environment, preliminarily evaluating ARARs, developing general response actions and preliminary remedial alternatives, and gathering and analyzing existing Site background information. Sources of information include a review of Ohio EPA and other public files (including analytical results obtained from prior Site investigations and assessments conducted by Ohio EPA and others) and interviews with employees, officers and agents (past and present) associated with the Site. Additional sources of existing information are described in Table 2.1 of the U.S. EPA RI/FS Guidance.

A. Existing Analytical Data (U.S. EPA RI/FS Guidance Section 2.2.2);(SOW Appendix A, Section 3.2 of outlines A-1 and A-2)

Consistent with the applicable outline in Appendix A of this SOW, Respondent shall compile existing relevant analytical data relating to the condition and contamination at each Remedial Action project area at the Site, and summarize the results in terms of physical and chemical characteristics, and contaminant concentrations. Data relating to soil, ground water, surface water, sediment, air, or biotic contamination shall be included as appropriate and available. Use of any data that was not collected and analyzed pursuant to a Quality Assurance Project Plan (QAPP) concurred with or approved, as applicable, by Ohio EPA must be supported by inclusion of all relevant quality assurance and quality control information. Consistent with the Data Quality Objectives (DQOs) guidance listed in the Guidance List (Attachment C to the Orders), Respondent shall identify the DQOs for all existing data on which Respondent intends to rely. A DQO discussion is anticipated in which DOE will present and discuss with OEPA the project objectives and supporting data needs. The goal of the discussion will be to reach DOE and OEPA agreement on the amount and type of data needed to support remedial alternative development, analysis, and selection.

B. Conduct Site Visit for each Remedial Action Project

1. Respondent shall, if necessary, coordinate a Site visit with Ohio EPA to assist in developing a conceptual understanding of potential

waste/contaminant streams, and threat to human health and the environment.

2. Respondent shall also observe the Site's physiography, hydrology, geology, demographics, natural resources, and ecological and cultural features if an OSDC is evaluated as a potential remedial alternative for the Site-Wide Waste Disposition Evaluation Project.

C. Describe Site Conditions (SOW Appendix A, Section 3.0 of outlines A-1 and A-2)

Consistent with the applicable outline in Appendix A of this SOW, Respondent shall prepare and include in each PER a summary of the regional location, pertinent area boundary features, and physical geography at and near the Site. The summary shall be based on existing information and shall include characteristics such as surface hydrology, hydrogeology, geology (including cross-sections if available), and the total area(s) addressed in each PER. The summary shall also include the general nature of the problem, particularly with respect to the relevant historic use of the Site relative to waste/contaminant identification. Respondent shall also include relevant background information on land use, natural resources, and climatology. Respondent may reference applicable existing reports. Respondent shall, at a minimum, provide the following, if relevant:

1. Map(s) depicting the following information
   a) General geographic location;
   b) Property lines, with the owners of all adjacent property clearly indicated;
   c) Topography and surface drainage with appropriate contour interval and scale depicting all waterways, wetlands, flood plains, water features, drainage patterns, and surface water containment areas;
   d) All tanks, buildings, utilities, paved areas, easements, rights-of-way, and other features;
   e) All known active or past waste/contaminant treatment, storage or disposal areas and the dates of their operation;
   f) All known past and present product and wastes / contaminants containing underground tanks and/or piping;
   g) All known past or present locations of spills or other releases of contaminants or any other potential contaminant source areas;
   h) Surrounding land uses (residential, commercial, agricultural, recreational) including zoning designations;
   i) Wetlands and surface water bodies;
   j) Previous sampling locations and dates of sampling for all media;
   k) The location of all wells, including monitoring wells.

NOTE: Maps shall be of sufficient detail and accuracy to locate and depict current and future Work performed at the Site. Maps shall be submitted as hard copy and in an agreed upon digital format, such as a shape file (*.shp) or drawing exchange format file

(*.dxf) in a known coordinate system (e.g., Ohio State Plane South Zone, Datum = NAD83, units = feet)[1]. Significant features will be created using standard survey techniques or with a global positioning system unit capable of sub-meter accuracy horizontal data capture.

2. A history and description of ownership and operation (past and current), including: relevant generation of wastes/contaminants and any relevant treatment, storage and/or disposal activities at the Site;
3. Approximate dates or periods of relevant past product and waste/contaminant spills or discharges, identification of the materials spilled or discharged, the amount spilled or discharged, the location where spilled or discharged, and a description of any response actions conducted at the time (local, state, or federal response units or private parties), including any inspection reports or technical reports generated as a result of the response;
4. A summary of relevant known or suspected source areas and other relevant areas of known or suspected contamination, and a list of related documents and studies.

D. Potential Threat to Human Health, Safety and the Environment (U.S. EPA RI/FS Guidance, Section 2.2.2); (SOW Appendix A, Section 3.3 of outlines A-1 and A-2)

E. Consistent with the applicable outline in Appendix A of this SOW, Respondent shall prepare a summary of the potential threat the Remedial Action project area poses to human health, safety and the environment based on the review of existing information as it pertains to the Site-Wide Waste Disposition Evaluation Project and the Process Buildings and Complex Facilities Decontamination and Decommissioning (D&D) Evaluation Projects. The summary shall include, but not be limited to, descriptions of the relevant types, physical states, and amounts of contaminants known and suspected to be associated with the Remedial Action project area; and the type and volume of wastes/contaminants to be generated or associated with the project. Emphasis shall be placed on performing a streamlined evaluation of the threat or potential threat that may exist to human health, safety and the environment. The summary shall include tables displaying the minimum and maximum levels of detected contaminants for the Remedial Action project area, where such data is available. The summary also shall identify areas, if any, where additional information is necessary to support a sufficient analysis of potential threats to human health, safety and the environment.

F. Develop a Conceptual Site Model (U.S. EPA RI/FS Guidance, Figure 2-2); (SOW Appendix A, Section 3.4 of outlines A-1 and A-2)

Based on the results of the above tasks, Respondent shall develop a preliminary CSM to evaluate potential threats to human health, safety and the environment. The CSM shall include, as consistent with the applicable outline in Appendix A of this SOW, known and suspected sources of contamination, types of

[1] The term "shape file" (*.shp) refers to the electronic file format used by the ArcGIS software systems produced by the ESRI Company, a major supplier of geographic information system products. The term "dxf" means "drawing exchange format" (*.dxf), a standard electronic file format used by AutoCad® and other graphics software systems.

contaminants, known and potential routes of contaminant migration, and known or potential human and environmental receptors.

II. Review and Integration of Emergency or Interim Actions (SOW Appendix A, Section 3.1 of outlines A-1 and A-2)

Consistent with the applicable outline in Appendix A of this SOW, Respondent shall evaluate any previous relevant response actions that may have been undertaken at the Site for consistency with the preliminary CSM and to determine if the initial response objectives are being met. Respondent shall include this evaluation and proposals to address identified issues, if any, in each PER.

III. Pre-investigation Evaluation of Remedial Action Technologies, Process Options, and Broadly Defined Remedial Alternatives (SOW Appendix A, Section 4.0 of outlines A-1 and A-2)

Consistent with the applicable outline in Appendix A of this SOW, following the review of existing information and development of the preliminary CSM, Respondent shall refine the preliminary SSOs to specify the contaminants of potential concern, the actual or potential exposure pathways, and, where appropriate, the preliminary remediation goals (PRGs) for each exposure pathway (see the Guidance List attached to the Orders, DERR-00-RR-038, Use of Risk-based numbers in the Remedial Response Process, Overview, and Section 4.2.1 of the U.S. EPA RI/FS Guidance) for each Remedial Action project. The refined RAOs (refined RAOs will consist of the SSOs as refined and discussed above) shall be consistent with the preliminary CSM and Appendix A to this SOW, Section 4.2 of outlines A-1 and A-2.

Based on the preliminary CSM and refined RAOs and any then approved WAC, Respondent shall develop, evaluate and screen a preliminary range of potential remedial technologies and associated process options, and develop broadly defined remedial alternatives (Sections 4.2.2 through 4.2.6 of the U.S. EPA RI/FS Guidance) for each Remedial Action project. The screening of technologies and process options shall be based on their effectiveness, implementability, and cost as these terms are defined and used in Sections 4.2.5.1 - 4.2.5.3 of the U.S. EPA RI/FS Guidance.

Respondent shall consider the following, as appropriate, during development of a preliminary range of potential remedial alternatives for each Remedial Action project:

A. Technologies and process options that may be appropriate for treating, containing, or disposing of wastes/contaminants shall be identified, along with sources of literature on the technologies' effectiveness, application, and cost. Innovative technologies and resource recovery options will be included if they appear feasible.

B. A preliminary list of broadly defined remedial alternatives that reflect the goal of preserving an appropriate range of alternatives and a no action alternative.

C. For alternatives involving treatment, the need for treatability studies shall be evaluated as early in the RI/FS process as possible. The need for any such studies shall be discussed in the PER.

D. The NCP preference for treatment alternatives that reduce toxicity, mobility, or volume.

Respondent shall also preliminarily identify potential ARARs and to be considered (TBC) criteria which may influence potential remedial alternatives and/or Site characterization activities (Section 2.2.5 of the U.S. EPA RI/FS Guidance); (SOW Appendix A, Section 4.3 of outlines A-1 and A-2).

Respondent will revise and refine the preliminary CSM and supporting information (RAOs, contaminants of concern, routes of exposure, receptors, preliminary remedial alternatives, ARARs, and TBC criteria) throughout the RI/FS process as data become available and uncertainties are reduced.

IV. Identification of Data Needs and Data Usage (SOW Appendix A, Section 5.0 of outlines A-1 and A-2)

Based on the results of the above scoping tasks, Respondent shall identify the types of data that will need to be collected during each RI. At a minimum, data shall be collected sufficient to support the tasks associated with the Site-Wide Waste Disposition Evaluation project and the Process Buildings and Complex Facilities Decontamination and Decommissioning (D&D) Evaluation projects. If Respondent determines no additional data is needed, Respondent shall provide an explanation as to why no further data is necessary.

A. Define relevant Source Areas pertaining to the Site-Wide Waste Disposition Evaluation project and the Process Buildings and Complex Facilities Decontamination and Decommissioning (D&D) Evaluation projects;
B. Define threat to Human Health and the Environment;
C. Define, as relevant, the Extent of Contamination pertaining to the Site-Wide Waste Disposition Evaluation project and the Process Buildings and Complex Facilities Decontamination and Decommissioning (D&D) Evaluation projects;
D. Define the Environmental Setting (applies only to the Site-Wide Waste Disposition Evaluation project; see section 4.0 of this SOW);
E. Define Hot Spots (see: U.S. EPA 1991 A Guide to Principal Threat and Low Level Threat Wastes) within source areas;
F. Define Potential Receptors;
G. Support the Development and Evaluation of Remedial Alternatives (support development of the Alternatives Array Document (AAD) and the FS).

Identification of data needs shall be coordinated with the expected uses for the data and the DQOs. Respondent shall identify the intended uses for the data and its adequacy in meeting the DQOs.

3.0 RI/FS Work Plan and Supporting Documents

Consistent with the applicable outline in Appendix B of this SOW and following receipt of Ohio EPA's comments on each PER, Respondent shall prepare and submit for review and concurrence or approval, as applicable, an RI/FS Work Plan and supporting documents, including a Sampling Plan (SP) and a QAPP for each Remedial Action project. A Health and

Safety Plan (HASP) shall also be submitted, but for review and comment only. Respondent shall incorporate the PER along with any additional information developed or included as a result of Ohio EPA's comments, into the RI/FS Work Plan to document the initial RI/FS scoping activities.

3.1 RI/FS Work Plan (U.S. EPA RI/FS Guidance Section 2.3.1) (SOW Appendix B, outlines B-1 and B-2)

Consistent with the applicable outline in Appendix B of this SOW, each RI/FS Work Plan shall detail the methods and procedures for performing the remaining RI/FS tasks (Sections 3 through 10 of this SOW) and shall be developed in conjunction with supporting documentation, including the SP, QAPP, and HASP, although each may be delivered under separate cover. Each RI/FS Work Plan and supporting documents shall provide a detailed description of the relevant tasks to be performed (SOW Appendix B, Section 3.1 of outlines B-1 and B-2), the technical rationale for performing the Work in the manner proposed, the information needed for each task, the information to be produced during and at the conclusion of each task, and a description of the work products that will be submitted to Ohio EPA. This includes the deliverables set forth in the Orders and in this SOW, including Interim Technical Memoranda produced (as needed) during the field investigation and at the conclusion of each major phase of a RI/FS, and meetings and presentations to Ohio EPA.

If Respondent intends to rely on modeling to satisfy any RI/FS task, Respondent shall identify the models Respondent proposes to use and, in a manner consistent with U.S. EPA's Guidance for Quality Assurance Plans for Modeling (EPA QA/G-5M), fully explain their application in the RI/FS Work Plan and supporting documents, including model assumptions and operating conditions, input parameters, and verification and calibration procedures. If Respondent identifies the need to conduct modeling following concurrence or approval, as applicable, on a RI/FS Work Plan, Respondent shall submit for review and concurrence or approval, as applicable, an addendum to that RI/FS Work Plan.

Each RI/FS Work Plan shall reflect coordination with any identified treatability study requirements (Section 7 of this SOW) and shall include a process for refining and/or identifying additional ARARs and to be considered (TBC) criteria, refining the CSM, and submitting quarterly progress reports (Section 10 of this SOW) and Interim Technical Memoranda (ITM) to Ohio EPA. Each RI/FS Work Plan shall include a RI/FS project schedule, including identification of enforceable Milestones, indicating critical path dependencies and including dates for the anticipated initiation, duration, and completion of each RI/FS task. The schedule shall also address field work and development and submittal of required deliverables. The RI/FS Work Plan, SP, and QAPP must be concurred with or approved, as applicable, by Ohio EPA prior to the initiation of field activities for each Remedial Action project.

Due to the potentially unknown nature of the Site and the iterative nature of the RI/FS, additional RI/FS tasks may be identified following concurrence or approval, as applicable, on a RI/FS Work Plan. Ohio EPA may request or Respondent may propose additional RI/FS tasks in accordance with the provisions of the Additional Work Section of the Orders.

3.2 Sampling Plan (SOW Appendix C, outlines C-1 and C-2)

Consistent with the applicable outline in Appendix C of this SOW, Respondent shall submit for review and concurrence or approval, as applicable, a Sampling Plan (SP) for each Remedial Action project describing the field activities to be performed and defining the procedures and methods that must be used to collect field measurements and samples. Activities and procedures may include collection of geophysical data, drilling of soil borings, installation of ground water monitoring wells, collection of multimedia samples, field control samples, and any field measurements pertaining to the Site-Wide Waste Disposition Evaluation project and the Process Buildings and Complex Facilities D&D Evaluation projects. Each SP shall also address, as applicable, sample packaging and shipping requirements, proper testing, handling and disposal of investigation-derived wastes/contaminants, field documentation procedures, and corrective action procedures.

Each SP shall detail, as applicable, the methods and procedures for each field activity. A field activity includes any task which involves the collection of environmental media or data. Each SP shall discuss the purpose of each task and how it will fulfill the DQOs provided in the associated QAPP.

3.3 **Quality Assurance Project Plan** (SOW Appendix D)

Consistent with Appendix D of this SOW, Respondent shall submit for review and concurrence or approval, as applicable, a QAPP for each Remedial Action project. The QAPP shall address all relevant elements of U. S. EPA's Guidance for Quality Assurance Project Plans, QA-G-5, EPA/240/R-02-009, December 2002, including DQOs developed in a manner consistent with the DQO guidance identified in the Guidance List (Attachment C to the Orders). Some QAPP elements may already be provided in the Sampling Plan, in which case, Respondent shall clearly cross-reference in the QAPP the section and page number in the Sampling Plan where such information may be located. See Appendix D of this SOW for the QAPP elements included in the referenced U.S. EPA guidance.

Respondent shall include an electronic version of the laboratory(ies) QAPP on disc in PDF format. Upon request, Respondent shall, in accordance with the provisions of the Orders, provide to Ohio EPA any other records, documents, or other information generated or stored by the laboratory(ies) as a result of the Work Respondent is required to perform by the Orders or this SOW.

3.4 **Health and Safety Plan** (U.S. EPA RI/FS Guidance Section 2.3.3)

Respondent shall submit for review and comment a HASP that includes monitoring, procedures, and protocols needed to protect the health and safety of those persons conducting Site activities, visiting the Site, and residing or working in the surrounding community.

Respondent shall submit a HASP that (at a minimum) addresses the following:

A. Facility or Site description including availability of resources such as roads, water supply, electricity and telephone service;
B. Description of the known hazards and an evaluation of the risks
C. Listing of key personnel (including the Site safety and health officer) and alternates responsible for Site safety, response operations, and for protection of public health;
D. Delineation of the Remedial Action project work area, including a map;

E. Description of levels of protection to be worn by personnel in the work area(s), including a description of the personal protective equipment to be used for each of the Remedial Action project tasks and operations being conducted;
F. Description of the medical monitoring program;
G. Description of standard operating procedures established to assure the proper use and maintenance of personal protective equipment;
H. The establishment of procedures to control access to the Remedial Action project area;
I. Description of decontamination procedures for personnel and personal protective equipment;
J. Establishment of Site emergency procedures, including a contingency plan ;
K. Availability of emergency medical care for injuries and toxicological problems;
L. Description of requirements for an environmental monitoring program. (This should include a description of the frequency and type of any air and personnel monitoring, environmental sampling techniques and a description of the calibration and maintenance of the instrumentation used as it pertains to each Remedial Action project);
M. Specification of any routine and special training required for Site personnel;
N. Entry procedures for confined spaces; and
O. Establishment of procedures for protecting workers from weather-related problems.

The HASP shall be consistent with applicable regulations, guidance, CERCLA requirements, and DOE Orders.

Although Ohio EPA will review and may provide comment on the draft HASP, Ohio EPA will not have a concurrence or approval role with respect to the HASP. It is Respondent's responsibility to comply with applicable rules and regulations and to ensure that Site workers, Site visitors, and the surrounding community are protected from any hazards or potential hazards associated with the Site throughout the conduct of RI/FS activities.

3.5 **Waste/Contaminant or Site Characterization** (SOW Appendix B, outlines B-1 and B-2)

Consistent with the applicable outline in Appendix B of this SOW, Respondent shall conduct such investigations as are necessary to obtain data of sufficient quality and quantity to support each RI/FS and identification and evaluation of potential remedial action alternatives. Geophysical characterization methods, such as ground penetrating radar, magnetometry, tomography, or other electromagnetic methods shall be used as appropriate to gather data necessary to support the tasks associated with the RI/FS for the Site-Wide Waste Disposition Evaluation project and the Process Buildings and Complex Facilities D&D Evaluation projects.

All sampling, analyses, and measurements shall be conducted in accordance with the concurred upon or approved, as applicable, QAPP and SP. All sampling and measurement locations shall be documented in a project-specific field log and identified on project maps. Respondent shall document the procedures used in making the above determinations. The following sections describe the characterization elements for the Site-Wide Waste Disposition Evaluation project and the Process Buildings and Complex Facilities D&D Evaluation projects.

3.5.1 **Site-Wide Waste Disposition Evaluation Project** (SOW Appendix B, Section 1.0 of outline B-1)

Consistent with Outline B-1 in Appendix B to this SOW, Respondent shall collect the following data:

I. Anticipated Waste Streams

A. Waste anticipated to be generated during performance of Work under the Orders
B. Potential waste streams associated with environmental media cleanup activities to be conducted under the RCRA Consent Decree and for which DOE might seek exemptions under Ohio laws and regulations to allow placement of such waste streams in any OSDC that might be constructed as a result of the Site-Wide Waste Disposition Evaluation project.

Information to be included with respect to I.A. and I.B., above, should include:

a. Nature of anticipated waste streams (e.g., radioactive, mixed waste, hazardous waste, solid waste, radioactive TSCA, non-radioactive TSCA, etc.);
b. Estimated quantity or volume, including basis for estimate; and
c. Anticipated types of waste within each of the general waste stream categories (e.g., liquid, solid, rubble, equipment, etc.).

3.5.2 Process Buildings and Complex Facilities D&D Evaluation Projects (SOW Appendix B, Section 1.0 of outline B-2)

Consistent with outline B-2 in Appendix B to this SOW, Respondent shall collect the following data for each Remedial Action project:

I. Building / Structure:
A. Location
B. Building Description

- Type;
- Operating practices (past and present);
- Period of operation;
- Age;
- General physical conditions;

II. Anticipated Waste Streams

A. Contents of facilities anticipated to be removed during performance of Work under the Orders
B. Structures, including infrastructure, foundations, and residual soils anticipated to be removed during performance of Work under the Orders

Information to be included with respect to II.A and II.B, above, should include:

a. Nature of anticipated waste streams (e.g., radioactive, mixed waste, hazardous waste, solid waste, radioactive TSCA, non-radioactive TSCA, etc.);
b. Estimated quantity or volume, including basis for estimate;

c. Anticipated types of waste within each of the general waste stream categories (e.g., liquid, solid, rubble, equipment, etc.); and
d. Estimated levels of contamination (at the level of detail appropriate to support development and evaluation of remedial alternatives and selection of a Remedial Action), including basis for estimate.

Respondent must document the procedures used in making the above determinations.

4.0 Environmental Setting

The requirement to address the Environmental Setting shall only apply to the Site-Wide Waste Disposition Evaluation project and will only be required if an OSDC is anticipated to be evaluated as one of the remedial alternatives for that project.

Consistent with Outline B-1 to Appendix B of this SOW, Respondent shall collect information to supplement and verify existing information on the environmental setting of the Site and surrounding the Site. Characterization of the environmental setting shall, as relevant and appropriate, include but not be limited to, regional hydrogeology, hydrogeology, subsurface soil and rock units, surface soils, surface water and sediment, land use, land cover, local climate and human and ecological receptors. Components to be addressed may include:

I. Regional Hydrogeology

Respondent shall describe the regional hydrogeology surrounding the Site, including:

A. Depth to bedrock;
B. Hydrostratigraphic unit correlation (both map and profile view);
C. Aquifer and aquitard delineation;
D. Active and inactive residential, public, industrial, agricultural, and other production well locations within a four (4) mile radius of the Site;
E. Well logs, with well construction details and average yield;
F. Average pumping rates for production wells;
G. Ambient ground water quality characterization;
H. Average depth to water;
I. Seasonal variation in ground water flow direction;
J. Recharge and discharge area identification;
K. Source water protection area identification;
L. Aquifer designation (e.g., federal Sole Source Aquifer; Drinking Water Source Water Protection Area);
M. Regional geomorphology and topography, including locations of surface water bodies and floodways. This description should include an analysis of any features that may influence the ground water flow system; and
N. Structural feature delineation, including bedding planes and fold, joint, and fracture trace orientation.

II. Site Hydrogeology

Respondent shall characterize hydrogeology for candidate locations for a potential OSDC based on data collected from bore holes, monitoring wells, piezometers, and laboratory and field tests. As appropriate, characterization shall include:

A. An accurate classification and description of the consolidated and unconsolidated stratigraphic units beneath the Site, including:
    1. Hydraulic conductivity (vertical and horizontal);
    2. Porosity, effective porosity, and bulk density;
    3. Rock and soil (ASTM 2488 and 2487) classification;
    4. Grain size distribution (sieve and hydrometer) curves;
    5. Moisture content;
    6. The attenuation capacity and mechanisms of attenuation of the natural earth material and/or fill (i.e., ion exchange capacity, base saturation, organic carbon content, mineral content, soil sorptive capacity, storage capacity); and
    7. pH;
B. Surface soils, including:
    1. Soil Conservation Service soil classification;
    2. Surface soil distribution;
    3. Depth and profile;
    4. Organic carbon;
    5. pH;
    6. Porosity (total, air-filled);
    7. Bulk density;
    8. Gravimetric soil moisture content;
    9. Fraction of vegetative cover (of contaminated areas);
    10. Ion exchange capacity;
    11. Infiltration; and
    12. Evapotranspiration
C. A description of the local ground water flow regime, including:
    1. Identification of all aquitards and aquifer systems (hydrogeologic formations wholly or partially saturated and capable of transmitting flow);
    2. Identification of saturated zones;
    3. Identification of water table and potentiometric surface depth with degree of seasonal fluctuation;
    4. Identification of seasonal ground water flow direction for each aquifer system including water table and/or potentiometric surface contour maps for each significant zone of saturation;
    5. Quantification of flow rate throughout each aquifer system;
    6. Quantification of horizontal and vertical gradients;
    7. Quantification of infiltration rates through the unsaturated zone;
    8. Quantification of flow across and lateral to hydrostratigraphic units, including the degree of seepage and upward leakage;
    9. Quantification of flow budget across the Site with identification of recharge and discharge areas;
    10. Location of nearest hydraulic boundaries;
    11. Characterization of ambient ground water chemistry both upgradient and downgradient of the Site;
    12. Hydrostratigraphic cross sections depicting horizontal and lateral extent, depth, and thickness of units. Cross sections shall be developed both longitudinally and transverse to the dominant direction of flow across the Site.

Cross sections shall include flow nets distinguishing vertical and horizontal components of flow across stratigraphic units; and

13. Delineation of structural features, including orientation, density, and distribution.

D. A description of man-made influences that may affect the hydrogeology of the Site, identifying:
    1. Active and inactive water supply and production wells with pumping schedules; and
    2. Man-made structures such as injection wells, pipelines, french drains, ditches, unlined and lined ponds, lagoons, septic tanks, NPDES permitted out falls, retention areas and utility lines.

E. An area-specific description of the geomorphology. At a minimum this shall include;
    1. An analysis of any topographic feature that may influence the ground water flow system;
    2. A surface topography map depicting (at a minimum) streams, wetlands, topographic depressions and springs. The topographic map shall be constructed by a qualified professional and shall provide contour intervals at a level of detail appropriate for the Site-specific hydrogeologic investigation (e.g., two-foot intervals). The map shall depict the location of all borings, monitoring wells and cross sections.

F. The RI Report shall document the methods and procedures used to gather and evaluate the hydrogeologic data. These methods and procedures shall be in accordance with the RI/FS Work Plan concurred with or approved, as applicable, by Ohio EPA. Field methods may include but are not limited to:
    1. Borehole characterization;
    2. Ground water level measurements;
    3. Ground water sampling;
    4. Monitoring well and piezometer installation;
    5. Aquifer testing (e.g., pump and slug testing) to determine the degree of hydraulic communication between hydrostratigraphic units and subsurface structure;
    6. Remote sensing, including geophysical techniques to identify zones of saturation, hydrostratigraphic units, and subsurface structure;
    7. Ground water tracer testing to assist in determining migration pathways and hydraulic conductivity; and
    8. Isotopic age dating of ground water to assist in migration identification.

III. Surface Water and Sediment

Respondent shall characterize relevant surface water bodies in the vicinity of the Site. As appropriate, such characterization shall include, but not be limited to:

A. Description of the perennial and ephemeral surface water bodies including:
    1. For lakes and estuaries: location, elevation, surface area, inflow, outflow, depth, temperature stratification and volume;
    2. For impoundments: location, elevation, surface area, depth, volume, freeboard and purpose of impoundment;

3. For streams, ditches, drains, wetlands, and channels: location, hydraulic gradient, flow velocity, base flow, depth, width, bank height and slope, gaining and losing stream sections, seasonal fluctuations, stabilization of stream bed; description of stream banks; flood plain areas, and flood zones (i.e., 50 and 100 year events); area of drainage basin;
4. Drainage patterns/storm water runoff;
5. Degree of ground water seepage and/or recharge to surface water bodies; and
6. Any known discharges including those permitted by NPDES.

B. Description of the chemical, physical and biological/biochemical characteristics of the surface water and sediments. This includes but is not limited to:
   1. Chemical (surface water and/or sediment)
      a) Total organic carbon (TOC);
      b) pH;
      c) Total dissolved solids;
      d) Total suspended solids;
      e) Biochemical oxygen demand (BOD);
      f) Conductivity; and
      g) Dissolved oxygen.
   2. Physical (surface water and/or sediment)
      a) Temperature;
      b) Particle/grain size;
      c) Appearance/texture/odor/color;
      d) Organic matter deposition;
      e) Deposition area, patterns, and rates; and
      f) Thickness profile.
   3. Biological/Biochemical
      a) Aquatic life use designation based on Ohio's Water Quality Standards2;
      b) Attainment status of water body; and
      c) Ohio wetland classification.
   4. The RI Report shall document the methods and procedures used to gather and evaluate the surface water and sediment data. These methods and procedures shall be in accordance with the RI/FS Work Plan concurred with or approved, as applicable, by Ohio EPA. Field methods may include but are not limited to:
      a) Drain tracer studies;
      b) Seepage meter installation and data acquisition;
      c) Stream piezometer installation and water level acquisition; and
      d) Stream weir gauge installation and data acquisition.

IV. Local Climate

[2] Ohio Water Quality Standards, OAC Chapter 3745-1

Respondent shall provide relevant information characterizing the climate in the vicinity of the Site in general and at the time of the investigation(s). As appropriate, such information shall include, but not be limited to:

A. Description of the following parameters:
    1. Annual and monthly rainfall averages;
    2. Monthly temperature averages and extremes;
    3. Wind speed and direction;
    4. Relative humidity/dew point;
    5. Atmospheric pressure;
    6. Evaporation data;
    7. Development of inversions; and
    8. Climate extremes that have been known to occur in the vicinity of the Site, including frequency of occurrence.
B. A description of topographic or manmade features which may affect air flow or emission patterns, including:
    1. Ridges, hills or mountain areas;
    2. Canyons or valleys;
    3. Surface water bodies;
    4. Wind breaks and forests;
    5. Buildings; and
    6. Any other features that may affect air flow or emission patterns.

V. Human receptors potentially exposed to Site-related contaminants:
    A. Human population data including demographics;
    B. Sensitive sub-populations;
    C. Populations served by surface water intakes or ground water wells; and
    D. Land use (e.g., residential, commercial, recreational).

VI. Ecological receptors potentially exposed to Site-related contaminants, including:
    A. Terrestrial receptors;
    B. Aquatic receptors; and
    C. Special interest species (including Threatened and Endangered species).

5.0 Threat to Human Health, Safety and the Environment (SOW Appendix E, Section 4.0 of outlines E-1 and E-2

Respondent shall prepare reports for the Site-Wide Waste Disposition Evaluation project and the Process Buildings and Complex Facilities D&D Evaluation projects consistent with the applicable outlines that appear as appendices to this SOW. Data collected for each Remedial Action project shall be sufficient to support a streamlined evaluation of threats to human health, safety and the environment as required by the applicable appendices to this SOW. Respondent shall collect any necessary data in accordance with a RI/FS Work Plan concurred with or approved, as applicable, by Ohio EPA and shall document the methods and procedures used during the investigation in each RI Report. Section 3.5 of this SOW summarizes the requirements for Waste/Contaminant and Site Characterization data that will be used in the streamlined evaluation.

5.1 Site-Wide Waste Disposition Evaluation Project (SOW Appendices A and E, Sections 3.3 and 3.4 of outline A-1 and Section 4.0 of outline E-1)

Respondent shall prepare a streamlined evaluation of the types of hazards typically associated with the anticipated waste streams sufficient to support evaluation of potential alternatives for Site-wide waste disposition. The streamlined risk evaluation shall utilize the data collected and assembled in accordance with Section 3.5 of this SOW. The streamlined risk evaluation shall discuss potential on-Site receptors (workers) and off-Site receptors (plant neighbors and other members of the public that might directly contact waste streams from the Site during and after on-Site disposal, and during off-Site transportation of waste), and environmental receptors.

5.2 Process Buildings and Complex Facilities D&D Evaluation Projects (SOW Appendices A and E, Sections 3.3 and 3.4 of outline A-2 and Section 4.0 of outline E-2)

Respondent shall prepare a streamlined evaluation of the risk posed to human health, safety and the environment by the release or threat of release of contaminants from the Process Buildings and Complex Facilities sufficient to support a decision whether to remove, reuse, or take no action to address the Process Buildings and Complex Facilities in each Remedial Action project area. The streamlined risk evaluation shall utilize the data collected and assembled in accordance with Section 3.5 of this SOW. The streamlined risk evaluation shall consider exposure to contaminants that might occur if the facilities continue to degrade. Respondent shall consider the following receptors: on-Site (workers) and off-Site (plant neighbors and other members of the public near the Site), and, as appropriate, environmental receptors.

6.0 Remedial Investigation Report (SOW Appendix E, outlines E-1 and E-2)

Respondent shall submit for Ohio EPA review and concurrence or approval, as applicable, RI Reports for each Remedial Action project detailing the methods and results of the remedial investigations and the potential threats to human health, safety and the environment. The sample outlines for the RI Reports are provided in Appendix E of this SOW.

7.0 Developing and Screening of Remedial Alternatives (U.S. EPA RI/FS Guidance Chapter 4) (SOW Appendix G, Section 2.0 of outlines G-1 and G-2)

Consistent with the applicable outline in Appendix G of this SOW, Respondent shall develop and screen remedial alternatives to arrive at an appropriate range of alternatives for detailed analysis for the Site-Wide Waste Disposition Evaluation project and the Process Buildings and Complex Facilities D&D Evaluation projects. The following activities are to be performed by Respondent as needed during the development and screening of remedial alternatives.

7.1 Refine Remedial Action Objectives (U.S. EPA RI/FS Guidance Section 4.2.1) (SOW Appendix G, Section 2.2 of outlines G-1 and G-2)

Consistent with the applicable outline in Appendix G of this SOW, Respondent shall further refine the RAOs identified during project scoping. The refined RAOs for each Remedial Action project shall be based on the results of the RI and, in the case of the Site-Wide Waste Disposition Evaluation project, any then Ohio EPA-approved WAC if an OSDC is evaluated as a possible remedial alternative. The RAOs also shall be consistent with Section 300.430 of the NCP. Respondent shall prepare and submit for review an Interim Technical Memorandum (ITM) identifying the refined RAOs for protection of human health and the environment and

detailing the methods and procedures used to refine them. The refined RAOs shall be included in the Alternatives Array Document described below.

7.2 Alternatives Array Document (U.S. EPA RI/FS Guidance Chapter 4) (SOW Appendix G, Section 2.3 of outlines G-1 and G-2*)*

Consistent with the applicable outline in Appendix G of this SOW, Respondent shall prepare an Alternatives Array Document (AAD) for each Remedial Action project which documents the methods, rationale, and results of the alternatives development and the screening process. Respondent shall include an evaluation of whether the amount and type of data existing for each Remedial Action project at the Site will support the subsequent detailed analysis of the alternatives. Respondent shall assure identification of an appropriate range of viable alternatives for consideration in the detailed analysis. The final AAD shall be combined with the detailed analysis of alternatives to form the FS Report described in Section 8 and Appendix G of this SOW. The following sections summarize the requirements for conducting the alternatives screening process and provide the required contents of the AAD as it pertains to the Site-Wide Waste Disposition Evaluation project and the Process Buildings and Complex Facilities D&D Evaluation projects.

I. Technologies Screening (Section 4.2.2 through 4.2.5.3 of the U.S. EPA RI/FS Guidance)

A. Develop General Response Actions (U.S. EPA RI/FS Guidance 4.2.2)

Respondent shall refine the general response actions initially identified during project scoping. General response actions shall be identified describing actions, singly or in combination, to satisfy the RAOs.

B. Identify anticipated waste/contaminant streams for each Remedial Action project area at the Site and, for the Site-Wide Waste Disposition Evaluation Project only, establish preliminary criteria for waste/contaminant acceptance if an OSDC is anticipated to be evaluated as a possible remedial alternative under the Site-Wide Waste Disposition Evaluation Project. (U.S. EPA RI/FS Guidance 4.2.3).

Respondent shall identify areas or volumes of waste/contaminants to which general response actions may apply, taking into account requirements for protectiveness as identified in the RAOs, Site conditions, and the nature and extent of contamination (Section 4.2.3 of the U.S. EPA RI/FS Guidance).

C. Identify, Screen, and Document Remedial Technologies (U.S. EPA RI/FS Guidance 4.2.4)

Respondent shall identify, screen and evaluate remedial technologies applicable to each general response action to eliminate those that cannot be technically implemented based on contaminant types and concentrations and/or Site characteristics. Decisions made during the remedial technology screening shall be documented for inclusion in the Alternatives Array Document.

D. Evaluate and Document Process Options (U.S. EPA RI/FS Guidance 4.2.5)

As appropriate, process options for each surviving technology type shall be identified and evaluated on the basis of effectiveness, implementability, and cost as those criteria are defined in Section 4.2.5 of the U.S. EPA RI/FS Guidance.
Respondent shall select and retain, wherever appropriate and possible, one or more representative process options for each implementable technology type. The evaluation should focus on effectiveness factors at this stage with less effort directed at the implementability and cost factors. Identifying and screening process options shall be documented for inclusion in the Alternatives Array Document. Respondent shall consider the NCP's preference for treatment over conventional containment or land disposal approaches.

II. Alternatives Array Document (U.S. EPA RI/FS Guidance 4.2.6)

Respondent shall submit for review and comment an AAD for each Remedial Action project consisting of the following:

A. Assemble and Document Alternatives

Respondent shall assemble the selected representative technologies into remedial alternatives. Each alternative should comprehensively address the Site-specific PRGs, RAOs, and ARARs. Each alternative shall describe the locations of the Site affected; approximate volumes of any wastes / contaminants to be removed or treated; and any other information needed to adequately describe the alternative and document the logic behind each specific remedial alternative.

B. Conduct and Document the Screening Evaluation of Each Alternative

Respondent may perform, or Ohio EPA may require, that the assembled alternatives undergo a screening process based on short and long term aspects of effectiveness, implementability, and relative cost as those criteria are defined in Section 4.3 of the U.S. EPA RI/FS Guidance. Screening of the alternatives is generally performed when there are many feasible alternatives available for detailed analysis. The screening may be conducted to assure that only those alternatives with the most favorable composite evaluation of all factors are retained for further analysis, while at the same time preserving an appropriate range of remedial options. Prior to conducting a screening of alternatives, Respondent shall further define the alternatives such that design considerations for technologies and the ability of the alternatives to satisfy the RAOs are described. The purpose shall be to ensure that a basis exists for evaluating and comparing the alternatives before proceeding with the alternative screening step (Section 4.3.1 of the U.S. EPA RI/FS Guidance).

Respondent shall prepare a summary of the assembled remedial alternatives and their related ARARs, specifically including an analysis of how siting criteria contained in Ohio Administrative Code (OAC) Chapters 3745-27 and 3745-50 will be met and provide the reasoning employed in the alternative screening. The alternatives summary shall be submitted with the AAD.

III. Post-screening Considerations

At the conclusion of the alternative screening phase, or if no screening is needed, Respondent shall determine if the amount and type of data existing for the Remedial Action project area will support the detailed analysis of the surviving remedial alternatives (Section 4.3.3.3 of the U.S. EPA RI/FS Guidance). Specifically, Respondent shall consider whether any additional field investigation or treatability testing is necessary prior to proceeding with the detailed analysis of alternatives. If Respondent determines that additional data or treatability testing is needed, Respondent shall document the determination, the specific types of data needed; and the time frame for obtaining the data in the AAD. If Ohio EPA concurs with or approves, as applicable, Respondent's determinations, Respondent shall, in accordance with the Orders, submit for review and concurrence or approval, as applicable, an addendum to the RI/FS Work Plan and supporting documents and/or a treatability study work plan for obtaining the additional data. Should Ohio EPA determine, based on review of the AAD, that additional data is needed to perform the detailed analysis of alternatives, Ohio EPA shall notify Respondent of the need for additional data, and Respondent may either submit for review and concurrence or approval, as applicable, an addendum to the RI/FS Work Plan and supporting documents and/or a Treatability Study Work Plan to obtain the additional data or dispute the Ohio EPA determination pursuant to the provisions of the Orders.

Respondent shall begin to develop and evaluate a range of remedial alternatives during RI/FS scoping (Section 1.0 and Appendix A of this SOW; Section 2.2.3 of the U.S. EPA RI/FS Guidance). Respondent shall continue to develop and evaluate the remedial alternatives initially developed during project scoping as RI data become available. With the exception of the "no action" alternative, all alternatives under consideration must, at a minimum, ensure protection of human health and the environment and comply with the applicable or relevant and appropriate requirements of state and federal laws and regulations or satisfy the requirements of 42 U.S.C. Section 9621 and 40 CFR Section 300.430 pertaining to waiver or non-attainment of ARARs. Consistent with Section VI (Performance of the Work By Respondent) of the Orders, if an OSDC is evaluated as a possible remedial alternative under the Site-Wide Waste Disposition Evaluation project, Respondent shall evaluate at least one alternative or sub-alternative that is fully ARARs compliant, with no ARARs waived.

8.0 Treatability Studies (SOW Appendix F outlines F-1 and F-2)

Treatability studies are laboratory or field tests designed to provide critical data needed to evaluate one or more treatment technologies. These studies generally involve characterizing untreated waste/contaminants and evaluating the performance of the technology under different operating conditions. These results may be qualitative or quantitative, depending on the level of treatability testing. Treatability studies conducted during the RI/FS to support remedy selection are generally used to determine whether the technology can achieve the RAOs and to provide information needed to support the detailed analysis of alternatives in the FS.

Potential remedial technologies and associated treatability study needs are initially evaluated by Respondent during RI/FS scoping activities (Section 1 and Appendix A of this SOW). Due to the iterative nature of the scoping process throughout the conduct of the RI/FS, potential remedial technologies and the need for treatability studies may be reevaluated as data from the RI becomes available. Regardless of when a potential remedial technology is identified, it is incumbent upon Respondent to identify the need for treatability studies as early in the RI/FS

process as possible such that treatability studies are substantially completed prior to performing the detailed analysis of alternatives (Section 7 of this SOW). Ohio EPA may also identify the need for treatability studies during the course of the RI/FS and communicate that need to Respondent. Respondent shall conduct treatability studies in a systematic fashion to ensure that the data generated can support the detailed analysis of alternatives during each FS. If the need for treatability studies arises during the conduct of a RI/FS, Respondent shall submit for review and concurrence or approval, as applicable, a Treatability Study Work Plan prepared in a manner consistent with U.S. EPA's Guidance for Conducting Treatability Studies Under CERCLA, EPA/540/R-92/071a, October, 1992 (Treatability Study Guidance). The Treatability Study Work Plan may incorporate by reference concurred with or approved, as applicable, portions of the RI/FS Work Plan and supporting documents.

I. Data Quality Objectives (Section 3.2 of the Treatability Study Guidance)

Respondent shall establish DQOs for the treatability study and incorporate them into the Treatability Study Work Plan, the study design, the SP, and the QAPP.

II. The Treatability Study Work Plan shall address the following elements:

A. Project Description

Respondent shall provide background information regarding existing waste/contaminant(s) and summarize existing waste/contaminant characterization data (matrix type and characteristics and the concentrations and distribution of the contaminants of concern). Respondent shall also specify the type of study to be conducted, (*i.e.*, remedy screening; remedy selection testing; or remedy implementation).

B. Treatment Technology Description

Respondent shall briefly describe the treatment technology to be tested. Respondent may include a flow diagram showing the input stream, the output stream, and any side-streams generated as a result of the treatment process. Respondent shall also include a description of the pre- and post treatment requirements.

C. Test Objectives

Respondent shall define the objectives of the treatability study and the intended use of the data (*e.g.*, to determine potential feasibility; to develop performance or cost data for remedy selection; or to provide detailed design, cost and performance data for implementation). Respondent shall include performance goals that are based on established cleanup criteria for the Site or, where such criteria do not exist, on contaminant levels that are protective of human health, safety and the environment.

D. Experimental Design and Procedures

For any experimental design, Respondent shall identify the tier and the scale of the testing, the volume of waste/contaminant material to be tested, the critical parameters, and the type and amount of replication. For the design of the experiment, Respondent

must consider the DQOs and the costs associated with replication. Respondent shall describe the specific steps involved in the performance of the treatability study in the standard operating procedures (SOPs). The SOPs should be sufficiently detailed to allow the laboratory or field technician conducting the test to operate the equipment and to collect the samples.

E. Equipment and Materials

Respondent shall list the equipment, materials, and reagents that will be used in the performance of the treatability study, including quantity, volume/capacity, calibration or scale, equipment manufacturer and model numbers, and reagent grades and concentrations.

F. SP and QAPP

Respondent shall describe how the existing Sampling Plan (SP) (Section 3.2 and Appendix C of this SOW) and QAPP (Section 3.3 and Appendix D of this SOW) shall be modified or amended to address field sampling, waste/contaminant characterization, and sampling and analysis activities in support of the treatability study. Respondent shall describe the kinds of samples that will be collected and specify the level of Quality Assurance/Quality Control (QA/QC) required.

G. Data Management

Respondent shall describe the procedures for recording observations and raw data in the field or laboratory. If proprietary processes are involved, Respondent shall describe how confidential information will be handled.

H. Data Analysis and Interpretation

Respondent shall describe the procedures for analyzing and interpreting data from the treatability study, including methods of data presentation and statistical evaluation.

I. Health and Safety Plan (HASP)

Respondent shall describe how the existing HASP (Section 3.4 of this SOW) shall be modified or amended to address the hazards associated with treatability testing.

J. Residuals Management

Respondent shall describe the management of treatability study residuals. Respondent should include estimates of both the types and quantities of residuals expected to be generated during treatability testing based on the treatment technology and the experimental design. Respondent shall also outline how treatability study residuals will be analyzed to determine if they are hazardous wastes and discuss how such wastes will be managed.

K. Reports

Respondent shall describe the preparation of interim and final reports documenting the results of the treatability study. (Appendix F of this SOW contains sample outlines for treatability study reports.) For treatability studies involving more than one tier of testing, Respondent shall provide interim reports, which provide a means of determining whether to proceed to the next tier. Respondent shall also describe how the existing quarterly progress reports (Section 10 of this SOW) shall be modified or amended to include reporting of treatability study progress.

L. Schedule

Respondent shall include a comprehensive treatability study project schedule, including identification of any enforceable Milestones, indicating critical path dependencies and including dates for the initiation, duration, and completion of each treatability study task. The schedule shall also include field work and development and submittal of required deliverables. To the extent that the performance of the treatability study will impact the RI/FS project schedule (Section 3.4 of this SOW), Respondent shall submit a revised RI/FS project schedule for review and approval concurrently with the Treatability Study Work Plan.

9.0 Feasibility Study Report (U.S. EPA RI/FS Guidance Section 5.5); (SOW Appendix G, outlines G-1 and G-2)

Once Ohio EPA and Respondent have determined that sufficient data exist to proceed, Respondent shall conduct a detailed analysis of the alternatives surviving the screening process to provide the information needed for selection of a remedy for each Remedial Action project area. If an alternative providing for an OSDC is carried forward for detailed analysis, the FS Report shall include a draft WAC. The detailed analysis shall consist of an individual analysis of each alternative against the nine CERCLA evaluation criteria followed by a comparative analysis of the alternatives using the same evaluation criteria as the basis for comparison.

Respondent shall prepare and submit an FS Report for each Remedial Action project for review and concurrence or approval, as applicable. The final AAD shall be incorporated into the FS (SOW Appendix G, Section 2.3 of outlines G-1 and G-2). In addition, Respondent will refer to Appendix G of this SOW for an outline of the FS Report format and required report content. The detailed analysis of remedial alternatives shall consist of the following elements:

I. Detailed Description of Each Alternative (U.S. EPA RI/FS Guidance Sections 6.2.1 to 6.2.4)

The detailed narrative description of each alternative shall include at a minimum:

A. Description of each technology component;
B. Refinement of the volumes and/or areas of contaminated media to be addressed;
C. Special engineering considerations required to implement the alternative, *(e.g.*, pilot treatment facility or additional studies needed to proceed with final remedial design);
D. Operation, maintenance and monitoring requirements, including the WAC (WAC requirement would only be applicable if an alternative including consideration of an OSDC was included under the Site-Wide Waste Disposition Evaluation project);

E. Temporary storage requirements;
F. Health and safety requirements related to implementation and operation and maintenance of the alternative, including on- and off-Site worker and general public health and safety considerations;
G. An analysis of how the alternative could be phased into individual operations and a discussion of how these operations could best be implemented to produce significant environmental improvement;
H. A review of any off-Site treatment or disposal facilities and transportation needs to ensure compliance with the Resource Conservation and Recovery Act, TSCA, and state requirements; and
I. An analysis of the projected performance and expected results of the alternative with emphasis on potential for further future release of hazardous substances.

II. National Environmental Policy Act (NEPA) Considerations

Respondent shall incorporate NEPA considerations into the CERCLA process as appropriate during evaluation of the remedial action alternatives.

III. Apply the Nine CERCLA Evaluation Criteria and Document the Individual Alternative Analysis

Respondent shall apply the nine evaluation criteria described below to each individual alternative. Respondent shall document the decision making process and the results of the individual analysis of alternatives.

A. Overall Protection of Human Health, Safety and the Environment.

Respondent shall assess the alternatives to determine if they can adequately protect human health, safety and the environment from unacceptable risks posed by hazardous substances, pollutants or contaminants present at the project area by eliminating, reducing or controlling exposures to levels established during development of remediation goals. This is a threshold requirement and the primary objective of the remediation program.

B. Compliance with Applicable or Relevant and Appropriate Requirements.

Respondent shall assess the alternatives to determine if they attain applicable or relevant and appropriate standards, criteria and requirements of federal, state, and local laws or satisfy the criteria for ARARs waiver(s) or non-attainment as set forth in 42 U.S.C. Section 9621 and 40 CFR Section 300.430. This is also a threshold requirement. Consistent with Section VI (Performance of the Work by Respondent) of the Orders, if an OSDC is evaluated as a possible remedial alternative under the Site-Wide Waste Disposition Evaluation project, Respondent shall evaluate at least one alternative or sub-alternative that is fully ARARs compliant, with no ARARs waived.

C. Long-term Effectiveness and Permanence.

Respondent shall assess the alternatives for the long-term effectiveness and permanence they afford, along with the degree of certainty that the alternative will prove successful. Factors that shall be considered, if appropriate and/or applicable to an alternative, include the following:

1. Nature and magnitude of residual risk; potential for exposure of human and environmental receptors; concentrations of hazardous substances, pollutants or contaminants remaining after implementing the remedial alternative, considering the persistence, toxicity, mobility and propensity to bio-accumulate such hazardous substances and their constituents (see Risk Assessment Guidance for Superfund (RAGS), Part C);
2. The type, degree and adequacy of long-term management required for untreated substances and treatment residuals, including engineering controls (such as containment technologies), institutional controls, monitoring and operation and maintenance;
3. Long-term reliability of the engineering and institutional controls, including uncertainties associated with land disposal of untreated hazardous substances, pollutants, contaminants, and treatment residuals, and;
4. Potential need for replacement of the remedy, and the continuing need for repairs to maintain the performance of the remedy.

D. Reduction of Toxicity, Mobility or Volume through Treatment

Respondent shall assess the degree to which alternatives employ treatment that reduces toxicity, mobility or volume of contaminants. If Respondent determines that the NCP preference for such treatment is not appropriate and/or applicable to an alternative, Respondent shall provide an explanation for that determination. Where appropriate, Respondent shall identify alternatives which, at a minimum, address the principal threats posed by the Site through treatment. Factors that shall be considered, if appropriate and/or applicable to an alternative, include the following:

1. The treatment or recycling processes the alternatives employ and materials they will treat;
2. The amount of hazardous substances, pollutants or contaminants that will be destroyed, treated, or recycled;
3. The degree of expected reduction in toxicity, mobility, or volume of the waste/contaminants due to treatment or recycling and the specifications of which reduction(s) are occurring;
4. The degree to which the treatment is irreversible;
5. The type and quantity of residuals that will remain following treatment, considering the persistence, toxicity, mobility and propensity to bio-accumulate;
6. The degree to which treatment will reduce the inherent hazards posed by the principal threats at the Site; and
7. The degree to which the treatment processes employed will reduce the transfer of contaminants between environmental media.

E. Short-term Effectiveness

Respondent shall assess the short-term impacts of the alternatives during the construction and implementation phase, and until the objectives of a Remedial Action have been met. Factors that shall be considered, if appropriate and/or applicable, include the following:

1. Short-term risks that may be posed to the community during construction and implementation of an alternative and until the RAOs have been met;
2. Potential impacts on workers during remedial action and until the objectives of remedial action have been met, the effectiveness and reliability of protective measures;
3. Potential environmental impacts that may result from the remedial action and the effectiveness and reliability of mitigative measures during implementation and until the objectives of the remedial action have been met; and
4. Time until response action objectives are achieved

F. Implementability

Respondent shall assess the technical and administrative feasibility of implementing the alternatives. Factors that shall be considered, if appropriate and/or applicable, include the following:

1. Technical Feasibility:
   a) Degree of difficulty or uncertainty associated with construction and operation of the alternative;
   b) Expected operational reliability of the alternative;
   c) Ease of undertaking additional remedial action(s); and
   d) Ability to monitor the effectiveness of the remedy.
2. Administrative Feasibility:
   Activities needed to coordinate implementation of the remedy with state, local, and federal agencies
3. Feasibility of Obtaining Services and Materials:
   a) Capacity and location of adequate treatment, storage, and disposal services;
   b) Availability of necessary equipment and specialists and provisions to ensure any necessary additional resources;
   c) Availability of services and materials; and
   d) Availability of prospective technologies

G. Cost

The types of costs that shall be assessed, if appropriate and /or applicable, include the following:

1. Direct and indirect capital costs, including contingency and fees;
2. Annual operation and maintenance costs; and
3. Net present value of capital and O&M costs.

H. Community Acceptance

This criterion shall be addressed by Respondent throughout the conduct of each RI/FS and during the public comment period for each Proposed Plan and should include analysis of community input to identify which components of the alternatives local government and other interested persons in the community support, have reservations about, or oppose.

I. State Acceptance

Each FS Report should indicate that this criterion will be addressed in the Record of Decision following publication of the Proposed Plan and completion of the public comment period.

IV. Compare Alternatives Against Each Other and Document the Comparison of Alternatives (U.S. EPA RI/FS Guidance Sections 6.2.5 and 6.2.6)

At the conclusion of the individual analysis of alternatives, Respondent shall perform a comparative analysis between the alternatives. That is, each alternative will be compared against the others using the nine CERCLA evaluation criteria as a basis of comparison. Respondent shall document the decision making process and the results of the comparative analysis of alternatives for inclusion in the FS.

10.0 Progress Reports

Respondent shall submit written quarterly progress reports in accordance with Section XIV of the Orders (Progress Reports and Notice). The Progress Reports shall provide a summary of project activities and information for the previous quarter, including:

a) A summary description of the Work performed during the reporting period.
b) A description of any deviations from any concurred with or approved, as applicable, Work Plans or approved schedules or Milestones during the reporting period and the date of Ohio EPA's concurrence or approval, as applicable, with any such deviations;
c) A high-level summary of field and laboratory analytical data generated or received during the reporting period;
d) A summary of problems or potential problems encountered during the reporting period and any actions taken to rectify or prevent problems;
e) A summary of notable activities documented in project daily reports, inspection reports, or other reports as may be required by a Work Plan concurred with or approved, as applicable, by Ohio EPA;
f) A summary identification of the sources, types, quantities, test results, and disposition of investigation derived and other project wastes/contaminants generated or disposed of during the reporting period;
g) An overview of tasks scheduled for the next two reporting periods; and
h) Any significant community comments/concerns identified to Respondent in connection with each RI/FS.

In addition, upon request, Respondent shall provide laboratory data or additional information to Ohio EPA in accordance with the provisions of the Orders.

APPENDICES TO ATTACHMENT A (RI/FS SOW)

Appendix A – PER Outlines A-1 and A-2

Appendix B – RI/FS Outlines B-1 and B-2

Appendix C – Sampling Plan Outlines C-1 and C-2

Appendix D – Quality Assurance Elements

Appendix E – RI Report Outlines E-1 and E-2

Appendix F – Treatability Study Report Outlines F-1 and F-2

Appendix G – FS Report Outlines G-1 and G-2

Appendix H – RI/FS Submittals List

Appendix I – Overview of SOW Elements and Project Applicability

Appendix J - Acronyms

Note: In the event of any conflict between this Attachment and the Director's Final Findings and Orders to which it is appended ("Orders"), the provisions shall be construed if possible so that effect is given to both, however, if the conflict is irreconcilable, the provisions of the Orders shall prevail.

Appendix A
Preliminary Evaluation Report (PER) Outline

Outline A-1
Site-Wide Waste Disposition Evaluation Project

Note: See Sections 2.0, 2.1, 2.2, and 2.3 of Generic Statement of Work for the Portsmouth U.S. Gaseous Diffusion Plant (Decontamination and Decommissioning (D&D)) Project Remedial Investigation(s) and Feasibility Study(ies).

The PER documents the performance and results of each of the RI/FS scoping tasks, thus establishing the framework for subsequent development of the RI/FS Work Plan. The PER must address each RI/FS SOW task by one of the following three methods:

1. Indicating that the task has previously been performed and providing the results of the task and supporting documentation;
2. Indicating that the task is not relevant to the Site and providing the technical justification for omitting the task; or
3. Indicating that the task is relevant to the Site and will be addressed in the RI/FS Work Plan.

The PER will be based on information that is available when the PER is written. If insufficient information is available to adequately address any given item, the PER should acknowledge that fact and identify any additional data needs in Section 5.2 of the PER. .

1.0 INTRODUCTION
2.0 PROJECT INITIATION MEETING (PIM)

- Provide a summary of discussions during the PIM
- Present any conclusions or agreements reached during the PIM

3.0 DESCRIPTION OF CURRENT CONDITIONS

- Describe anticipated waste streams over the life of the Portsmouth project, including 1) waste anticipated to be generated during D&D activities under the Orders and 2) potential waste streams associated with environmental media cleanup activities to be conducted under the RCRA Consent Decree and for which DOE might seek exemptions under Ohio laws and regulations to allow placement in any on-Site disposal cell (OSDC) that might be constructed as a result of the Site-wide Waste Disposition Evaluation project. Include the following:

- Nature of anticipated waste streams (e.g., radioactive, mixed waste, hazardous waste, solid waste, radioactive TSCA, non-radioactive TSCA, etc.);
- Anticipated types of waste within each of the general waste stream categories (e.g., liquid or solid, rubble, equipment, etc.);
- General qualitative discussion of types of hazards typically associated with each waste stream;
- Estimated volume, including a description of the basis for the estimate.

- Include a discussion of the current disposition plan or approach based on existing available data (e.g., make waste disposition determinations on a project-by-project basis)

3.1 SITE BACKGROUND

- Provide a general description of the Portsmouth Site, its location, and nature of past operations.

3.2 EXISTING DATA ANALYSIS

- Provide any existing data and analysis relevant to any OSDC evaluation.

3.3 POTENTIAL THREAT TO HUMAN HEALTH, SAFETY AND THE ENVIRONMENT

- This Section should consist of a qualitative description of the types of hazards typically associated with the anticipated waste streams sufficient to support evaluation of potential alternatives for Site-wide waste disposition (Address in Section 5.2 of the PER whether additional data is needed to support qualitative discussion).

3.4 POTENTIAL RECEPTOR IDENTIFICATION

- This Section should identify and discuss the following potential receptors: 1) on-Site (workers) and 2) off-Site (plant neighbors and other members of the public near the Site, members of the public that could come into contact with waste streams from the Site during off-Site transportation, and environmental receptors).

4.0 PRE-INVESTIGATION EVALUATION OF REMEDIAL ALTERNATIVES

4.1 PRELIMINARY REMEDIATION GOALS

- This Section should identify and discuss the following Preliminary Remediation Goals:
  - Meet ARARS
  - Be protective of all potential receptors
  - Be cost effective

4.2 REMEDIAL ACTION OBJECTIVES

- This Section should identify and discuss the following Remedial Action Objectives:
  - Meet ARARS
  - Be protective of all potential receptors
  - Be cost effective

4.3 FEDERAL, STATE, AND LOCAL ARARS AND TBCS

- This Section should identify existing Federal, State, and Local ARARs and TBCs that are anticipated to apply to activities to be evaluated under the preliminary remedial alternatives identified for the Site-Wide Waste Disposition Evaluation project in Section 4.4 of this outline. At this stage, it is not likely that a detailed list of ARARs will be developed since the remedial alternatives will not have been fully developed. Therefore, the ARARs list will generally identify ARARs that apply to waste management and waste cell operations (e.g., siting criteria, performance standards, LDRs, WAC development, etc.). This Section will identify ARARs at the Part or Subpart level (e.g., 40 CFR 264, Subpart G, Closure and Post-closure), or at the Chapter level, as applicable. The ARARs for the Site-Wide Waste Disposition Evaluation project will be further developed and refined during performance of the RI/FS as the potential remedial alternatives are defined and finalized. The refined list of ARARs will be included in the final RI/FS Report.

4.4 PRELIMINARY REMEDIAL ALTERNATIVES

- This Section should identify and discuss existing remedial technologies, process options, and preliminary remedial alternatives to be evaluated under the Site-wide Waste Disposition Evaluation project.

4.4.1 PRELIMINARY SCREENING OF REMEDIAL TECHNOLOGIES

- Identify existing remedial technologies that could apply to activities to be evaluated under the Site-wide Waste Disposition Evaluation project.

4.4.2 PRELIMINARY SCREENING OF PROCESS OPTIONS

- Identify existing process options that could apply to activities to be evaluated under the Site-wide Waste Disposition Evaluation project.

4.4.3 DEVELOPMENT OF PRELIMINARY REMEDIAL ALTERNATIVES

- Based on the results of the activities under Sections 4.4.1 and 4.4.2 of this Section, identify preliminary remedial alternatives to be evaluated under the Site-wide Waste Disposition Evaluation project.

5.0 IDENTIFICATION OF DATA NEEDS AND DATA USAGE

5.1 ANALYSIS OF RI/FS WORK PLAN TASKS

- Identify tasks and analyses to be completed under the RI/FS Work Plan and discuss the types of data necessary to support completion of those tasks and analyses (e.g., hydrogeological data to support identification and evaluation of candidate locations for a potential on-Site waste disposal cell; development of preliminary WAC, etc.).

5.2 DATA NEEDS

- Identify any additional data needed to support completion of the RI/FS and evaluation of remedial alternatives under the Site-wide Waste Disposition Evaluation project, along with an explanation of how the data will be used. If no additional data is needed, this Section should include an affirmative statement that no more data is needed and an explanation as to why existing information is sufficient.

5.3 DATA QUALITY OBJECTIVES

- Identify and discuss Data Quality Objectives that will apply to any additional data identified as being necessary in Section 5.2 of this Outline.

Appendix A
Preliminary Evaluation Report (PER) Outline

Outline A-2
Process Buildings and Complex Facilities D&D Evaluation Project

Note: Process Buildings and Complex Facilities D&D Evaluation projects (see Sections 2.0, 2.1, 2.2, and 2.3 of Generic Statement of Work for the Portsmouth U.S. Gaseous Diffusion Plant (Decontamination and Decommissioning (D&D)) Project Remedial Investigation(s) and Feasibility Study(ies)).

The PER for each Remedial Action project documents the performance and results of each of the RI/FS scoping tasks, thus establishing the framework for subsequent development of RI/FS Work Plans. Each PER must address each RI/FS SOW task by one of the following three methods:

1. Indicating that the task has previously been performed and providing the results of the task and supporting documentation;
2. Indicating that the task is not relevant to the Remedial Action project at the Site and providing the technical justification for omitting the task; or
3. Indicating that the task is relevant to the Remedial Action project at the Site and will be addressed in the RI/FS Work Plan.

Each PER will be based on information that is available when each PER is written. If insufficient information is available to adequately address any given item, a PER should acknowledge that fact and identify any additional data needs in Section 5.2 of the PER.

1.0 INTRODUCTION
2.0 PROJECT INITIATION MEETING (PIM) FOR EACH REMEDIAL ACTION PROJECT

- Provide a summary of discussions during the PIM
- Present any conclusions or agreements reached during the PIM

3.0 DESCRIPTION OF CURRENT CONDITIONS

- Specifically identify the facilities to be addressed during the Process Buildings and Complex Facilities D&D Evaluation projects. Include a brief description of the location, current condition, and use of the facilities.

3.1 SITE BACKGROUND

- Provide a general description of the Site, its location, and nature of past operations.

3.2 EXISTING DATA ANALYSIS

- Discuss the contents of facilities, contamination and nature and estimated volume of materials present
- Include discussion of different areas or "zones" in the facilities and the types of contamination and materials anticipated to be encountered (e.g., dust that may be present in upper floors of various facilities, duct work present on the main floor of various facilities, etc.)

3.3 POTENTIAL THREAT TO HUMAN HEALTH, SAFETY AND THE ENVIRONMENT

- This Section should consist of a qualitative analysis of the risk posed to human health, safety and the environment by the release or threatened release of contaminants from the facility(ies) in a Remedial Action project area sufficient to support a decision whether to remove, reuse, or take no action to address a given facility. (Address in Section 5.2 of the PER whether additional data is necessary to support the qualitative analysis).

3.4 POTENTIAL RECEPTOR IDENTIFICATION

- This Section should identify and discuss the following potential receptors that could be exposed to contaminants if the facilities in a Remedial Action project area continue to degrade: 1) on-Site (workers) and 2) off-Site (plant neighbors, other members of the public near the Site, and environmental receptors). Pathways to be considered should include direct exposure to the buildings (and their contents) in a Remedial Action project area for Site workers, and air emissions and water emissions that could impact potential on-Site and off-Site receptors.

4.0 PRE-INVESTIGATION EVALUATION OF REMEDIAL ALTERNATIVES

4.1 PRELIMINARY REMEDIATION GOALS

This Section should identify and discuss the following Preliminary Remediation Goals:

- Meet ARARS
- Be protective of all potential receptors
- Be cost effective

4.2 REMEDIAL ACTION OBJECTIVES

This Section should identify and discuss the following Remedial Action Objectives:

- Determine whether reuse is viable (taking into account factors such as nature and extent of contamination, physical condition of facility, cost associated with bringing facilities into compliance with applicable standards and codes, past use/operations, location, any identified future need or use, etc.)
- Meet ARARS

- Be protective of all potential receptors
- Be cost effective

4.3 FEDERAL, STATE, AND LOCAL ARARS, AND TBCS

This Section should identify existing Federal, State, and Local ARARs and TBCs that are anticipated to apply to activities to be evaluated under the preliminary remedial alternatives identified for the Process and Complex Buildings D&D Evaluation projects in Section 4.4 of this outline. At this stage, it is not likely that a detailed list of ARARs will be developed since the remedial alternatives will not have been fully developed. Therefore, the ARARs list will generally identify ARARs that would apply to each Remedial Action project (e.g., waste characterization, waste management, air and water emissions criteria, etc.). This Section will identify ARARs at the Part or Subpart level (e.g., 40 CFR Part 262, Standards Applicable to Generators of Hazardous Waste). The ARARs for the Process and Complex Buildings D&D Evaluation projects will be further developed and refined during performance of the RI/FS for each Remedial Action project as the potential remedial alternatives are defined and finalized. A refined list of ARARs will be included in each final RI/FS Report.

4.4 PRELIMINARY REMEDIAL ALTERNATIVES

This Section should identify and discuss existing remedial technologies, process options, and preliminary remedial alternatives to be evaluated under the Process Buildings and Complex Facilities D&D Evaluation projects.

4.4.1 PRELIMINARY SCREENING OF REMEDIAL TECHNOLOGIES

Identify existing remedial technologies that could apply to activities to be evaluated under the Process Buildings and Complex Facilities D&D Evaluation projects.

4.4.2 PRELIMINARY SCREENING OF PROCESS OPTIONS

Identify existing process options that could apply to activities to be evaluated under the Process Buildings and Complex Facilities D&D Evaluation Projects.

4.4.3 DEVELOPMENT OF PRELIMINARY REMEDIAL ALTERNATIVES

Based on the results of the activities under Sections 4.4.1 and 4.4.2 of this Section, identify preliminary remedial alternatives to be evaluated under the Process Buildings and Complex Facilities D&D Evaluation projects.

5.0 IDENTIFICATION OF DATA NEEDS AND DATA USAGE

5.1 ANALYSIS OF RI/FS WP TASKS

Identify tasks and analyses to be completed in an RI/FS Work Plan and discuss the types of data necessary to support completion of those tasks and analyses.

5.2 DATA NEEDS

Identify any additional data needed to support completion of an RI/FS and evaluation of remedial alternatives under the Process Buildings and Complex Facilities D&D Evaluation projects, along with an explanation of how the data will be used. If no additional data is needed, this Section should include an affirmative statement that no more data is needed and an explanation as to why existing information is sufficient.

5.3 DATA QUALITY OBJECTIVES

Identify and discuss Data Quality Objectives that will apply to any additional data identified as being necessary in Section 5.2 of this Outline.

Appendix B
RI/FS Work Plan Outline

Outline B-1
Site-Wide Waste Disposition Evaluation Project

Note: Site-Wide Waste Disposition Evaluation project (see Sections 3.0 and 3.1 of Generic Statement of Work for the Portsmouth U.S. Gaseous Diffusion Plant (Decontamination and Decommissioning (D&D)) Projects Remedial Investigation(s) and Feasibility Study(ies))

1. PROJECT BACKGROUND
   1.1. SITE HISTORY AND CONTAMINANTS

- This Section should consist of the information in Sections 3.0 and 3.1 of the Preliminary Evaluation Report (PER) regarding the Site background and current Site conditions. (See Outline A-1 in Appendix A to the Generic Statement of Work for Remedial Investigation(s)/Feasibility Study(ies) for the Portsmouth U.S. Gaseous Diffusion Plant (Decontamination and Decommissioning (D&D) Project)).

1.2. SUMMARY OF EXISTING SITE DATA

- This Section should consist of the information in Section 3.2 of the PER regarding existing data analysis. (See Outline A-1 in Appendix A to the Generic Statement of Work for Remedial Investigation(s)/Feasibility Study(ies) for the Portsmouth U.S. Gaseous Diffusion Plant (Decontamination and Decommissioning (D&D) Project)).

1.3. DEFINITION OF PROBLEM

- This Section will identify the following problems to be addressed through the RI/FS Work Plan:

  - Whether sufficient data exist regarding the nature and amount of waste anticipated to be generated over the life of the Portsmouth project, including 1) waste anticipated to be generated during D&D activities under the consensual DFFO and 2) potential waste streams associated with environmental media cleanup activities to be conducted under the RCRA Consent Decree to support evaluation of Site-wide waste disposition alternatives and strategies.
  - Whether sufficient data exist to support evaluation of potential Site-wide waste disposal alternatives and strategies, including evaluation of potential on-Site waste disposition alternatives (e.g., geophysical,

hydrological, and groundwater data to support evaluation regarding existence of suitable candidate locations; data to support development of preliminary WAC, etc.).

2. PROJECT ORGANIZATION AND RESPONSIBILITIES

- This Section should provide information regarding the project organization and roles and responsibilities.

3. PROJECT SCOPE AND OBJECTIVES

- This Section should provide a high level overview of the anticipated RI/FS project scope and objectives based on the PER and Ohio EPA comments on the PER.

3.1. TASK DESCRIPTION

- Overview of the RI/FS tasks to be performed.

3.2. FEDERAL, STATE, AND LOCAL ARARS AND TBCs

- This Section shall identify existing Federal, State, and Local ARARs and TBCs that are anticipated to apply to field activities to be performed during the RI/FS, as well as ARARs that would apply to alternatives anticipated to be addressed in the RI/FS (e.g., disposal cell siting criteria such as permeability, depth to groundwater, etc.). The lists should be consistent with and at the same level as the ARARs list developed pursuant to section 4.3 of the PER (see outline A-1 contained in Appendix A to the Generic Statement of Work for the Portsmouth Gaseous Diffusion Plant (Decontamination and Decommissioning (D&D)) Project).

3.3. DQOs

- This Section should identify and discuss the DQOs for any data to be collected. The discussion should, as appropriate, reference and incorporate the Quality Assurance Plan elements (QAPP) contained in Appendix D to the Generic Statement of Work for the Portsmouth U.S. Gaseous Diffusion Plant (Decontamination and Decommissioning (D&D)) Project Remedial Investigation(s) and Feasibility Study(ies)).

3.4. PROJECT SCHEDULE

4. NON-MEASUREMENT DATA ACQUISITION

- This Section should identify and discuss any non-sampling data (e.g., physical field observation, literature searches, distance to fault-lines, etc.) that will be acquired during the RI/FS.

5. FIELD ACTIVITIES

- It is possible that not all of the field activities included in the following list will be required during the RI/FS. For those field activities conducted as part of the RI/FS, the information contained in the applicable outline section will be required.

5.1. GEOPHYSICS
- 5.1.1. RATIONALE/DESIGN
  - 5.1.1.1. METHOD
  - 5.1.1.2. STUDY AREA DEFINITION AND MEASUREMENT SPACING
- 5.1.2. FIELD PROCEDURES
  - 5.1.2.1. EQUIPMENT
  - 5.1.2.2. PRELIMINARY METHOD TESTING AND EARLY TERMINATION PROCEDURES
  - 5.1.2.3. INSTRUMENT CALIBRATION AND QC PROCEDURES
  - 5.1.2.4. FIELD PROGRESS/INTERPRETATION REPORTING
  - 5.1.2.5. MEASUREMENT POINT/GRID SURVEYING
  - 5.1.2.6. DATA PROCESSING
  - 5.1.2.7. POTENTIAL INTERPRETATION TECHNIQUES

5.2. GROUND WATER

Note: Section 5.2 will only be required if an OSDC is anticipated to be evaluated as one of the remedial alternatives.

- 5.2.1. RATIONALE/DESIGN
  - 5.2.1.1. MONITORING WELL LOCATION AND INSTALLATION
  - 5.2.1.2. SAMPLE COLLECTION AND FIELD AND LABORATORY ANALYSIS
  - 5.2.1.3. UPGRADIENT, QA/QC, AND BLANK SAMPLES AND FREQUENCY
- 5.2.2. WELL INSTALLATION
  - 5.2.2.1. DRILLING METHODS AND EQUIPMENT
  - 5.2.2.2. MATERIALS
    - 5.2.2.2.1. CASING/SCREEN/CENTRALIZERS
    - 5.2.2.2.2. FILTER PACK, BENTONITE SEAL, CEMENT/BENTONITE GROUT
    - 5.2.2.2.3. SURFACE COMPLETION
    - 5.2.2.2.4. WATER SOURCE
    - 5.2.2.2.5. DELIVERY, STORAGE, AND HANDLING OF MATERIALS
  - 5.2.2.3. INSTALLATION
    - 5.2.2.3.1. TEST HOLES
    - 5.2.2.3.2. SOIL SAMPLING AND ROCK CORING DURING DRILLING
    - 5.2.2.3.3. GEOPHYSICAL LOGGING
    - 5.2.2.3.4. BOREHOLE DIAMETER AND DEPTH
    - 5.2.2.3.5. SCREEN AND WELL CASING PLACEMENT

5.2.2.3.6. FILTER PACK PLACEMENT
5.2.2.3.7. BENTONITE SEAL
5.2.2.3.8. CEMENT/BENTONITE GROUT PLACEMENT
5.2.2.3.9. CONCRETE/GRAVEL PAD PLACEMENT
5.2.2.3.10. PROTECTIVE COVER PLACEMENT
5.2.2.3.11. WELL IDENTIFICATION
5.2.2.3.12. WELL DEVELOPMENT
5.2.2.3.13. WELL SURVEY
5.2.2.3.14. ALIGNMENT TESTING
5.2.2.3.15. IN SITU PERMEABILITY TESTING
5.2.2.4. DOCUMENTATION
5.2.2.4.1. LOGS AND WELL INSTALLATION DIAGRAMS
5.2.2.4.2. DEVELOPMENT RECORDS
5.2.2.4.3. GEOPHYSICAL LOGS
5.2.2.4.4. DECOMMISSION/ABANDONMENT RECORDS
5.2.2.4.5. PHOTOGRAPHS
5.2.2.5. WELL DECOMMISSION/ABANDONMENT
5.2.2.6. WATER LEVEL MEASUREMENT
5.2.3. DETERMINE FREE PRODUCT PRESENCE AND SAMPLING
5.2.4. AQUIFER TESTING
5.2.5. FIELD MEASUREMENT PROCEDURES AND CRITERIA
5.2.6. SAMPLING METHODS FOR GROUND WATER - GENERAL
5.2.7. SAMPLE HANDLING METHODS FOR GROUND WATER - FILTRATION
5.2.8. SAMPLE CONTAINERS AND PRESERVATION TECHNIQUES
5.2.9. FIELD QUALITY CONTROL SAMPLING PROCEDURES
5.2.10. DECONTAMINATION PROCEDURES
5.3. SUBSURFACE SOIL

Note: Section 5.3 will only be required if an OSDC is anticipated to be evaluated as one of the remedial alternatives

5.3.1. RATIONALE/DESIGN
5.3.1.1. SOIL AND ROCK BORING LOCATIONS
5.3.1.2. DISCRETE/COMPOSITE SOIL SAMPLING REQUIREMENT
5.3.1.3. SAMPLE COLLECTION AND FIELD AND LABORATORY ANALYSIS
5.3.1.4. BACKGROUND, QA/QC, AND BLANK SAMPLES AND FREQUENCY
5.3.2. FIELD PROCEDURES
5.3.2.1. DRILLING METHODS
5.3.2.2. BORING LOGS
5.3.2.3. FIELD MEASUREMENT PROCEDURES AND CRITERIA
5.3.2.4. SAMPLING FOR PHYSICAL/GEOTECHNICAL ANALYSES
5.3.2.5. SAMPLING FOR CHEMICAL ANALYSES
5.3.2.6. SAMPLE CONTAINERS AND PRESERVATION TECHNIQUES
5.3.2.7. FIELD QUALITY CONTROL SAMPLING PROCEDURES
5.3.2.8. DECONTAMINATION PROCEDURES
5.4. SURFACE WATER

Note: Section 5.4 will only be required if an OSDC is anticipated to be evaluated as one of the remedial alternatives.

5.4.1. RATIONALE/DESIGN
5.4.1.1. SURFACE WATER SAMPLE LOCATIONS
5.4.1.2. SAMPLE COLLECTION AND FIELD AND LABORATORY ANALYSIS
5.4.1.3. UPGRADIENT, QA/QC, AND BLANK SAMPLES AND FREQUENCY
5.4.2. FIELD PROCEDURES
5.4.2.1. SAMPLING METHODS FOR SURFACE WATER - GENERAL
5.4.2.2. SAMPLE HANDLING METHODS FOR SURFACE WATER - FILTRATION
5.4.2.3. FIELD MEASUREMENT PROCEDURES AND CRITERIA
5.4.2.4. SAMPLE CONTAINERS AND PRESERVATION TECHNIQUES
5.4.2.5. FIELD QUALITY CONTROL SAMPLING PROCEDURES
5.4.2.6. DECONTAMINATION PROCEDURES
5.5. OTHER MATRICES
5.5.1. RATIONALE/DESIGN
5.5.1.1. SAMPLE LOCATIONS
5.5.1.2. DISCRETE/COMPOSITE SAMPLING REQUIREMENTS
5.5.1.3. SAMPLE COLLECTION AND FIELD AND LABORATORY ANALYSIS
5.5.1.4. BACKGROUND/UPGRADIENT, QA/QC, AND BLANK SAMPLES AND FREQUENCY
5.5.2. FIELD PROCEDURES
5.5.2.1. SAMPLING METHODS
5.5.2.2. FIELD MEASUREMENT PROCEDURES AND CRITERIA
5.5.2.3. SAMPLE CONTAINERS AND PRESERVATION TECHNIQUES
5.5.2.4. FIELD QUALITY CONTROL SAMPLING PROCEDURES
5.5.2.5. DECONTAMINATION PROCEDURES
6. FIELD OPERATIONS DOCUMENTATION
6.1. DAILY QUALITY CONTROL REPORTS (QCR)
6.2. FIELD LOGBOOK AND/OR SAMPLE FIELD SHEETS
6.3. PHOTOGRAPHIC RECORDS
6.4. SAMPLE DOCUMENTATION
6.4.1. SAMPLE NUMBERING SYSTEM
6.4.2. SAMPLE LABELS AND/OR TAGS

6.4.3. CHAIN-OF-CUSTODY RECORDS
6.5. FIELD ANALYTICAL RECORDS
6.6. DOCUMENTATION PROCEDURES/DATA MANAGEMENT AND RETENTION
7. SAMPLE PACKAGING AND SHIPPING REQUIREMENTS
8. INVESTIGATION-DERIVED WASTES (IDW) OR CONTAMINANTS

- Identify waste anticipated to be generated during a Remedial Investigation and discuss how such waste will be handled and disposed.

9. FIELD ASSESSMENT PROCEDURES
9.1. CONTRACTOR QUALITY CONTROL (CQC)
9.2. SAMPLING APPARATUS AND FIELD INSTRUMENTATION CHECKLIST
10. NONCONFORMANCE/DEVIATIONS

- This Section should identify and discuss the process that will be followed to address field changes

APPENDICES
REFERENCES

Appendix B
RI/FS Work Plan Outline

Outline B-2
Process Buildings and Complex Facilities D&D Evaluation Projects

Process Buildings and Complex Facilities D&D Evaluation projects (see Sections 3.0 and 3.1 of Generic Statement of Work for the Portsmouth U.S. Gaseous Diffusion Plant (Decontamination and Decommissioning (D&D)) Project Remedial Investigation(s) and Feasibility Study(ies)).

1. PROJECT BACKGROUND
   1.1. SITE HISTORY AND CONTAMINANTS

- This Section should consist of the information in Sections 3.0 and 3.1 of the Preliminary Evaluation Report (PER) regarding the Site background and current Site conditions. (See Outline A-2 in Appendix A to the Generic Statement of Work for Remedial Investigation(s)/Feasibility Study(ies) for the Portsmouth U.S. Gaseous Diffusion Plant (Decontamination and Decommissioning (D&D)Project)).

1.2. SUMMARY OF EXISTING SITE DATA

- This Section should consist of the information in Section 3.2 of the PER for the Process Buildings and Complex Facilities Evaluation projects regarding data analysis. (See OutlineA-2 in Appendix A to the Generic Statement of Work for Remedial Investigation(s)/Feasibility Study(ies) for the Portsmouth U.S. Gaseous Diffusion Plant (Decontamination and Decommissioning (D&D)Project)).

1.3. DEFINITION OF PROBLEM

- This Section will identify the following problems to be addressed through a RI/FS Work Plan:
  - Whether sufficient data exist to support evaluation of whether to remove, reuse, or take no action to address the facilities being addressed under the Process Buildings and Complex Facilities D&D Evaluation projects (e.g., nature and extent of contamination, physical condition of facility, past use/operations, location of the Remedial Action project area, any identified future uses, etc.) and evaluation of anticipated potential remedial alternatives.

2. PROJECT ORGANIZATION AND RESPONSIBILITIES

- This Section should provide information regarding the project organization and roles and responsibilities.

3. PROJECT SCOPE AND OBJECTIVES

- This Section should provide a high level overview of the anticipated RI/FS project scope and objectives based on the PER and Ohio EPA comments on the PER.

3.1. TASK DESCRIPTION

- Overview of the RI/FS tasks to be performed for the Remedial Action project.

3.2. FEDERAL, STATE, AND LOCAL ARARS AND TBCs

- This Section shall identify existing Federal, State, and Local ARARs that are anticipated to apply to field activities to be performed during an RI/FS, as well as ARARs that would apply to alternatives anticipated to be addressed in an RI/FS (e.g., location specific ARARs, etc.). This list should be consistent and at the same level as the ARAR list developed pursuant to Section 4.3 of the PER (see outline A-2 contained in Appendix A to the Generic Statement of Work for the Portsmouth Gaseous Diffusion Plant (Decontamination and Decommissioning (D&D)) Project).

3.3 DQOs

- This Section should identify and discuss the DQOs for any data to be collected for a Remedial Action project. The discussion should, as appropriate, reference and incorporate the Quality Assurance Plan elements (QAPP) contained in Appendix D to the Generic Statement of Work for Conducting Remedial Investigation(s) and Feasibility Study(ies).

3.4 PROJECT SCHEDULE

4. NON-MEASUREMENT DATA ACQUISITION

- This Section should identify and discuss any non-sampling data (e.g., physical field observation, literature searches, etc.) that will be acquired during an RI/FS for a Remedial Action project.

5. FIELD ACTIVITIES

- It is possible that not all of the field activities included in the following list will be required during an RI/FS. For those field activities conducted as part of an RI/FS, the information contained in the applicable outline section will be required.

5.1. MATRICES
5.1.1. RATIONALE/DESIGN
5.1.1.1. SAMPLE LOCATIONS
5.1.1.2. DISCRETE/COMPOSITE SAMPLING REQUIREMENTS
5.1.1.3. SAMPLE COLLECTION AND FIELD AND LABORATORY ANALYSIS
5.1.1.4. BACKGROUND/UPGRADIENT, QA/QC, AND BLANK SAMPLES AND FREQUENCY
5.1.2. FIELD PROCEDURES
5.1.2.1. SAMPLING METHODS
5.1.2.2. FIELD MEASUREMENT PROCEDURES AND CRITERIA
5.1.2.3. SAMPLE CONTAINERS AND PRESERVATION TECHNIQUES
5.1.2.4. FIELD QUALITY CONTROL SAMPLING PROCEDURES
5.1.2.5. DECONTAMINATION PROCEDURES

6. FIELD OPERATIONS DOCUMENTATION
6.1. DAILY QUALITY CONTROL REPORTS (QCR)
6.2. FIELD LOGBOOK AND/OR SAMPLE FIELD SHEETS
6.3. PHOTOGRAPHIC RECORDS
6.4. SAMPLE DOCUMENTATION
6.4.1. SAMPLE NUMBERING SYSTEM
6.4.2. SAMPLE LABELS AND/OR TAGS
6.4.3. CHAIN-OF-CUSTODY RECORDS
6.5. FIELD ANALYTICAL RECORDS
6.6. DOCUMENTATION PROCEDURES/DATA MANAGEMENT AND RETENTION
7. SAMPLE PACKAGING AND SHIPPING REQUIREMENTS
8. INVESTIGATION-DERIVED WASTES (IDW) OR CONTAMINANTS

- Identify waste anticipated to be generated during an Remedial Investigation and discuss how such waste will be handled and disposed.

9. FIELD ASSESSMENT
9.1. CONTRACTOR QUALITY CONTROL (CQC)
9.2. SAMPLING APPARATUS AND FIELD INSTRUMENTATION CHECKLIST

9.3 NONCONFORMANCE/DEVIATIONS

- This Section should identify and discuss the process that will be followed to address field changes

APPENDICES
REFERENCES

Appendix C
Sampling Plan Outline

Outline C-1
Site-Wide Waste Disposition Evaluation Project

Site-Wide Waste Disposition Evaluation project (see Sections 3.0 and 3.2 of Generic Statement of Work for the Portsmouth U.S. Gaseous Diffusion Plant (Decontamination and Decommissioning (D&D)) Project Remedial Investigation(s) and Feasibility Study(ies))

Respondent shall prepare the Sampling Plan (SP) consistent with Sections 3.3.4.1 through 3.3.4.12 of the U.S. Army Corps of Engineers' guidance Requirements for the Preparation of Sampling and Analysis Plans, EM 200-1-3, February, 2001, using the following format or any US EPA, or US DOE guidance or sampling plans as appropriate for the completion of this task.

TITLE PAGE

TABLE OF CONTENTS

1.0 PROJECT BACKGROUND

1.1 SITE HISTORY AND CONTAMINANTS

- This Section should consist of the information in Sections 3.0 and 3.1 of the Preliminary Evaluation Report (PER) and Section 1.1 of the RI/FS Work Plan for the Site-Wide Waste Disposition Evaluation project regarding the Site background and current Site conditions. (See Outlines A-1 and B-1, respectively, in Appendices A and B to the Generic Statement of Work for Remedial Investigation(s)/Feasibility Study(ies) for the Portsmouth U.S. Gaseous Diffusion Plant (Decontamination and Decommissioning (D&D)Project)).

1.2 SUMMARY OF EXISTING SITE DATA

- This Section should consist of the information in Section 3.2 of the Preliminary Evaluation Report (PER) and Section 1.2 of the RI/FS Work Plan for the Site-Wide Waste Disposition Evaluation project regarding existing Site data. (See Outlines A-1 and B-1, respectively, in Appendices A and B to the Generic Statement of Work for Remedial Investigation(s)/Feasibility Study(ies) for the Portsmouth U.S. Gaseous Diffusion Plant (Decontamination and Decommissioning (D&D) Project)).

1.3 SITE-SPECIFIC DEFINITION OF PROBLEMS

- This Section should consist of the information in Section 1.3 of the RI/FS Work Plan for the Site-Wide Waste Disposition Evaluation project. (See

Outline B-1 in Appendix B to the Generic Statement of Work for Remedial Investigation(s)/Feasibility Study(ies) for the Portsmouth U.S. Gaseous Diffusion Plant (Decontamination and Decommissioning (D&D) Project)).

2.0 PROJECT ORGANIZATION AND RESPONSIBILITIES

- This Section should consist of the information in Section 2 of the RI/FS Work Plan for the Site-Wide Waste Disposition Evaluation project. (See Outline B-1 in Appendix B to the Generic Statement of Work for Remedial Investigation(s)/Feasibility Study(ies) for the Portsmouth U.S. Gaseous Diffusion Plant (Decontamination and Decommissioning (D&D) Project)).

3.0 PROJECT SCOPE AND OBJECTIVES

3.1 TASK DESCRIPTION

- This Section should consist of the information in Section 3.1 of the RI/FS Work Plan for the Site-Wide Waste Disposition Evaluation project. (See Outline B-1 in Appendix B to the Generic Statement of Work for Remedial Investigation(s)/Feasibility Study(ies) for the Portsmouth U.S. Gaseous Diffusion Plant (Decontamination and Decommissioning (D&D) Project)).

3.2 FEDERAL, STATE, AND LOCAL ARARS AND TBCs

- This Section should consist of the information in Section 3.2 of the RI/FS Work Plan for the Site-Wide Waste Disposition Evaluation project. (See Outline B-1 in Appendix B to the Generic Statement of Work for Remedial Investigation(s)/Feasibility Study(ies) for the Portsmouth U.S. Gaseous Diffusion Plant (Decontamination and Decommissioning (D&D) Project)).

3.3 PROJECT SCHEDULE

- This Section should consist of the information in Section 3.4 of the RI/FS Work Plan for the Site-Wide Waste Disposition Evaluation project. (See Outline B-1 in Appendix B to the Generic Statement of Work for Remedial Investigation(s)/Feasibility Study(ies) for the Portsmouth U.S. Gaseous Diffusion Plant (Decontamination and Decommissioning (D&D) Project)).

4.0 NON-MEASUREMENT DATA ACQUISITION

- This Section should consist of the information in Section 4 of the RI/FS Work Plan for the Site-Wide Waste Disposition Evaluation project. (See Outline B-1 in Appendix B to the Generic Statement of Work for Remedial Investigation(s)/Feasibility Study(ies) for the Portsmouth U.S. Gaseous Diffusion Plant (Decontamination and Decommissioning (D&D) Project)).

5.0 FIELD ACTIVITIES BY AREA OF CONCERN (AOC)

As noted in the RI/FS Work Plan Outline for the Site-Wide Waste Disposition Evaluation project, it is possible that not all of the field activities included in the following list will be required during an RI/FS. For those field activities conducted as part of an RI/FS, the information provided in the corresponding section of an RI/FS Work Plan should be carried forward to the Sampling Plan and augmented as necessary to complete the Sampling Plan.

5.1 GEOPHYSICS
5.1.1 RATIONALE/DESIGN
5.1.1.1 METHOD
5.1.1.2 STUDY AREA DEFINITION AND MEASUREMENT SPACING
5.1.2 FIELD PROCEDURES
5.1.2.1 EQUIPMENT
5.1.2.2 PRELIMINARY METHOD TESTING AND EARLY TERMINATION PROCEDURES
5.1.2.3 INSTRUMENT CALIBRATION AND QC PROCEDURES
5.1.2.4 FIELD PROGRESS/INTERPRETATION REPORTING
5.1.2.5 MEASUREMENT POINT/GRID SURVEYING
5.1.2.6 DATA PROCESSING
5.1.2.7 POTENTIAL INTERPRETATION TECHNIQUES
5.2 GROUND WATER

As noted in the RI/FS Work Plan Outline for the Site-Wide Waste Disposition Evaluation project, Section 5.2 will only be required if an OSDC is evaluated as one of the remedial alternatives. (See Outline B-1 in Appendix B to the Generic Statement of Work for Remedial Investigation(s)/Feasibility Study(ies) for the Portsmouth U.S. Gaseous Diffusion Plant (Decontamination and Decommissioning (D&D) Project)).

5.2.1 RATIONALE/DESIGN
5.2.1.1 MONITORING WELL LOCATION AND INSTALLATION
5.2.1.2 SAMPLE COLLECTION AND FIELD AND LABORATORY ANALYSIS
5.2.1.3 UPGRADIENT, QA/QC, AND BLANK SAMPLES AND FREQUENCY
5.2.2 WELL INSTALLATION
5.2.2.1 DRILLING METHODS AND EQUIPMENT
5.2.2.2 MATERIALS
5.2.2.2.1 CASING/SCREEN/CENTRALIZERS
5.2.2.2.2 FILTER PACK, BENTONITE SEAL, CEMENT/BENTONITE GROUT
5.2.2.2.3 SURFACE COMPLETION
5.2.2.2.4 WATER SOURCE
5.2.2.2.5 DELIVERY, STORAGE, AND HANDLING OF MATERIALS
5.2.2.3 INSTALLATION
5.2.2.3.1 TEST HOLES
5.2.2.3.2 SOIL SAMPLING AND ROCK CORING DURING DRILLING
5.2.2.3.3 GEOPHYSICAL LOGGING
5.2.2.3.4 BOREHOLE DIAMETER AND DEPTH
5.2.2.3.5 SCREEN AND WELL CASING PLACEMENT
5.2.2.3.6 FILTER PACK PLACEMENT
5.2.2.3.7 BENTONITE SEAL
5.2.2.3.8 CEMENT/BENTONITE GROUT PLACEMENT

5.2.2.3.9 CONCRETE/GRAVEL PAD PLACEMENT
5.2.2.3.10 PROTECTIVE COVER PLACEMENT
5.2.2.3.11 WELL IDENTIFICATION
5.2.2.3.12 WELL DEVELOPMENT
5.2.2.3.13 WELL SURVEY
5.2.2.3.14 ALIGNMENT TESTING
5.2.2.3.15 IN SITU PERMEABILITY TESTING
5.2.2.4 DOCUMENTATION
5.2.2.4.1 LOGS AND WELL INSTALLATION DIAGRAMS
5.2.2.4.2 DEVELOPMENT RECORDS
5.2.2.4.3 GEOPHYSICAL LOGS
5.2.2.4.4 DECOMMISSION/ABANDONMENT RECORDS
5.2.2.4.5 PHOTOGRAPHS
5.2.2.5 WELL DECOMMISSION/ABANDONMENT
5.2.2.6 WATER LEVEL MEASUREMENT
5.2.3 DETERMINE FREE PRODUCT PRESENCE AND SAMPLING
5.2.4 AQUIFER TESTING
5.2.5 FIELD MEASUREMENT PROCEDURES AND CRITERIA
5.2.6 SAMPLING METHODS FOR GROUND WATER – GENERAL
5.2.7 SAMPLE HANDLING METHODS FOR GROUND WATER – FILTRATION
5.2.8 SAMPLE CONTAINERS AND PRESERVATION TECHNIQUES
5.2.9 FIELD QUALITY CONTROL SAMPLING PROCEDURES
5.2.10 DECONTAMINATION PROCEDURES
5.3 SUBSURFACE SOIL

As noted in the RI/FS Work Plan Outline for the Site-Wide Waste Disposition Evaluation project, Section 5.3 will only be required if an OSDC is evaluated as one of the remedial alternatives. (See Outline B-1 in Appendix B to the Generic Statement of Work for Remedial Investigation(s)/Feasibility Study(ies) for the Portsmouth U.S. Gaseous Diffusion Plant (Decontamination and Decommissioning (D&D)Project)).

5.3.1 RATIONALE/DESIGN
5.3.1.1 SOIL AND ROCK BORING LOCATIONS
5.3.1.2 DISCRETE/COMPOSITE SOIL SAMPLING REQUIREMENT
5.3.1.3 SAMPLE COLLECTION AND FIELD AND LABORATORY ANALYSIS
5.3.1.4 BACKGROUND, QA/QC, AND BLANK SAMPLES AND FREQUENCY
5.3.2 FIELD PROCEDURES
5.3.2.1 DRILLING METHODS
5.3.2.2 BORING LOGS
5.3.2.3 FIELD MEASUREMENT PROCEDURES AND CRITERIA
5.3.2.4 SAMPLING FOR PHYSICAL/GEOTECHNICAL ANALYSES
5.3.2.5 SAMPLING FOR CHEMICAL ANALYSES
5.3.2.6 SAMPLE CONTAINERS AND PRESERVATION TECHNIQUES
5.3.2.7 FIELD QUALITY CONTROL SAMPLING PROCEDURES
5.3.2.8 DECONTAMINATION PROCEDURES
5.4 SURFACE WATER

As noted in the RI/FS Work Plan Outline for the Site-Wide Waste Disposition Evaluation project, Section 5.4 will only be required if an OSDC is evaluated as one of the remedial alternatives.

(See Outline B-1 in Appendix B to the Generic Statement of Work for Remedial Investigation(s)/Feasibility Study(ies) for the Portsmouth U.S. Gaseous Diffusion Plant (Decontamination and Decommissioning (D&D) Project)).

5.4.1 RATIONALE/DESIGN
5.4.1.1 SURFACE WATER SAMPLE LOCATIONS
5.4.1.2 SAMPLE COLLECTION AND FIELD AND LABORATORY ANALYSIS
5.4.1.3 UPGRADIENT, QA/QC, AND BLANK SAMPLES AND FREQUENCY
5.4.2 FIELD PROCEDURES
5.4.2.1 SAMPLING METHODS FOR SURFACE WATER - GENERAL
5.4.2.2 SAMPLE HANDLING METHODS FOR SURFACE WATER - FILTRATION
5.4.2.3 FIELD MEASUREMENT PROCEDURES AND CRITERIA
5.4.2.4 SAMPLE CONTAINERS AND PRESERVATION TECHNIQUES
5.4.2.5 FIELD QUALITY CONTROL SAMPLING PROCEDURES
5.4.2.6 DECONTAMINATION PROCEDURES
5.5 OTHER MATRICES
5.5.1 RATIONALE/DESIGN
5.5.1.1 SAMPLE LOCATIONS
5.5.1.2 DISCRETE/COMPOSITE SAMPLING REQUIREMENTS
5.5.1.3 SAMPLE COLLECTION AND FIELD AND LABORATORY ANALYSIS
5.5.1.4 BACKGROUND/UPGRADIENT, QA/QC, AND BLANK SAMPLES AND FREQUENCY
5.5.2 FIELD PROCEDURES
5.5.2.1 SAMPLING METHODS
5.5.2.2 FIELD MEASUREMENT PROCEDURES AND CRITERIA
5.5.2.3 SAMPLE CONTAINERS AND PRESERVATION TECHNIQUES
5.5.2.4 FIELD QUALITY CONTROL SAMPLING PROCEDURES
5.5.2.5 DECONTAMINATION PROCEDURES
6.0 FIELD OPERATIONS DOCUMENTATION
6.1 DAILY QUALITY CONTROL REPORTS (QCR)
6.2 FIELD LOGBOOK AND/OR SAMPLE FIELD SHEETS
6.3 PHOTOGRAPHIC RECORDS
6.4 SAMPLE DOCUMENTATION
6.4.1 SAMPLE NUMBERING SYSTEM
6.4.2 SAMPLE LABELS AND/OR TAGS
6.4.3 CHAIN-OF-CUSTODY RECORDS
6.5 FIELD ANALYTICAL RECORDS
6.6 DOCUMENTATION PROCEDURES/DATA MANAGEMENT AND RETENTION
7.0 SAMPLE PACKAGING AND SHIPPING REQUIREMENTS
8.0 INVESTIGATION-DERIVED WASTES (IDW) OR CONTAMINANTS
9.0 FIELD ASSESSMENT/THREE-PHASE INSPECTION PROCEDURES
9.1 CONTRACTOR QUALITY CONTROL (CQC)
9.2 SAMPLING APPARATUS AND FIELD INSTRUMENTATION CHECKLIST
10.0 NONCONFORMANCE/REMEDIAL ACTIONS

APPENDICES
REFERENCES

Appendix C
Sampling Plan Outline

Outline C-2
Process Buildings and Complex Facilities D&D Evaluation Project

Process Buildings and Complex Facilities D&D Evaluation projects (see Sections 3.0 and 3.2 of Generic Statement of Work for the Portsmouth U.S. Gaseous Diffusion Plant (Decontamination and Decommissioning (D&D)) Project Remedial Investigation(s) and Feasibility Study(ies)).

Respondent shall prepare each Sampling Plan (SP) consistent with Sections 3.3.4.1 through 3.3.4.12 of the U.S. Army Corps of Engineers' guidance Requirements for the Preparation of Sampling and Analysis Plans, EM 200-1-3, February, 2001, using the following format or any US EPA, or US DOE guidance or sampling plans as appropriate for the completion of this task.

TITLE PAGE

TABLE OF CONTENTS

1.0 PROJECT BACKGROUND

1.1 SITE HISTORY AND CONTAMINANTS

- This Section should consist of the information in Sections 3.0 and 3.1 of the Preliminary Evaluation Report (PER) and Section 1.1 of the RI/FS Work Plan for the Process Buildings and Complex Facilities D&D Evaluation projects regarding the Site background and current Site conditions. (See Outlines A-2 and B-2, respectively, in Appendices A and B to the Generic Statement of Work for Remedial Investigation(s)/Feasibility Study(ies) for the Portsmouth U.S. DOE Gaseous Diffusion Plant(Decontamination and Decommissioning (D&D) Project)).

1.2 SUMMARY OF EXISTING SITE DATA

- This Section should consist of the information in Section 3.2 of the PER and Section 1.2 of the RI/FS Work Plan for the Process Buildings and Complex Facilities D&D Evaluation projects (See Outlines A-2 and B-2, respectively, in Appendices A and B to the Generic Statement of Work for Remedial Investigation(s)/Feasibility Study(ies) for the Portsmouth U.S. DOE Gaseous Diffusion Plant(Decontamination and Decommissioning (D&D) Project)).

1.3 SITE-SPECIFIC DEFINITION OF PROBLEMS

- This Section should consist of the information in Section 1.3 of the RI/FS Work Plan for the Process Buildings and Complex Facilities D&D Evaluation projects (See Outline B-2 in Appendix B to the Generic Statement of Work for Remedial Investigation(s)/Feasibility Study(ies) for the Portsmouth U.S. Gaseous Diffusion Plant (Decontamination and Decommissioning (D&D) Project)).

2.0 PROJECT ORGANIZATION AND RESPONSIBILITIES

- This Section should consist of the information in Section 2 of the RI/FS Work Plan for the Process Buildings and Complex Facilities D&D Evaluation projects (See Outline B-2 in Appendix B to the Generic Statement of Work for Remedial Investigation(s)/Feasibility Study(ies) for the Portsmouth U.S. Gaseous Diffusion Plant (Decontamination and Decommissioning (D&D) Project)).

3.0 PROJECT SCOPE AND OBJECTIVES

- This Section should consist of the information in Section 3 of the RI/FS Work Plan for the Process Buildings and Complex Facilities D&D Evaluation projects (See Outline B-2 in Appendix B to the Generic Statement of Work for Remedial Investigation(s)/Feasibility Study(ies) for the Portsmouth U.S. Gaseous Diffusion Plant (Decontamination and Decommissioning (D&D) Project)).

3.1 TASK DESCRIPTION

- This Section should consist of the information in Section 3.1 of the RI/FS Work Plan for the Process Buildings and Complex Facilities D&D Evaluation projects (See Outline B-2 in Appendix B to the Generic Statement of Work for Remedial Investigation(s)/Feasibility Study(ies) for the Portsmouth U.S. Gaseous Diffusion Plant (Decontamination and Decommissioning (D&D) Project)).

3.2 FEDERAL, STATE, AND LOCAL ARARS AND TBCs

- This Section should consist of the information in Section 3.2 of the RI/FS Work Plan for the Process Buildings and Complex Facilities D&D Evaluation projects (See Outline B-2 in Appendix B to the Generic Statement of Work for Remedial Investigation(s)/Feasibility Study(ies) for the Portsmouth U.S. Gaseous Diffusion Plant (Decontamination and Decommissioning (D&D) Project)).

3.3 PROJECT SCHEDULE

- This Section should consist of the information in Section 3.4 of the RI/FS Work Plan for the Process Buildings and Complex Facilities D&D Evaluation projects (See Outline B-2 in Appendix B to the Generic Statement of Work for Remedial Investigation(s)/Feasibility Study(ies) for the Portsmouth U.S. Gaseous Diffusion Plant (Decontamination and Decommissioning (D&D) Project)).

4.0 NON-MEASUREMENT DATA ACQUISITION

- This Section should consist of the information in Section 4 of the RI/FS Work Plan for the Process Buildings and Complex Facilities D&D Evaluation projects (See Outline B-2 in Appendix B to the Generic Statement of Work for

Remedial Investigation(s)/Feasibility Study(ies) for the Portsmouth U.S. Gaseous Diffusion Plant (Decontamination and Decommissioning (D&D) Project)).

5.0 FIELD ACTIVITIES BY AREA OF CONCERN (AOC)

As noted in the RI/FS Work Plan Outline for the Process Buildings and Complex Facilities D&D Evaluation projects, it is possible that not all of the field activities included in the following list will be required during an RI/FS. For those field activities conducted as part of an RI/FS, the information provided in the corresponding section of an RI/FS Work Plan should be carried forward to the Sampling Plan and augmented as necessary to complete the Sampling Plan.

5.1 GEOPHYSICS
5.1.1 RATIONALE/DESIGN
5.1.1.1 METHOD
5.1.1.2 STUDY AREA DEFINITION AND MEASUREMENT SPACING
5.1.2 FIELD PROCEDURES
5.1.2.1 EQUIPMENT
5.1.2.2 PRELIMINARY METHOD TESTING AND EARLY TERMINATION PROCEDURES
5.1.2.3 INSTRUMENT CALIBRATION AND QC PROCEDURES
5.1.2.4 FIELD PROGRESS/INTERPRETATION REPORTING
5.1.2.5 MEASUREMENT POINT/GRID SURVEYING
5.1.2.6 DATA PROCESSING
5.1.2.7 POTENTIAL INTERPRETATION TECHNIQUES
5.2 MATRICES
5.2.1 RATIONALE/DESIGN
5.2.1.1 SAMPLE LOCATIONS
5.2.1.2 DISCRETE/COMPOSITE SAMPLING REQUIREMENTS
5.2.1.3 SAMPLE COLLECTION AND FIELD AND LABORATORY ANALYSIS
5.2.1.4 BACKGROUND/UPGRADIENT, QA/QC, AND BLANK SAMPLES AND FREQUENCY
5.2.2 FIELD PROCEDURES
5.2.2.1 SAMPLING METHODS
5.2.2.2 FIELD MEASUREMENT PROCEDURES AND CRITERIA
5.2.2.3 SAMPLE CONTAINERS AND PRESERVATION TECHNIQUES
5.2.2.4 FIELD QUALITY CONTROL SAMPLING PROCEDURES
5.2.2.5 DECONTAMINATION PROCEDURES
6.0 FIELD OPERATIONS DOCUMENTATION
6.1 DAILY QUALITY CONTROL REPORTS (QCR)
6.2 FIELD LOGBOOK AND/OR SAMPLE FIELD SHEETS
6.3 PHOTOGRAPHIC RECORDS
6.4 SAMPLE DOCUMENTATION
6.4.1 SAMPLE NUMBERING SYSTEM
6.4.2 SAMPLE LABELS AND/OR TAGS
6.4.3 CHAIN-OF-CUSTODY RECORDS
6.5 FIELD ANALYTICAL RECORDS
6.6 DOCUMENTATION PROCEDURES/DATA MANAGEMENT AND RETENTION
7.0 SAMPLE PACKAGING AND SHIPPING REQUIREMENTS
8.0 INVESTIGATION-DERIVED WASTES (IDW) OR CONTAMINANTS
9.0 FIELD ASSESSMENT/THREE-PHASE INSPECTION PROCEDURES
9.1 CONTRACTOR QUALITY CONTROL (CQC)
9.2 SAMPLING APPARATUS AND FIELD INSTRUMENTATION CHECKLIST
10.0NONCONFORMANCE/REMEDIAL ACTIONS

APPENDICES

REFERENCES

Appendix D

Quality Assurance Plan Elements

Quality Assurance Plan Elements For the Site Wide Waste Disposition Evaluation project and the Process Buildings and Complex Facilities D&D Evaluation projects (see Section 3.3 of the Generic Statement of Work for the Portsmouth U.S. Gaseous Diffusion Plant (Decontamination and Decommissioning (D&D)) Project Remedial Investigation(s) and Feasibility Study(ies)).

This Appendix applies both to the Site-Wide Waste Disposition Evaluation project and the Process Buildings and Complex Facilities D&D Evaluation projects.

Group A. Project Management		**Group B.** Data Generation and Acquisition		**Group C.** Assessment and Oversight	
A1	Title and Approval Sheet	B1	Sampling Process Design (Experimental Design)	C1	Assessments and Response Actions
A2	Table of Contents	B2	Sampling Methods	C2	Reports to Management
A3	Distribution List	B3	Sample Handling and custody		
A4	Project/Task Organization	B4	Analytical Methods	**Group D.** Data Validation and Usability	
A5	Problem Definition and Background	B5	Quality Control	D1	Data Review, Verification, and Validation
A6	Project/Task Description	B6	Instrument/Equipment Testing, Inspection, and Maintenance	D2	Verification and Validation Methods
A7	Quality Objectives and Criteria	B7	Instrument/Equipment Calibration and Frequency	D3	Reconciliation with User Requirements
A8	Special Training/ Certifications	B8	Inspection/Acceptance of Supplies and Consumables		
A9	Documentation and Records	B9	Non-direct Measurements		
		B10	Data Management		

Appendix E
Remedial Investigation Report Outline

Outline E-1
Site-Wide Waste Disposition Evaluation Project

Site-Wide Waste Disposition Evaluation project (See Section 6.0 of the Generic Statement of Work for the Portsmouth U.S. Gaseous Diffusion Plant (Decontamination and Decommissioning (D&D)) Project Remedial Investigation(s) and Feasibility Study(ies))

EXECUTIVE SUMMARY
1.0 INTRODUCTION
1. PURPOSE OF THE REPORT

2. SITE BACKGROUND
   1.2.1. SITE DESCRIPTION
   - This Section should consist of the information in Sections 3.0 and 3.1 of the Preliminary Evaluation Report (PER), Section 1.1 of the RI/FS Work Plan, and Section 1 of the Sampling Plan for the Site-Wide Waste Disposition Evaluation project regarding the Site background and current Site conditions. (See Outlines A-1, B-1, and C-1, respectively in Appendices A, B, and C to the Generic Statement of Work for Remedial Investigation(s)/Feasibility Study(ies) for the Portsmouth U.S. Gaseous Diffusion Plant (Decontamination and Decommissioning (D&D)Project)).

   1.2.2. SITE HISTORY
   - This Section should consist of the information in Sections 3.0 and 3.1 of the Preliminary Evaluation Report (PER), Section 1.1 of the RI/FS Work Plan, and Section 1 of the Sampling Plan for the Site-Wide Waste Disposition Evaluation project regarding the Site background and current Site conditions. (See Outlines A-1, B-1, and C-1, respectively in Appendices A, B, and C to the Generic Statement of Work for Remedial Investigation(s)/Feasibility Study(ies) for the Portsmouth U.S. Gaseous Diffusion Plant (Decontamination and Decommissioning (D&D)Project)).

   1.2.3. PREVIOUS INVESTIGATIONS
   - This Section should consist of the information in Section 3.2 of the Preliminary Evaluation Report (PER), Section 1.2 of the RI/FS Work Plan, and Section 1.2 of the Sampling Plan for the Site-Wide Waste Disposition Evaluation project regarding the Site background and current Site conditions. (See Outlines A-1, B-1, and C-1, respectively in Appendices A, B, and C to the Generic Statement of Work for Remedial Investigation(s)/Feasibility Study(ies) for the Portsmouth U.S. Gaseous Diffusion Plant (Decontamination and Decommissioning (D&D)Project)).

3. REPORT ORGANIZATION

2.0 STUDY AREA INVESTIGATION

As noted in the RI/FS Work Plan Outline and the Sampling Plan Outline for the Site-Wide Waste Disposition Evaluation Project, it is possible that not all of the field activities included in this

Section will be required during the RI/FS and included in the Sampling Plan. For those field activities conducted as part of the RI/FS, relevant information provided in the corresponding section of the RI/FS Work Plan and the Sampling Plan and additional information developed or otherwise gathered during the RI should be included in the RI Report in the appropriate Section.

This Section includes field activities conducted during the RI associated with Site characterization, including as appropriate and applicable physical and chemical monitoring of the following:

2.1.1. Surface Features (e.g., topographic mapping, natural and man-made features
2.1.2. Waste Stream Investigations
2.1.3. Meteorological Investigations
2.1.4. Surface-water and Sediment Investigations
2.1.5. Geological Investigations
2.1.6. Human Population Surveys
2.1.7. Interim Technical Memoranda - related to field investigations as revised in response to Ohio EPA comments, if any, shall be included in an appendix and summarized in this section.

3.0 PHYSICAL CHARACTERISTICS OF THE STUDY AREA

As noted in the RI/FS Work Plan Outline and the Sampling Plan Outline for the Site-Wide Waste Disposition Evaluation project, it is possible that not all of the field activities included in this Section will be required during the RI/FS and included in the Sampling Plan. For those field activities conducted as part of the RI/FS, relevant information provided in the corresponding section of the RI/FS Work Plan and the Sampling Plan and additional information developed or otherwise gathered during the RI should be included in the RI Report in the appropriate Section.

This section includes the results of field activities conducted during the RI to determine physical characteristics, including as appropriate and applicable the following:

3.1.1. Surface Features
3.1.2. Meteorology
3.1.3. Surface water hydrology
3.1.4. Geology
3.1.5. Soils
3.1.6. Hydrogeology
3.1.7. Demography and Land use
3.1.8. Ecology

4.0 POTENTIAL THREAT TO HUMAN HEALTH, SAFETY AND THE ENVIRONMENT

- This Section should include a streamlined evaluation of the potential threat to human health, safety and the environment based on the information in Sections 3.3 and 3.4 of the Preliminary Evaluation Report (PER) for the Site-Wide Waste Disposition Evaluation project (See Outline A-1 in Appendix A to the Generic Statement of Work for Remedial Investigation(s)/Feasibility Study(ies) for the Portsmouth U.S. Gaseous Diffusion Plant (Decontamination and Decommissioning (D&D) Project). See also Section 5 of the Generic Statement of Work for Remedial Investigation(s)/Feasibility Study(ies) for the Portsmouth U.S. Gaseous Diffusion Plant (Decontamination and Decommissioning (D&D) Project)). In addition to the information from Sections 3.3 and 3.4 of the PER, the RI Report should include any additional

information or analysis performed based on the results of the Site Characterization process.

4.1.1. Conclusions

4.1.2. Data Limitations and Recommendations for Future Work

- Discuss data uncertainties/limitations and identify a description of any necessary additional investigation activities.

4.1.3. Revised Remedial Action Objectives

- This Section should include the information in Section 4.2 of the Preliminary Evaluation Report (PER) for the Site-Wide Waste Disposition Evaluation project. (See Outline A-1 in Appendix A to the Generic Statement of Work for Remedial Investigation(s)/Feasibility Study(ies) for the Portsmouth U.S. Gaseous Diffusion Plant (Decontamination and Decommissioning (D&D)Project)), along with a discussion of any revisions or refinements to the Remedial Action Objectives set forth in the PER.

5.0 REFERENCES

6.0 TABLES AND FIGURES - (At least one set of figures shall be no larger than 11" x 17")

7.0 APPENDICES - Include as appropriate and applicable based on activities conducted during the Remedial Investigation. Examples may include:

1. Log Books
2. Soil Boring Logs
3. Test Pit/Trenching Logs
4. Soil Gas Probe Construction Diagrams
5. Monitoring Well Construction Diagrams
6. Sample Collection Logs
7. Private and public Well Records
8. Technical Memoranda on Field Activities
9. Analytical Data and QA/QC Evaluation Results
10. Detailed Modeling Reports

Appendix E
Remedial Investigation Report Outline

Outline E-2
Process Buildings and Complex Facilities D&D Evaluation Project

Process Buildings and Complex Facilities D&D Evaluation projects (See Section 6.0 of the Generic Statement of Work for the Portsmouth U.S. Gaseous Diffusion Plant (Decontamination and Decommissioning (D&D)) Project Remedial Investigation(s) and Feasibility Study(ies)).

EXECUTIVE SUMMARY
1.0 INTRODUCTION

1. PURPOSE OF THE REPORT

2. SITE BACKGROUND

1.2.1. SITE DESCRIPTION

- This Section should consist of the information in Sections 3.0 and 3.1 of the Preliminary Evaluation Report (PER), Section 1.1 of the RI/FS Work Plan, and Section 1 of the Sampling Plan for the Process Buildings and Complex Facilities D&D Evaluation projects regarding the Site background and current Site conditions. (See Outlines A-2, B-2, and C-2, respectively, in Appendices A, B, and C to the Generic Statement of Work for Remedial Investigation(s)/Feasibility Study(ies) for the Portsmouth U.S. Gaseous Diffusion Plant (Decontamination and Decommissioning (D&D) Project)).

1.2.2. SITE HISTORY

- This Section should consist of the information in Sections 3.0 and 3.1 of the Preliminary Evaluation Report (PER), Section 1.1 of the RI/FS Work Plan, and Section 1 of the Sampling Plan for the Process Buildings and Complex Facilities Evaluation D&D projects regarding the Site background and current Site conditions. (See Outlines A-2, B-2, and C-2, respectively in Appendices A, B, and C to the Generic Statement of Work for Remedial Investigation(s)/Feasibility Study(ies) for the Portsmouth U.S. Gaseous Diffusion Plant (Decontamination and Decommissioning (D&D) Project)).

1.2.3. PREVIOUS INVESTIGATIONS

- This Section should consist of the information in Section 3.2 of the Preliminary Evaluation Report (PER), Section 1.2 of the RI/FS Work Plan, and Section 1.2 of the Sampling Plan for the Process Buildings and Complex Facilities D&D Evaluation projects (See Outlines A-2, B-2, and C-2, respectively, in Appendices A, B, and C to the Generic Statement of Work for Remedial Investigation(s)/Feasibility Study(ies) for the Portsmouth U.S. Gaseous Diffusion Plant (Decontamination and Decommissioning (D&D)Project)).

1.2.4. PREVIOUS EMERGENCY OR INTERIM ACTIONS

3. REPORT ORGANIZATION

2.0 STUDY AREA INVESTIGATION

As noted in the RI/FS Work Plan Outline and the Sampling Plan Outline for the Process Buildings and Complex Facilities D&D Evaluation projects, it is possible that not all of the field activities included in this Section will be required during an RI/FS and included in a Sampling Plan. For those field activities conducted as part of an RI/FS, relevant information provided in the corresponding section of an RI/FS Work Plan and a Sampling Plan and additional information developed or otherwise gathered during the RI should be included in a RI Report in the appropriate Section.

This Section includes any field activities conducted during an RI associated with Site characterization, including physical and chemical monitoring of the following:

2.1.1. Surface Features (e.g., topographic mapping, natural and manmade features
2.1.2. Wastestream/Contaminant Source Investigations /Evaluations
2.1.3. Meteorological Investigations
2.1.4. Surface-water and Sediment Investigations
2.1.5. Geological Investigations
2.1.6. Human Population Surveys
2.1.7. Interim Technical Memoranda related to field investigations as revised by Ohio EPA comments, if any, shall be included in an appendix and summarized in this Section.

3.0 PHYSICAL CHARACTERISTICS OF THE STUDY AREA

As noted in the RI/FS Work Plan Outline and the Sampling Plan Outline for the Process Buildings and Complex Facilities D&D Evaluation projects, it is possible that not all of the field activities included in this Section will be required during an RI/FS and included in a Sampling Plan. For those field activities conducted as part of an RI/FS, relevant information provided in the corresponding section of an RI/FS Work Plan and the Sampling Plan and additional information developed or otherwise gathered during the RI should be included in a RI Report in the appropriate Section.

This section includes the results of any field activities conducted during an RI to determine physical characteristics, including the following:

3.1.1. Surface Features
3.1.2. Meteorology
3.1.3. Surface water hydrology
3.1.4. Geology
3.1.5. Soils
3.1.6. Hydrogeology
3.1.7. Demography and Land use
3.1.8. Ecology

4.0 POTENTIAL THREAT TO HUMAN HEALTH, SAFETY AND THE ENVIRONMENT

- This Section should include a streamlined evaluation of the potential threat to human health, safety and the environment based on the information in Sections 3.3 and 3.4 of the Preliminary Evaluation Report (PER) for the Process Buildings and Complex Facilities D&D Evaluation projects (See Outline A-2 in Appendix A to the Generic Statement of Work for Remedial Investigation(s)/Feasibility Study(ies) for the Portsmouth U.S. Gaseous Diffusion Plant (Decontamination and Decommissioning (D&D) Project). See also Section 5 of the Generic Statement of Work for Remedial

Investigation(s)/Feasibility Study(ies) for the Portsmouth U.S. Gaseous Diffusion Plant (Decontamination and Decommissioning (D&D) Project)). In addition to the information from Sections 3.3 and 3.4 of the PER, an RI Report should include any additional information or analysis performed based on the results of the Site Characterization process.

4.1.1. Conclusions

4.1.2. Data Limitations and Recommendations for Future Work

Discuss data uncertainties/limitations and identify a description of any necessary additional investigation activities.

4.1.3. Revised Remedial Action Objectives

- This Section should include the information in Section 4.2 of the Preliminary Evaluation Report (PER) for the Process Buildings and Complex Facilities D&D Evaluation projects (See Outline A-2 in Appendix A to the Generic Statement of Work for Remedial Investigation(s)/Feasibility Study(ies) for the Portsmouth U.S. Gaseous Diffusion Plant (Decontamination and Decommissioning (D&D)Project)), along with a discussion of any revisions or refinements to the Remedial Action Objectives set forth in the PER.

5.0 References

6.0 Tables and Figures (At least one set of figures shall be no larger than 11" x 17")

7.0 Appendices - include based on activities conducted during the Remedial Investigation. Examples may include:

1. Log Books
2. Soil Boring Logs
3. Test Pit/Trenching Logs
4. Soil Gas Probe Construction Diagrams
5. Monitoring Well Construction Diagrams
6. Sample Collection Logs
7. Private and public Well Records
8. Technical Memoranda on Field Activities
9. Analytical Data and QA/QC Evaluation Results
10. Detailed Modeling Reports

Appendix F
Treatability Study Report Outline

Outline F-1
Site-Wide Waste Disposition Evaluation Project

Site-Wide Waste Disposition Evaluation project (See Section 8.0 of the Generic Statement of Work for the Portsmouth U.S. Gaseous Diffusion Plant (Decontamination and Decommissioning (D&D)) Project Remedial Investigation(s) and Feasibility Study(ies)).

Upon completion of any treatability studies for the Site-Wide Waste Disposition Evaluation project, Respondent shall submit for review and approval a Treatability Study Report. The report shall be organized as follows:

1.0 INTRODUCTION
- 1.1. SITE DESCRIPTION
  - 1.1.1. SITE NAME AND LOCATION
  - 1.1.2. HISTORY OF OPERATIONS
  - 1.1.3. PRIOR REMOVAL AND REMEDIATION ACTIVITIES
- 1.2. WASTE / CONTAMINANT STREAM DESCRIPTION
  - 1.2.1. WASTE / CONTAMINANT MATRICES
  - 1.2.2. POLLUTANTS/CHEMICALS
- 1.3. TREATMENT TECHNOLOGY DESCRIPTION
  - 1.3.1. TREATMENT PROCESS AND SCALE
  - 1.3.2. OPERATING FEATURES
  - 1.3.3. TREATMENT RESIDUALS MANAGEMENT
- 1.4. PREVIOUS TREATABILITY STUDIES AT THE SITE

2.0 CONCLUSIONS AND RECOMMENDATIONS
- 2.1. CONCLUSIONS
- 2.2. RECOMMENDATIONS

3.0 TREATABILITY STUDY APPROACH
- 3.1. TEST OBJECTIVES AND RATIONALE
- 3.2. EXPERIMENTAL DESIGN AND PROCEDURES
- 3.3. EQUIPMENT AND MATERIALS
- 3.4. SAMPLING AND ANALYSIS
  - 3.4.1. WASTE/CONTAMINANT STREAM
  - 3.4.2. TREATMENT PROCESS
- 3.5. DATA MANAGEMENT
- 3.6. DEVIATIONS FROM THE WORK PLAN

4.0 RESULTS AND DISCUSSION
- 4.1. DATA ANALYSIS AND INTERPRETATION
  - 4.1.1. ANALYSIS OF WASTE/CONTAMINANT STREAM CHARACTERISTICS
  - 4.1.2. ANALYSIS OF TREATABILITY STUDY DATA
  - 4.1.3. COMPARISON TO TEST OBJECTIVES
- 4.2. QUALITY ASSURANCE/QUALITY CONTROL
- 4.3. COSTS/SCHEDULE FOR PERFORMING THE TREATABILITY STUDY
- 4.4. KEY CONTACTS

5.0 REFERENCES

APPENDICES
DATA SUMMARIES
STANDARD OPERATING PROCEDURES

Appendix F
Treatability Study Report Outline

Outline F-2
Process Buildings and Complex Facilities Evaluation Projects

Process Buildings and Complex Facilities D&D Evaluation projects (See Section 8.0 of the Generic Statement of Work for the Portsmouth U.S. Gaseous Diffusion Plant (Decontamination and Decommissioning (D&D)) Project Remedial Investigation(s) and Feasibility Study(ies)).

Upon completion of any treatability studies for the Process Buildings and Complex Facilities D&D Evaluation projects, Respondent shall submit for review and approval a Treatability Study Report. The report shall be organized as follows:

1.0 INTRODUCTION
2.0 SITE DESCRIPTION
- 2.1. SITE NAME AND LOCATION
  - 2.1.1. HISTORY OF OPERATIONS
  - 2.1.2. PRIOR REMOVAL AND REMEDIATION ACTIVITIES
  - 2.1.3. WASTE / CONTAMINANT STREAM DESCRIPTION
- 2.2. WASTE / CONTAMINANT MATRICES
  - 2.2.1. POLLUTANTS/CHEMICALS
  - 2.2.2. TREATMENT TECHNOLOGY DESCRIPTION
- 2.3. TREATMENT PROCESS AND SCALE
  - 2.3.1. OPERATING FEATURES
  - 2.3.2. TREATMENT RESIDUALS MANAGEMENT
  - 2.3.3. PREVIOUS TREATABILITY STUDIES AT THE SITE

3.0 CONCLUSIONS AND RECOMMENDATIONS
- 3.1. CONCLUSIONS
- 3.2. RECOMMENDATIONS

4.0 TREATABILITY STUDY APPROACH
- 4.1. TEST OBJECTIVES AND RATIONALE
- 4.2. EXPERIMENTAL DESIGN AND PROCEDURES
- 4.3. EQUIPMENT AND MATERIALS
- 4.4. SAMPLING AND ANALYSIS
  - 4.4.1. WASTE/CONTAMINANT STREAM
  - 4.4.2. TREATMENT PROCESS
- 4.5. DATA MANAGEMENT
- 4.6. DEVIATIONS FROM THE WORK PLAN

5.0 RESULTS AND DISCUSSION
- 5.1. DATA ANALYSIS AND INTERPRETATION
  - 5.1.1. ANALYSIS OF WASTE/CONTAMINANT STREAM CHARACTERISTICS
  - 5.1.2. ANALYSIS OF TREATABILITY STUDY DATA
  - 5.1.3. COMPARISON TO TEST OBJECTIVES
- 5.2. QUALITY ASSURANCE/QUALITY CONTROL
- 5.3. COSTS/SCHEDULE FOR PERFORMING THE TREATABILITY STUDY
- 5.4. KEY CONTACTS

6.0 REFERENCES

APPENDICES
DATA SUMMARIES
STANDARD OPERATING PROCEDURE

Appendix G
Feasibility Study (FS) Report Outline

Outline G-1
Site-Wide Waste Disposition Evaluation Project

Site-Wide Waste Disposition Evaluation project (See Section 9.0 of the Generic Statement of Work for the Portsmouth U.S. Gaseous Diffusion Plant (Decontamination and Decommissioning (D&D)) Project Remedial Investigation(s) and Feasibility Study(ies)).

The contents of a Feasibility Study Report will be based upon the information developed for the Remedial Investigation.

EXECUTIVE SUMMARY

1.0 INTRODUCTION

1.1 PURPOSE AND ORGANIZATION OF THE STUDY

1.2 SITE BACKGROUND SUMMARY

1.2.1 SITE DESCRIPTION

- This Section should consist of appropriate information in Section 1.2.1.2.1 and 1.2.1.2.2 of the Remedial Investigation Report for the Site-Wide Waste Disposition Evaluation project (See Outline E-1 in Appendix E to the Generic Statement of Work for Remedial Investigation(s)/Feasibility Study(ies) for the Portsmouth U.S. Gaseous Diffusion Plan (Decontamination and Decommissioning (D&D) Project)).

1.2.2 SITE HISTORY

- This Section should consist of appropriate information in Section 1.2.1.2.1 and 1.2.1.2.2 of the Remedial Investigation Report for the Site-Wide Waste Disposition Evaluation project (See Outline E-1 in Appendix E to the Generic Statement of Work for Remedial Investigation(s)/Feasibility Study(ies) for the Portsmouth U.S. Gaseous Diffusion Plan (Decontamination and Decommissioning (D&D) Project)).

1.2.3 RESULTS OF WASTE STREAM INVESTIGATIONS

- This Section should consist of information in Section 3.0 of the Preliminary Evaluation Report (PER) for the Site-Wide Waste Disposition Evaluation project (See Outline A-1 in Appendix E to the Generic Statement of Work for Remedial Investigation(s)/Feasibility Study(ies) for the Portsmouth U.S. Gaseous Diffusion Plan (Decontamination and Decommissioning (D&D) Project)), together with any additional information or analysis developed during a Remedial Investigation.

1.2.4 ENVIRONMENTAL SETTING

- This information will only be required if the remedial alternatives being developed for consideration under the Site-Wide Waste Disposition Evaluation project include a potential OSDC. If required, this section should present the information developed during a Remedial Investigation regarding environmental setting.

1.2.5 SUMMARY OF THREAT TO HUMAN HEALTH, SAFETY AND THE ENVIRONMENT

- This Section should consist of a streamlined evaluation of the potential threat to human health, safety and the environment based on information in Section 4.0 of the Remedial Investigation Report for the Site-Wide Waste Disposition Evaluation projects (See Outline E-1 in Appendix E to the Generic Statement of Work for Remedial Investigation(s)/Feasibility Study(ies) for the Portsmouth U.S. Gaseous Diffusion Plant (Decontamination and Decommissioning (D&D) Project)), together with any additional information or analysis developed during a Remedial Investigation.

1.3 BASIS FOR PROJECTED WASTE STREAMS AND VOLUMES AND POTENTIAL UNCERTAINTIES

- This Section should consist of information in Section 3.0 of the Preliminary Evaluation Report (PER) for the Site-Wide Waste Disposition Evaluation projects (See Outline A-1 in Appendix A to the Generic Statement of Work for Remedial Investigation(s)/Feasibility Study(ies) for the Portsmouth U.S. Gaseous Diffusion Plant (Decontamination and Decommissioning (D&D) Project)), together with any additional information or analysis developed during a Remedial Investigation.

1.4 FEDERAL, STATE, AND LOCAL ARARS AND TBCs

- This Section shall identify existing Federal, State, and Local ARARs and TBCs and consist of a detailed list of ARARs and TBCs based on information in Section 4.3 of the Preliminary Evaluation Report (PER) for the Site-Wide Waste Disposition Evaluation projects (See Outline A-1 in Appendix A to the Generic Statement of Work for Remedial Investigation(s)/Feasibility Study(ies) for the Portsmouth U.S. Gaseous Diffusion Plant (Decontamination and Decommissioning (D&D) Project)), together with any additional information, refinement, or analysis developed during the Remedial Investigation.

1.5 PRELIMINARY REMEDIATION GOALS

- This Section should consist of information in Section 4.1 of the Preliminary Evaluation Report (PER) for the Site-Wide Waste Disposition Evaluation

projects (See Outline A-1 in Appendix A to the Generic Statement of Work for Remedial Investigation(s)/Feasibility Study(ies) for the Portsmouth U.S. Gaseous Diffusion Plant (Decontamination and Decommissioning (D&D) Project)), together with any additional information, refinement, or analysis developed during a Remedial Investigation.

2.0 PRELIMINARY IDENTIFICATION AND SCREENING OF WASTE DISPOSITION ALTERNATIVES

2.1 INTRODUCTION

2.2 REMEDIAL ACTION OBJECTIVES

- This Section should consist of information in Section 4.1.3 of the Remedial Investigation Report for the Site-Wide Waste Disposition Evaluation project (See Outline E-1 in Appendix E to the Generic Statement of Work for Remedial Investigation(s)/Feasibility Study(ies) for the Portsmouth U.S. Gaseous Diffusion Plant (Decontamination and Decommissioning (D&D) Project)), together with any additional information, refinement or analysis developed during a Remedial Investigation.

2.3 INITIAL IDENTIFICATION AND PRELIMINARY SCREENING OF WASTE DISPOSITION ALTERNATIVES (*includes AAD*)

- This Section is based on the Alternative Array Document described in Section 7.2 of the Generic Statement of Work for Remedial Investigation(s)/Feasibility Study(ies)for the Portsmouth Gaseous Diffusion Plant (Decontamination and Decommissioning (D&D)) Project. The AAD should be attached as an appendix to a Feasibility Study Report.

- This Section should also take into account information in Sections 4.4, 4.4.1, 4.4.2, and 4.4.3 of the Preliminary Evaluation Report (PER) for the Site-Wide Waste Disposition Evaluation project (See Outline A-1 in Appendix A to the Generic Statement of Work for Remedial Investigation(s)/Feasibility Study(ies) for the Portsmouth U.S. Gaseous Diffusion Plant (Decontamination and Decommissioning (D&D) Project)), together with any additional information or analysis developed during a Remedial Investigation.

2.4 DRAFT WAC

This Section will include a draft WAC if an alternative being considered includes a potential OSDC.

3.0 FINAL DEVELOPMENT OF ALTERNATIVES

- 3.1 DEVELOPMENT OF ALTERNATIVES TO BE PRESENTED IN PROPOSED PLAN AND RECORD OF DECISION
- 3.2 SUMMARY OF ACTION-SPECIFIC ARARS FOR EACH ALTERNATIVE
- 3.3 DETAILED DESCRIPTION OF ALTERNATIVES

4.0 DETAILED ANALYSIS OF ALTERNATIVES

- 4.1 CRITERIA FOR ANALYSIS

    - The nine CERCLA evaluation criteria will be used to evaluate the remedial alternatives carried forward into the detailed analysis.

- 4.2 INDIVIDUAL ANALYSIS OF ALTERNATIVES
- 4.3 COMPARATIVE ANALYSIS OF ALTERNATIVES

5.0 ATTACHMENTS

6.0 REFERENCES

Appendix G
Feasibility Study (FS) Report Outline

Outline G-2
Process Buildings and Complex Facilities D&D Evaluation Projects

Process Buildings and Complex Facilities D&D Evaluation projects (See Section 9.0 of the Generic Statement of Work for the Portsmouth U.S. Gaseous Diffusion Plant (Decontamination and Decommissioning (D&D)) Project Remedial Investigation(s) and Feasibility Study(ies)).

The contents of a Feasibility Study Report will be based upon the information developed for the Remedial Investigation.

EXECUTIVE SUMMARY

1.0 INTRODUCTION

1.1 PURPOSE AND ORGANIZATION OF THE STUDY

1.2 SITE BACKGROUND

1.2.1 SITE DESCRIPTION

- This Section should consist of appropriate information in Section 1.2.1.2.1 and 1.2.1.2.2 of the Remedial Investigation Report for the Process Buildings and Complex Facilities D&D Evaluation projects (See Outline E-2 in Appendix E to the Generic Statement of Work for Remedial Investigation(s)/Feasibility Study(ies) for the Portsmouth U.S. Gaseous Diffusion Plant (Decontamination and Decommissioning (D&D) Project)).

1.2.2 SITE HISTORY

- This Section should consist of appropriate information in Section 1.2.1.2.1 and 1.2.1.2.2 of the Remedial Investigation Report for the Process Buildings and Complex Facilities Evaluation projects (See Outline E-2 in Appendix E to the Generic Statement of Work for Remedial Investigation(s)/Feasibility Study(ies) for the Portsmouth U.S. Gaseous Diffusion Plant (Decontamination and Decommissioning (D&D) Project)).

1.2.3 CONDITION AND CONTENT OF BUILDINGS

- This Section should consist of information in Section 3.0 of the Preliminary Evaluation Report (PER) for the Process Buildings and Complex Facilities Evaluation projects (See Outline A-2 in Appendix A to the Generic Statement of Work for Remedial Investigation(s)/Feasibility Study(ies) for the Portsmouth U.S. Gaseous Diffusion Plant (Decontamination and Decommissioning (D&D) Project)).

1.2.4 POTENTIAL EXPOSURE ROUTES AND RECEPTORS

- This Section should consist of information in Section 3.4 of the Preliminary Evaluation Report (PER) for the Process Buildings and Complex Facilities Evaluation projects (See Outline A-2 in Appendix A to the Generic Statement of Work for Remedial Investigation(s)/Feasibility Study(ies) for the Portsmouth U.S. Gaseous Diffusion Plant (Decontamination and Decommissioning (D&D) Project)) together with additional information, refinement or analysis developed during a remedial Investigation.

1.2.5 SUMMARY OF THREAT TO HUMAN HEALTH, SAFETY AND ENVIRONMENT

- This Section should consist of a streamlined evaluation of the potential threat to human health, safety and the environment based on information in Section 4.0 of the Remedial Investigation Report for the Process Buildings and Complex Facilities Disposition Evaluation projects (See Outline E-2 in Appendix E to the Generic Statement of Work for Remedial Investigation(s)/Feasibility Study(ies) for the Portsmouth U.S. Gaseous Diffusion Plant (Decontamination and Decommissioning (D&D) Project)), together with any additional information or analysis developed during a Remedial Investigation.

1.3 BASIS FOR ANTICIPATED BUILDING CONDITION AND CONTENT AND IDENTIFICATION OF POTENTIAL UNCERTAINTIES

- This Section should consist of information in Section 3.2 of the Preliminary Evaluation Report (PER) for the Process Buildings and Complex Facilities Evaluation projects (See Outline A-2 in Appendix A to the Generic Statement of Work for Remedial Investigation(s)/Feasibility Study(ies) for the Portsmouth U.S. Gaseous Diffusion Plant (Decontamination and Decommissioning (D&D) Project)).

1.4 APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS

- This Section should consist of a detailed list of ARARs based on information in Section 4.3 of the Preliminary Evaluation Report (PER) for the Process Buildings and Complex Facilities Evaluation projects (See Outline A-2 in Appendix A to the Generic Statement of Work for Remedial Investigation(s)/Feasibility Study(ies) for the Portsmouth U.S. Gaseous Diffusion Plant (Decontamination and Decommissioning (D&D) Project)).

1.5 PRELIMINARY REMEDIATION GOALS

- This Section should consist of information in Section 4.1 of the Preliminary Evaluation Report (PER) for the Process Buildings and Complex Facilities Evaluation projects (See Outline A-2 in Appendix A to the Generic Statement of Work for Remedial Investigation(s)/Feasibility Study(ies) for the Portsmouth U.S. Gaseous Diffusion Plant (Decontamination and Decommissioning (D&D)

Project)) together with any additional information or analysis developed during a Remedial Investigation.

2.0 PRELIMINARY IDENTIFICATION AND SCREENING OF REMEDIAL ALTERNATIVES

2.1 INTRODUCTION

2.2 REMEDIAL ACTION OBJECTIVES

- This Section should consist of information in Section 4.1.3 of the Remedial Investigation Report for the Process Buildings and Complex Facilities Evaluation projects (See Outline E-2 in Appendix E to the Generic Statement of Work for Remedial Investigation(s)/Feasibility Study(ies) for the Portsmouth U.S. Gaseous Diffusion Plant (Decontamination and Decommissioning (D&D) Project)), together with any additional information or analysis developed during a Remedial Investigation.

2.3 INITIAL IDENTIFICATION AND PRELIMINARY SCREENING OF ALTERNATIVES (includes AAD)

- This Section is based in the Alternative Array Document described in Section 7.2 of the Generic Statement of Work for Remedial Investigation(s)/Feasibility Study(ies) for the Portsmouth Gaseous Diffusion Plant (Decontamination and Decommissioning (D&D)) Project. The AAD should be attached as an appendix to a Feasibility Study Report.

- This Section also should take into account information in Section 4.4 of the Preliminary Evaluation Report (PER) for the Process Buildings and Complex Facilities Evaluation projects (See Outline A-2 in Appendix A to the Generic Statement of Work for Remedial Investigation(s)/Feasibility Study(ies) for the Portsmouth U.S. Gaseous Diffusion Plant (Decontamination and Decommissioning (D&D) Project)), together with any additional information or analysis developed during a Remedial Investigation.

3.0 FINAL DEVELOPMENT OF ALTERNATIVES

- 3.1 DEVELOPMENT OF ALTERNATIVES TO BE PRESENTED IN THE PROPOSED PLAN AND RECORD OF DECISION
- 3.2 SUMMARY OF ACTION-SPECIFIC ARARS FOR EACH ALTERNATIVE
- 3.3 DETAILED DESCRIPTION OF ALTERNATIVES

4.0 DETAILED ANALYSIS OF ALTERNATIVES

- 4.1 CRITERIA FOR ANALYSIS

    - The nine CERCLA evaluation criteria will be used to evaluate the remedial alternatives carried forward into the detailed analysis.

- 4.2 INDIVIDUAL ANALYSIS OF ALTERNATIVES
- 4.3 COMPARATIVE ANALYSIS OF ALTERNATIVES

5.0 ATTACHMENTS

6.0 REFERENCES

Appendix H

RI/FS Submittals List

1) Pre-investigation Evaluation Report (PER) (Appendix A)
2) RI/FS Work Plan and Supporting Documents (Appendix B)
    a) Sampling Plan (Appendix C)
    b) Quality Assurance Project Plan (Appendix D)
    c) Health and Safety Plan

3) Documentation of A Streamlined Human Health Risk Assessment Assumptions Analysis

4) Remedial Investigation Report (Appendix E)

5) Refined Remedial Action Objectives ITM (as may be required)

6) Alternatives Array Document Feasibility Study Report (Appendix F)

7) Interim Technical Memoranda (as may be required)

8) Treatability Study Work Plan (as may be required)

9) Treatability Study Report (as may be required, Appendix G)

10) Interim Action Work Plan (Addendum to RI/FS Work Plan, as may be required)

11) Other addendum(a) to the RI/FS Work Plan and Supporting Documents (as may be required)

12) Quarterly Progress Reports

Appendix I

Overview of SOW Elements and Project Applicability

The following table presents a summary of RI/FS SOW elements and applicability to the Site-wide Waste Disposition Evaluation and Process Buildings and Complex Facilities D&D Evaluation projects.

RI/FS Element	Project			
	Site-wide Waste Disposition Evaluation Project		Process Buildings and Complex Facilities D&D Evaluation Projects	
	SOW Section(s)	Appendix Outline	SOW Section(s)	Appendix Outline
RI/FS Scoping	2.0	NA	2.0	NA
Pre-investigation Evaluation Report	2.1, 2.2	A-1	2.1, 2.2	A-2
Project Initiation Meeting / Site Visit	2.3	NA	2.3	NA
RI/FS Work Plan	3.1	B-1	3.1	B-2
Sampling Plan	3.2	C-1	3.2	C-2
Quality Assurance Plan	3.3	D	3.3	D
Health and Safety Plan	3.4	NA	3.4	NA
Waste/Site Characterization	3.5.1	NA	3.5.2	NA
Environmental Setting	4.0	NA	NA	NA
Threat to Human Health, Safety and the Environment	5.0	NA	5.0	NA
RI Report	6.0	E-1	6.0	E-2
Developing and Screening Alternatives	7.0	NA	7.0	NA
Treatability Study Work Plan	8.0	NA	8.0	NA
Treatability Study Report	8.0	F-1	8.0	F-2
Feasibility Study Report	9.0	G-1	9.0	G-2
Progress Reports	10.0	NA	10.0	NA

Appendix J

Acronyms

AAD	Alternatives Array Document
AOC	Administrative Order on Consent
ARAR	Applicable or Relevant and Appropriate Requirement
ASTM	American Society for Testing and Materials
BOD	Biological Oxygen Demand
CDI	Chronic Daily Intake
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
COPEC	Chemical of Potential Ecological Concern
CSM	Conceptual Site Model
D&D	Decontamination and Decommissioning
DQOs	Data Quality Objectives
EPC	Exposure Point Concentration
FS	Feasibility Study
HASP	Health and Safety Plan
HI	Hazard Index
HQ	Hazard Quotient
ITM	Interim Technical Memoranda
NCP	National Contingency Plan, Final Rule (40 CFR Part 300)
NIOSH	National Institute for Occupational Safety and Health
NPDES	National Pollution Discharge Elimination System
Ohio EPA	Ohio Environmental Protection Agency
O&M	Operation and Maintenance
Orders	Director's Final Findings and Orders to which these Attachments are appended
OSHA	Occupational Safety and Health Administration
PDF	Portable Document Format
PER	Pre-investigation Evaluation Report
PRGs	Preliminary Remediation Goals
QAPP	Quality Assurance Project Plan
QA/QC	Quality Assurance/Quality Control
RAAD	Risk Assessment Assumptions Document
RAGS	Risk Assessment Guidance for Superfund
RAOs	Remedial Action Objectives
RCRA	Resource Conservation and Recovery Act
RfC	Reference Concentration
RfD	Reference Dose
RI	Remedial Investigation
RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision
SCS	Soil Conservation Service
SF	Slope Factor
SP	Sampling Plan
SOP	Standard Operating Procedure
SOW	Statement of Work
TBC	To Be Considered criteria
TOC	Total Organic Carbon

TSCA	Toxic Substances Control Act
U.S. ACE	United States Army Corps of Engineers
U.S. EPA	United States Environmental Protection Agency
WAC	Waste Acceptance Criteria

Attachment B

GENERIC STATEMENT OF WORK
FOR
REMEDIAL DESIGN AND REMEDIAL ACTION

FOR THE U.S. DOE PORTSMOUTH GASEOUS DIFFUSION PLANT

SITE-WIDE WASTE DISPOSITION EVALUATION PROJECT

AND

PROCESS BUILDINGS AND COMPLEX FACILITIES DECONTAMINATION AND DECOMMISSIONING EVALUATION PROJECTS

Note: In the event of any conflict between this Attachment and the Director's Final Findings and Orders to which it is appended ("Orders"), the provisions shall be construed if possible so that effect is given to both, however, if the conflict is irreconcilable, the provisions of the Orders shall prevail.

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1 PURPOSE

The Generic Statement of Work for Remedial Design/Remedial Action (RD/RA SOW) sets forth the generic process requirements for designing and implementing the selected remedy(ies) for the Site-Wide Waste Disposition Evaluation project and the Process Buildings and Complex Facilities Decontamination and Decommissioning Evaluation projects listed in Attachment H to these Orders. Further guidance for performing the RD/RA work tasks may be found in the U.S. EPA Superfund Remedial Design and Remedial Action Guidance document (OSWER Directive 9355.0-4A). All applicable regulatory requirements pertaining to the selected remedy(ies) and RD/RA activities shall be followed.

Ohio EPA shall provide support and oversight, as applicable, of Respondent's activities throughout the RD/RA. The Respondent shall support the Ohio EPA's initiatives and conduct of activities related to the implementation of oversight activities.

2 DESCRIPTION OF THE REMEDIAL ACTION/ PERFORMANCE STANDARDS

Performance standards and specifications of the major components of each Remedial Action project to be designed and implemented by the Respondent are described below. Performance standards shall include cleanup standards, standards of control, quality criteria, and other requirements, criteria or limitations as established in the Record(s) of Decision, this SOW, and the Orders to which it is attached.

List each component of the remedy as an individual subsection (e.g., 2.1 Security Fence, 2.2 RCRA Compliant Cap, etc.). Each component should be described in sufficient detail so that an assessment can be made of the adequacy of the component.

OR

See the US DOE Record of Decision for description of the remedial action components and associated performance standards.

3 SCOPE OF THE REMEDIAL DESIGN(s) AND REMEDIAL ACTION(s)

Each Remedial Design/Remedial Action (RD/RA) shall consist of seven principal tasks described below. Each task shall be completed and required documentation shall be submitted in accordance with any approved Milestones and schedules established in the Orders and in each RD/RA Work Plan concurred with or approved, as applicable, by Ohio EPA. All Work related to this SOW shall be performed by the Respondent in accordance with the Orders and in a manner consistent with the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) as amended, 42 USC 9601, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 C.F.R. Part 300 (1990), and other applicable federal and state rules and regulations.

Task Summary

1) Task I: RD/RA Work Plan
   a) Access
   b) Pre-Design Studies Plan
   c) Regulatory Compliance Plan
2) Task II: Pre-Design Studies
3) Task III: Remedial Design

a) General Requirements for Plans and Specifications

b) Design Phases

c) Estimated Cost for Remedial Action

d) Remedial Action Implementation Plan

e) Community Relations Support

4) Task IV: Remedial Action Construction

a) Preconstruction Inspection and Conference

b) Design Changes During Construction

c) Remedial Action Construction Completion and Acceptance

d) Community Relations Support

5) Task V: Five-Year Reviews,

a) Task VI: Operation and Maintenance/Performance Monitoring,

b) Reporting during Operation and Maintenance,

c) Completion of Remedial Action Report

6) Task VI: Operation and Maintenance/Performance Monitoring

7) Task VII: Reporting Requirements

a) Quarterly Progress Reports during RD and RA Construction

b) Summary of Reports and Submittals

3.1 TASK I: RD/RA WORK PLAN

The Respondent shall submit a Work Plan for each Remedial Design and Remedial Action (RD/RA) project to Ohio EPA for review and concurrence or approval, as applicable, which presents the overall strategy for performing the design, construction, operation, maintenance and monitoring of the Remedial Action (RA) projects. With respect to the Site-Wide Disposition Evaluation project, if an on-Site disposal cell (OSDC) is selected as the remedy, the Work Plan shall incorporate an overall strategy for an OSDC. With respect to the Process Buildings and Complex Facilities projects, each Work Plan shall incorporate an overall strategy for each building or group of buildings addressed in a ROD. Each Work Plan shall provide a detailed discussion of the specific tasks necessary to implement a selected remedy, including a description of the technical approach, personnel requirements, plans, specifications, any permit requirements, and other reports described in this SOW.

Each Work Plan shall document the responsibilities and authority of all organizations and key personnel involved with the development and implementation of the RD/RA. The qualifications of key personnel directing the RD/RA tasks, including contractor personnel, shall be described.

Each Work Plan shall include Milestones and schedules in accordance with the Orders for the development of an RD and implementation of an RA, including schedules and any approved Milestones

for the submittal of the document packages for Ohio EPA review and meetings for discussion of the submittals. An RD/RA Work Plan must be reviewed and concurred with or approved, as applicable, by Ohio EPA prior to initiation of field activities or proceeding with an RD.

Specific requirements to be addressed by each RD/RA Work Plan are described in the following sections.

3.1.1 Site Access

All access agreements necessary to implement each RD/RA project shall be obtained by Respondent prior to the initiation of any activities to be conducted under a Work Plan, as described in the Orders. Access agreements shall extend for the duration of all remedial activities and shall include allowances for all operation and maintenance considerations and State oversight activities. Each Work Plan shall describe the activities necessary to satisfy these requirements.

3.1.2 Pre-Design Studies Plan

The Respondent shall develop a plan to complete the following pre-design studies, which are required to design and fully implement each Remedial Action project.

Describe any pre-design studies required to support the RD/RA.

The Pre-Design Studies Plan (PDSP), as a component of each RD/RA Work Plan, will identify and describe, in detail, activities necessary to conduct the pre-design studies identified above. A plan shall include sufficient sampling, testing, and analyses to develop quantitative performance, cost and design data for the selected remedy, and, with respect to the Site-Wide Waste Disposition Evaluation Project, if an OSDC is selected as a remedy, any design parameters or other design information developed during the evaluation of an OSDC alternative in the feasibility study shall be included.

At the discretion of the Site Coordinator for Ohio EPA, a PDSP may be submitted for review and comment in accordance with the Orders under separate cover from a Work Plan. Each PDSP must be concurred with or approved, as applicable, by Ohio EPA prior to initiation of associated field activities or treatability studies.

Each Pre-Design Studies Plan shall include, as necessary, a Sampling Plan (SP), a Quality Assurance Project Plan (QAPP), a Health and Safety Plan (HSP), plans for any pre-design studies or evaluations necessary to refine the WAC, and plans for any studies or evaluations necessary to ensure WAC attainment. Section 4.0 of this SOW describes the required content of supporting plans such as the Sampling Plans, Quality Assurance Project Plans and Health and Safety Plans.

Prior to development of each Pre-Design Studies Plan, there shall be a meeting of the Site Coordinator for Ohio EPA and the Project Manager representing the Respondent to discuss scope, objectives, quality assurance and quality control issues, resources, reporting, communication channels, any Milestones, schedule, and roles of personnel involved. Other personnel representing the Respondent and Ohio EPA, who may be needed to fully discuss the issues involved, should also participate in this meeting. Guidance documents to be consulted in developing the Pre-Design Studies Plan include U.S. EPA's Guidance for Conducting Remedial Investigations and Feasibility Studies (EPA/540/G-89/004, October 1988) and Guide for Conducting Treatability Studies Under CERCLA (EPA/540/2-89/058, December 1989), as well as others listed in Appendix A, attached to this SOW.

Pre-design studies will be conducted as described under Task II.

3.1.3 Regulatory Compliance Plan

It shall be the responsibility of the Respondent to ensure compliance with the substantive requirements of all applicable regulatory state and federal requirements for the RD/RA activities to be conducted at the Site or satisfy the requirements of 42 U.S.C. Section 9621 and 40 CFR Section 300.430 pertaining to waiver or non-attainment of ARARs. The Respondent shall develop a Regulatory Compliance Plan to identify and to satisfy all applicable state and federal laws and regulations for each RD/RA project. The Regulatory Compliance Plan will include the following information:

When DOE proposes a response action regulated under CERCLA that, in the absence of CERCLA section 121(e)(1) and the NCP, would require a federal or State permit, DOE shall include in the submittal:

a) Identification of each permit which would otherwise be required.

b) Identification of the substantive standards, requirements, criteria, or limitations which would have had to have been met to obtain each such permit.

c) Explanation of how the response action proposed will meet the standards, requirements, criteria, or limitations identified in subparagraph b immediately above.

The Respondent shall identify in each Regulatory Compliance Plan any inconsistencies between any regulatory requirements or permits that may affect any of the Work required. Each Regulatory Compliance Plan shall also include an analysis of the possible effects such inconsistencies may have on the remedial action, recommendations for addressing the inconsistencies, and supporting rationale for the recommendations. The Regulatory Compliance Plan shall be submitted to the Ohio EPA as part of the RD/RA Work Plan.

3.2 TASK II: PRE-DESIGN STUDIES

The Respondent shall schedule and detail the work necessary to accomplish the pre-design studies described in the Pre-Design Studies Plan submitted with each RD/RA Work Plan. The requirements of this section shall apply to studies undertaken to refine the understanding of the potential threat to human health, safety and the environment in each RD/RA project area at the Site.

For any such studies required, the Respondent shall furnish all services, including necessary field work, materials, supplies, labor, equipment, supervision, and data interpretation. Sufficient sampling, testing, and analyses shall be performed to provide the technical data necessary to support a remedial design effort with the goal of optimizing the required treatment and/or disposal operations and systems.

The Respondent shall submit a draft Pre-Design Studies report for Ohio EPA's review and comment when the investigation and/or testing required by a Pre-Design Studies Plan are complete. Each draft report shall present investigation/testing data and results along with an analysis of the implications those results have on an RD/RA, including a cost analysis, when appropriate. A draft report shall be submitted prior to the preliminary design submittal consistent with the schedule and any Milestones approved as part of the concurred with or approved, as applicable, RD/RA Work Plan, unless otherwise agreed to by Respondent and Ohio EPA. Any changes to Milestones proposed by Respondent shall be governed by Paragraph 21 of the Orders. The Respondent will address Ohio EPA comments on each Pre-Design Studies report in accordance with the provisions of the Orders governing review of submissions. Respondent shall then submit a final report, including any corrections or modifications, with the Preliminary Design Report, unless otherwise specified in a concurred with or approved, as applicable, by RD/RA Work Plan or unless otherwise agreed to by Respondent and Ohio EPA.

3.2.1 Reporting Requirements for Groundwater Data (If an OSDC is selected as a component of a remedial action selected under the Site Wide Waste Disposition Evaluation Project)

When a Remedial Action project selects an OSDC as a component of that project, the Respondent shall submit all groundwater data and monitoring well construction data. The Respondent shall implement a groundwater monitoring program as identified in the RD Work Plan or as required by Ohio EPA. Respondent shall submit all groundwater data and monitoring well construction data on an agreed upon form of electronic media using the most current version of the U.S. EPA developed Ground Water Information Tracking System (GRITS) database software. GRITS is free software, and can be obtained by calling EPA office of Research and Development (ORD), at 513-569-7562, and asking for Document # EPA/625/11-91/002. Respondent shall submit one copy of each round of sampling data on printed paper in addition to the agreed upon electronic media format. The printed copy will be the official copy of the data.

3.3 TASK III: REMEDIAL DESIGN

The Respondent shall prepare and submit to Ohio EPA, in accordance with the Orders, any Milestones, schedules, construction plans, specifications and supporting plans to implement each Remedial Action project as defined in the Purpose and Description of the Remedial Action sections of this SOW, the Record(s) of Decision and the Orders.

3.3.1 General Requirements for Plans and Specifications

The construction plans and specifications for each Remedial Action project shall comply with the standards and requirements outlined below. Examples of construction activities can include activities such as construction of facilities or treatment or containment systems, as well as removal of buildings, structures, or other facilities. All design documents shall be clear, comprehensive and organized. Supporting data and documentation sufficient to define the functional aspects of the Remedial Action shall be provided. Taken as a whole, the design documents shall demonstrate that the Remedial Action will be capable of meeting all objectives of the Record of Decision including any performance standards.

The plans and specifications shall include the following:

1) Discussion of the design strategy and design basis including:

   a) Compliance with requirements of the Record of Decision the Orders and all applicable regulatory requirements or, where appropriate, satisfaction of the requirements of 42 U.S.C. Section 9621 and 40 CFR Section 300.430 pertaining to waiver or non-attainment of ARARs;

   b) Minimization of environmental and public health impacts;

2) Discussion of the technical factors of importance including:

   a) Use of currently accepted environmental control measures and technologies;

   b) The constructability of the design;

   c) Use of currently accepted construction practices and techniques;

3) Description of the assumptions made and detailed justification for those assumptions;

4) Discussion of possible sources of error and possible operation and maintenance problems;

5) Detailed drawings of the proposed design including, as appropriate:

a) Qualitative flow sheets;

b) Quantitative flow sheets;

6) Tables listing equipment and specifications;

7) Tables giving material and energy balances;

8) Relevant Appendices, which may include:

a) Sample calculations (one example presented and clearly explained for significant or unique calculations);

b) Derivation of equations essential to understanding the report;

c) Results of laboratory tests, field tests and any additional studies.

3.3.2 Design Phases

The Respondent shall meet when necessary with Ohio EPA representatives to discuss design issues. The design for each Remedial Action project shall be developed and submitted in the phases outlined below to facilitate progression toward an acceptable and functional design.

Submittals shall be made consistent with any approved Milestones and schedule in the concurred with or approved, as applicable, RD/RA Work Plan.

3.3.2.1 Preliminary Design

A Preliminary Design, which reflects the design effort at approximately 30% completion, shall be submitted to Ohio EPA for each Remedial Action project for review and comment, unless otherwise agreed to by Respondent and Ohio EPA. Any extensions to Milestones proposed by Respondent shall be governed by Paragraph 21 of the Orders. At this stage of the design process, the Respondent shall have verified existing conditions at the Remedial Action project area at the Site that may influence the design and implementation of a selected RA. Each Preliminary Design shall demonstrate that the basic technical requirements of a Remedial Action and any substantive requirements of ARARs have been addressed or the requirements of 42 U.S.C. Section 9621 and 40 CFR Section 300.430 pertaining to waiver or non-attainment of ARARs have been satisfied. A Preliminary Design shall be reviewed to determine if the final design will provide an operable and usable RA that will be in compliance with all response objectives and either meet all substantive requirements of ARARs or satisfy the requirements of 42 U.S.C. Section 9621 and 40 CFR Section 300.430 pertaining to waiver or non-attainment of ARARs. Each Preliminary Design submittal shall include the following elements, at a minimum:

- Preliminary plans, drawings and sketches, including design calculations as well as, with respect to the Site-Wide Waste Disposition Evaluation project, the WAC, including any updates or changes, if an OSDC is selected as part of the remedial alternative;

- Results of treatability studies and additional sampling as it may apply to the Remedial Action project;

- Design assumptions and parameters, including design restrictions, process performance criteria, appropriate unit processes for treatment systems, and expected removal or treatment efficiencies for both the process and waste (concentration and volume);

- Proposed cleanup verification methods, including compliance with ARARs or satisfaction of the

requirements of 42 U.S.C. Section 9621 and 40 CFR Section 300.430 pertaining to waiver or non-attainment of ARARs;

- Outline of design specifications;
- Proposed siting/locations of processes/construction activity;
- Expected long-term operation and monitoring requirements;
- Real estate and easement requirements;
- Preliminary construction planning schedule.

The supporting data and documentation necessary to define the functional aspects of an RA shall be submitted with each Preliminary Design. The technical specifications shall be outlined in a manner that anticipates the scope of the final specifications. The Respondent shall include design calculations with a Preliminary Design completed to the same degree as the design they support.

If a Pre-Design Studies Report required under Task II has not been submitted prior to submission of the Preliminary Design, it shall be submitted with the Preliminary Design. Any Ohio EPA comments or suggested revisions or amendments to a Preliminary Design after its review of a Preliminary Design shall be addressed in the Intermediate Design phase, or other design phase as agreed upon by the Parties, in accordance with the provisions of the Orders governing review of submissions.

Intermediate Design

Complex project designs necessitate preparation and Ohio EPA review of design documents between the preliminary and prefinal design phases. The Respondent shall submit intermediate design plans and specifications to Ohio EPA for review and comment when a design is approximately 60% complete consistent with the schedule and in compliance with any Milestones approved as part of a concurred with or approved, as applicable, RD/RA Work Plan. Any extensions to Milestones proposed by Respondent shall be governed by Paragraph 21 of the Orders. All plans, specifications, design analyses and design calculations submitted to Ohio EPA shall reflect the same degree of completion. The Respondent will address Ohio EPA comments on each Intermediate Design and make any revisions or amendments in accordance with the provisions of the Orders governing review of submissions.

The Intermediate Design submittal shall include the following components:

- Design Plans and Specifications;
- Draft Construction Quality Assurance Plan;
- Draft Performance Standard Verification Plan;
- Draft Operation and Maintenance Plan;
- Health and Safety Plan.

The designs for each Remedial Action project shall include a Construction Quality Assurance Plan, a Performance Standard Verification Plan, an Operation and Maintenance Plan, and a Health and Safety Plan. Each Performance Standard Verification Plan shall include a Sampling Plan and a Quality Assurance Project Plan, as necessary. Section 4.0 of this SOW describes the required content of the supporting plans. A final Pre-Design Studies Report shall also be included, if it has not already been submitted. Any Ohio EPA comments or suggested revisions or amendments to an Intermediate Design

after its review of the Intermediate Design shall be addressed in the Prefinal Design phase, or other design phase as agreed upon by the Parties, in accordance with the provisions of the Orders governing review of submissions.

3.3.2.2 Prefinal Design

The Respondent shall submit a Prefinal Design for each Remedial Action project for Ohio EPA review consistent with the approved schedule and any Milestones in a concurred with or approved, as applicable, RD/RA Work Plan when the design effort is at least 90% complete, unless otherwise agreed to by Respondent and Ohio EPA. Any extensions to Milestones proposed by Respondent shall be governed by Paragraph 21 of the Orders. The Respondent shall ensure that modifications resulting from Ohio EPA's prior review of any related Pre-design Studies Reports, technical memoranda, any Preliminary and Intermediate Designs, and the QAPP and HSP are incorporated into each Prefinal Design submittal in accordance with the provisions of the Orders governing review of submissions. A Prefinal Design submittal shall consist of the following components, at a minimum:

- Design Plans and Specifications;
- Construction Quality Assurance Project Plan;
- Performance Standard Verification Plan;
- Operation and Maintenance Plan;
- Remedial Action Implementation Plan;
- Cost Estimate;
- Health and Safety Plan.

General correlation between drawings and technical specifications is a basic requirement of any set of working construction plans and specifications. Before submitting the Remedial Design specifications with a Prefinal Design, the Respondent shall: (1) Coordinate and cross-check the specifications and drawings; (2) Cornplete the proofing of the edited specifications and required cross-checking of all drawings and specifications.

The Respondent shall include necessary information regarding operation and maintenance of any treatment systems in an Operation and Maintenance Plan.

Ohio EPA will provide written comments to the Respondent indicating any desired revisions to a Prefinal Design. Comments may be provided as a narrative report and/or markings on design plan sheets. The Respondent will address Ohio EPA comments on a Prefinal Design and make any revisions to the plans and specifications in accordance with the provisions of the Orders governing review of submissions. At the discretion of the Site Coordinator, the Respondent shall also return to Ohio EPA all marked-up prints as evidence that the plans have been completely checked. A Prefinal Design submittal may serve as a Final Design, if Ohio EPA has no further comments and notifies the Respondent that a Prefinal Design has been concurred with or approved, as applicable, as a Final Design. Any Ohio EPA comments or suggested revisions or amendments after its review of a Prefinal Design shall be addressed in a Final Design, in accordance with the provisions of the Orders governing review of submissions.

3.3.2.3 Final Design

Following incorporation of any modifications resulting from Ohio EPA's review of a Prefinal Design submittal for each Remedial Action project, the Respondent shall submit to Ohio EPA a Final Design

which is 100% complete consistent with the approved schedule and Milestones pursuant to the Orders, which are described in the RD/RA Work Plan. (As noted in Section 3.3.2.3 of this SOW, a Prefinal Design submittal may serve as a Final Design, if Ohio EPA has no further comments and notifies the Respondent that a Prefinal Design has been concurred with or approved, as applicable, as a Final Design.)

A Final Design submittal shall include all the components of the Prefinal Design and each of those components shall be complete. At the discretion of the Site Coordinator, any marked-up prints or drawings, which Ohio EPA may have provided by way of comments on previous design submittals will be returned to Ohio EPA, if they have not already been returned.

Ohio EPA will provide written comments to the Respondent indicating any desired corrections or changes to the Final Design submittal documents. The Respondent will address Ohio EPA comments on the Final Design submittals and make any corrections and changes in accordance with the provisions of the Orders governing review of submissions. Revised Final Design documents shall then be submitted in their entirety to Ohio EPA for review and concurrence or approval, as applicable, as the completed Final Design in accordance with the provisions of the Orders governing review of submissions. The quality of the Final Design documents for each Remedial Action project should be such that the Respondent would be able to include them in a bid package and invite contractors to submit bids for the construction project.

3.3.3 Estimated Cost of the Remedial Action

The Respondent shall refine the cost estimate developed in the Feasibility Study to reflect the detailed plans and specifications being developed for each Remedial Action project. A cost estimate shall include both capital and operation and maintenance costs for the entire project. To the degree possible, cost estimates for operation and maintenance of any treatment system shall be based on the entire anticipated duration of the system's operation. A final estimate shall be based on final concurred with or approved, as applicable, plans and specifications. It shall include any changes made as a result of Ohio EPA input during Final Design review, and reflect current prices for labor, material and equipment.

A refined cost estimate shall be submitted by the Respondent with a Prefinal Design and a final cost estimate shall be included with a Final Design submittal.

3.3.4 Remedial Action Implementation Plan

The Respondent shall develop a Remedial Action Implementation Plan (RAIP) for each Remedial Action project to help coordinate implementation of the various components of an RA. It shall include a schedule for an RA that identifies timing for initiation and completion of all critical path tasks and identify any Milestones consistent with an approved RD/RA Work Plan schedule. A Remedial Action Implementation Plan is a management tool which should address the following topics:

1) Activities necessary to fully implement each of the components of the RA;

2) How these activities will be coordinated to facilitate construction/ implementation consistent with the approved schedule and any Milestones;

3) Potential major scheduling problems or delays, which may impact overall schedule and any Milestones;

4) Lines of communication for discussing and resolving problems, should they arise;

5) Common and/or anticipated remedies to overcome potential problems and delays.

A Remedial Action Implementation Plan shall be submitted with each Prefinal Design for review and comment by Ohio EPA. A final plan and RA project schedule shall be submitted with each Final Design for review and concurrence or approval, as applicable.

3.3.5 Community Relations Plan

The Community Relations Plan will be updated as appropriate to address the RD/RA process for each selected remedy. If a PIM is held, the Community Relations Plan shall be discussed at that time, and any appropriate amendments to the Community Relations Plan shall be identified.

3.4 TASK IV: REMEDIAL ACTION CONSTRUCTION

Following Ohio EPA concurrence or approval, as applicable, on a Final Design submittal, the Respondent shall implement the designed Remedial Action(s) for each Remedial Action project in accordance with the plans, specifications, Construction Quality Assurance Project Plan, Performance Standard Verification Plan, Health and Safety Plan, Remedial Action Implementation Plan, Quality Assurance Project Plan, and Sampling Plan included in a concurred with or approved, as applicable, Final Design. Implementation shall include the activities described in the following sections.

3.4.1 Preconstruction Inspection and Conference

The Respondent shall participate in a preconstruction inspection and conference for each Remedial Action project with Ohio EPA to accomplish the following:

- Review methods for documenting and reporting inspection data;
- Review methods for distributing and storing documents and reports;
- Review work area security and safety protocol;
- Discuss any appropriate modifications to the Construction Quality Assurance Plan to ensure that Site specific considerations are addressed. The final CQAP shall be submitted to Ohio EPA at this time, if it has not already been submitted;
- Introduce key construction contractor, engineering and project management personnel and review roles during construction activities;
- Conduct a Remedial Action project area walk-around, if requested by either Respondent or Ohio EPA, to verify that the design criteria, plans, and specifications are understood and to review material and equipment storage locations.

The Respondent shall schedule the preconstruction inspection and conference to be held within 10 days of the award of the construction contract. The preconstruction inspection and conference shall be documented by a designated person and minutes shall be transmitted by the Respondent to all parties in attendance.

3.4.2 Design Changes During Construction

During construction, unforeseen Site conditions, changes in estimated quantities of required construction materials and other problems associated with each Remedial Action project are likely to develop. Such changing conditions may require either major or minor changes to a concurred with or approved, as applicable, final design. Certain design changes will require concurrence or approval, as applicable, of Ohio EPA prior to implementation to ensure that the intent and scope of a Remedial Action is maintained. Changes to the Remedial Design which require Ohio EPA written concurrence or

approval, as applicable, prior to implementation include:

- Those that involve the deletion or addition of a major component of a concurred with or approved, as applicable, remedy (e.g., changing one treatment system for another; deleting any designed layer of a multi-layer cap);
- Those that result in a less effective treatment for wastes;
- Any changes that may result in an increase of the exposure to chemicals of concern and/or risk to human health, safety or the environment as compared to the goals for the completed Remedial Action as stated in the Orders and this SOW;
- Those that result in a significant delay in the completion of the RA;
- Any other changes that alter or are outside of the scope or intent of a concurred with or approved, as applicable, remedial design.

Ohio EPA shall be notified of other changes for each Remedial Action project made during construction through inspection reports and quarterly progress reports.

In some cases, the NCP will require issuance of an Explanation of Significant Differences or modification of a Record of Decision as a result of changes that would alter the intent or scope of an RA.

3.4.3 Remedial Action Construction Completion and Acceptance

As the construction of each Remedial Action project nears completion, the following activities and reporting shall be completed by the Respondent to ensure proper project completion, approval or concurrence, as applicable, closeout and transition to the operation and maintenance/ monitoring phase.

3.4.3.1 Prefinal Construction Conference

Within seven days of making a preliminary determination that Remedial Action project construction is complete, the Respondent shall provide written notification to Ohio EPA and a prefinal construction conference shall be held with the construction contractor(s) to discuss procedures and requirements for each Remedial Action project completion and closeout. The Respondent shall have responsibility for making arrangements for the conference. Participants should include the Project Manager for the Respondent, the Site Coordinator for Ohio EPA, the current DOE prime contractor(s) with primary responsibility for construction of the Remedial Action, other contractors specifically identified by Ohio EPA, and the Remedial Design agent (person(s) who designed the remedy), if requested.

A list of suggested items to be covered at the conference includes, but is not limited to the following:

- Final Operation and Maintenance (O&M) Plan submission, if it has not been submitted already;
- Construction cleanup responsibilities;
- Demobilization activities;
- Security requirements for project transfer;
- Pre-final inspection schedule;

- Operator training.

The prefinal conference shall be documented by a designated person and minutes shall be transmitted to all parties in attendance by the Respondent.

3.4.3.2 Prefinal Inspection

Following a prefinal construction conference, a prefinal inspection of each Remedial Action project will be conducted. The prefinal inspection will be led by the Respondent with assistance from the Ohio EPA.

The prefinal inspection will consist of a walk-through inspection of the entire Remedial Action project area, as applicable. The completed Remedial Action project work will be inspected to determine whether the project is complete and consistent with the contract documents and the concurred with or approved, as applicable, RD/RA Work Plan. Any outstanding deficient or incomplete construction items should be identified and noted during the inspection.

When the RA includes construction of a treatment system, the system start-up and "shakedown" shall have been completed as part of each Remedial Action project. "Shakedown" is considered to be the initial operational period following start-up during which adjustments are made to ensure that the performance standards for the system are reliably being achieved. The contractor shall have verified and/or certified that the equipment has performed to meet the purpose and intent of the contract specifications. Retesting shall have been successfully completed where deficiencies were revealed. Such shakedown may take several months. Determination of remedy effectiveness for other types of Remedial Actions will be based on the Performance Standard Verification Plan (PSVP).

If construction of major components of a Remedial Action is performed in distinct phases or under separate contracts due to the complex scope of the Remedial Action project, it may be appropriate to conduct the prefinal inspections of those components separately. The approved RAIP should identify those projects and components that should be handled in that manner.

Upon completion of a prefinal inspection, an inspection report shall be prepared by the Respondent and submitted to Ohio EPA with the minutes from the prefinal conference. A copy of the report will be provided to all parties in attendance at the inspection. The report will outline the outstanding construction items, actions required to resolve those items, completion date for those items and a date for the final inspection. Ohio EPA will review each inspection report and notify the Respondent of any disagreements with it.

3.4.3.3 Final Inspection

Within seven days following completion of any outstanding construction items, the Respondent shall provide written notification to Ohio EPA and schedule a final inspection for each Remedial Action project. A final inspection will be conducted by Ohio EPA with assistance from the party having primary responsibility for construction inspection, if requested by Ohio EPA.

The final inspection will consist of a walk-through inspection of the Remedial Action project area focusing on the outstanding construction items identified during the prefinal inspection. A Prefinal Inspection Report shall be used as a checklist. The contractor's demobilization activities shall have been completed, except for equipment and materials required to complete the outstanding construction items. If any items remain deficient or incomplete, the inspection shall be considered a prefinal inspection requiring another prefinal inspection report and final inspection.

As with a prefinal inspection, it may be appropriate to conduct final inspections of major components of

a Remedial Action separately. Such projects and components should be identified in an approved Remedial Action Implementation Plan.

3.4.3.4 Construction Completion Report and Certification

Upon satisfactory completion of a final inspection, a Construction Completion Report for each Remedial Action project shall be prepared by the Respondent and submitted to Ohio EPA within 30 days after the final inspection. The report shall include the following elements as applicable:

1) A brief description of the outstanding construction items from the prefinal inspection and an indication that the items were satisfactorily resolved;

2) A synopsis of the work defined in the concurred with or approved, as applicable, RD/RA Work Plan and the Final Design and certification that this work was performed;

3) An explanation of any changes to the work defined in the concurred with or approved, as applicable, RD/RA Work Plan and Final Design, including as-built drawings of the constructed RA facilities, and why the changes were necessary or beneficial for the project;

4) Certification that the constructed RA or component of the RA is operational and functional.

The Construction Completion Report will be reviewed by Ohio EPA. If Ohio EPA believes based on its review that corrections or amendments to the report are necessary, Ohio EPA will provide comments to the Respondent. Respondent will address Ohio EPA comments and make any revisions in accordance with the provisions of the Orders governing review of submissions. Ohio EPA will provide Respondent with written notice of Ohio EPA's concurrence or approval, as applicable, of the Construction Completion Report in accordance with the provisions of the Orders governing review of submissions.

3.4.4 Community Relations Support

Ohio EPA shall provide the Respondent support for the Respondent's community relations program during Remedial Action implementation as described in Section 3.3.5.

3.5 TASK V: FIVE-YEAR REVIEWS

At Remedial Action project areas of the Site where contaminants will remain at levels that will not permit unrestricted use, a review will be conducted no less frequently than once every five years to ensure that each remedy continues to be protective of human health, safety and the environment. This is known as the "five-year review". The Respondent shall complete Five-Year Review Reports no less often than every five years after the initiation of each Remedial Action or until contaminant levels being addressed by the Remedial Action in question allow for unrestricted use of the Remedial Action project area of the Site. The Five Year Review requirement should be evaluated with respect to contamination addressed in Record(s) of Decision pursuant to the Orders. In the case of buildings, facilities, structures, etc. which are being decontaminated and decommissioned under CERCLA, five year reviews will not be required where such buildings, facilities, structures, etc. are totally removed. Further guidance for performing five-year review work tasks may be found in the U.S. EPA OSWER Directive 9355.7-02, Structure and Components of Five-Year Reviews. The more specific purpose of the reviews is two-fold: (1) to confirm that the Remedial Action as specified in the Record of Decision and as implemented continues to be effective in protecting human health, safety and the environment (e.g., a remedy is operating and functioning as designed, institutional controls are in place and are protective); and (2) to evaluate whether original cleanup levels remain protective of human health, safety and the environment. A further objective is to evaluate the scope of operation and maintenance, the frequency of repairs, changes in monitoring indicators, costs at the project area of the Site, and how each of these relates to

protectiveness.

Fifteen months prior to the due date for completion of each five-year review, the Respondent shall meet with Ohio EPA to discuss the requirements of the five-year review. Each review must be completed within five years following the initiation of the Remedial Action. The scope and level of review will depend on conditions at the project area of the Site. The scoping effort should include a determination by the Site Coordinator and Respondent as to whether available monitoring data and other documentation will be sufficient to perform the five-year review or whether a sampling effort will be a necessary component of the review. Within three months of the meeting, the Respondent shall develop and submit a Five-Year Review Work Plan to Ohio EPA that shall describe, at a minimum, the following activities and documentation as relevant to the RA:

I. Document Review

A. Background Information

1. Record of Decision

2. Record of Decision Summary

3. Administrative or Judicial Order for RD/RA

4. Completion of Remedial Action Report

B. Design Review

C. Maintenance and Monitoring

1. O&M Manual

2. O&M Reports

3. Groundwater Monitoring Plan as it applies to the Site-Wide Waste Disposition Evaluation project and Process Buildings and the Complex Facilities Decontamination and Decommissioning (D&D) Evaluation projects

4. Monitoring Data and Information

II. Standards Review

A. Specific performance standards required by the Record of Decision.

B. Changing Standards

1. Laws and Regulations applicable to conditions and activities at the Site

III. Interviews

A. Background Information

1. Previous Staff Management

2. Nearest Neighbors, Respondent

B. Local Considerations

1. State Contacts

2. Local Government Contacts

C. Operational Problems

1. Plant Superintendent

2. O&M Contractors

IV. Site Inspection/Technology Review

A. Performance and Compliance

1. Visual Inspection

B. Off-Site Considerations

C. Recommendations

V. Report

A. Background

1. Introduction

2. Remedial Objectives

3. Review of Applicable Laws and Regulations

B. Site Conditions

1. Summary of Site Visit

2. Areas of Noncompliance

C. Recommendations

1. Technology Recommendations

2. Statement on Protectiveness

3. Timing and Scope of Next Review

4. Implementation Requirements

If sampling and analysis of environmental samples is required under a five-year review, the Respondent is required to prepare and submit with the Five-Year Review Work Plan other supporting plans. Supporting plans may include a Quality Assurance Project Plan, Field Sampling Plan and Health and Safety Plan. The purpose and content of these supporting plans are discussed in Section 4 of this SOW. A Five-Year Review Work Plan must be reviewed and concurred with or approved, as applicable, by Ohio EPA in accordance with the provisions of the Orders governing review of submissions prior to initiation of field activities or proceeding with the five-year review.

Each Five-Year Review Report will be reviewed by Ohio EPA. Ohio EPA will provide comments to Respondent if Ohio EPA believes that corrections or amendments to the report are necessary. The

Respondent will address Ohio EPA comments and make any revisions in accordance with the provisions of the Orders governing review of submissions.

3.6 TASK VI: OPERATION AND MAINTENANCE/PERFORMANCE MONITORING

The Respondent shall implement performance monitoring and operation and maintenance procedures as required by an approved Performance Standard Verification Plan and concurred with or approved, as applicable, Operation and Monitoring (O&M) Plan for each Remedial Action project once it is demonstrated that the RA components are operational and functional.

3.6.1 Reporting During Operation and Maintenance

3.6.1.1 Operation and Maintenance Sampling and Analysis Data

Unless otherwise specified in a concurred with or approved, as applicable, O&M Plan, sampling, analysis, and system performance data for any treatment system or other engineering systems required to be monitored during the O&M Phase shall be submitted by Respondent to Ohio EPA on a quarterly basis for each Remedial Action project. These quarterly submittals will form the basis for the annual progress report described below in Section 3.6.1.2

3.6.1.2 Progress Reports During Operation and Maintenance

The Respondent shall prepare and submit annual progress reports during the operation and maintenance/performance monitoring phase of each Remedial Action project. When appropriate, a RD/RA Work Plan may specify progress reports during O&M to be submitted more frequently.

The O&M progress reports shall contain the same information as required for the quarterly progress reports for the RD and RA construction phases, as specified in Section 3.6.1 of this SOW. They shall also include an evaluation of the effectiveness of any treatment and engineering systems in meeting the cleanup standards, performance standards and other goals of an RA as defined in the Orders, this SOW, the RD/RA Work Plan and an approved Final Design.

3.6.2 Completion of Remedial Action Report

At the completion of each Remedial Action project, Respondent shall submit a Completion of Remedial Action Report to Ohio EPA. An RA shall be considered complete when all of the goals, performance standards and cleanup standards for the RA as stated in the Record of Decision, this SOW, and the concurred with or approved, as applicable, Final Design (including changes approved during construction) have been met. If an OSDC is selected as a component of a Remedial Action selected under the Site-Wide Waste Disposition Evaluation project, the Completion of Remedial Action Report shall also include documentation of WAC compliance. The report shall document that the project is consistent with the design specifications, and that the RA was performed to meet or exceed all required goals, cleanup standards and performance standards. Each report shall include, but not be limited to the following elements, as relevant:

1) Synopsis of the Remedial Action and certification of the design and construction;

2) Listing of the cleanup and performance standards as established in the Record of Decision and the Orders, any amendments to those standards with an explanation for adopting the amendments;

3) Summary and explanation of any changes to the concurred with or approved, as applicable, plans and specifications. An explanation of why the changes were necessary should be included and, where necessary, Ohio EPA concurrence or approval, as applicable, of the

changes should be documented;

4) Summary of operation of treatment systems including monitoring data, indicating that the Remedial Action met or exceeded the performance standards or cleanup criteria;

5) Explanation of any monitoring and maintenance activities to be undertaken at the project area of the Site in the future as outlined in Section 3.0 of this RD/RA SOW.

3.7 TASK VII: REPORTING REQUIREMENTS

The Respondent shall prepare and submit work plans, design plans, specifications, and reports as set forth in Tasks I through V of this SOW to document the design, construction, operation, maintenance, and performance monitoring of each Remedial Action project. Quarterly progress reports shall be prepared, as described below, to enable the Ohio EPA to track project progress.

3.7.1 Quarterly Progress Reports during RD and RA Construction

The Respondent shall at a minimum provide Ohio EPA with quarterly progress reports during the design and construction phases of each Remedial Action project containing the information listed below. When appropriate, a RD/RA Work Plan shall specify progress reports to be submitted more frequently.

1) A description of the work performed during the reporting period and estimate of the percentage of the RD/RA completed;

2) Summaries of all findings and sampling during the reporting period;

3) Summaries of all changes made in the RD/RA during the reporting period, indicating consultation with Ohio EPA and approval by Ohio EPA of those changes, when necessary;

4) Summaries of all notable problems or potential problems encountered during the reporting period, including those which delay or threaten to delay completion of any project Milestones with respect to the approved schedule;

5) Summaries of actions taken and being taken to rectify problems;

6) Summaries of actions taken to achieve and maintain cleanup standards and performance standards;

7) Changes in key personnel during the reporting period;

8) Projected work for the next reporting period;

9) Summaries of daily reports, inspection reports, sampling data, laboratory/ monitoring data, etc.; and

10) Any significant community comments/concerns identified to Respondent in connection with the RD and RA construction.

In addition, upon request, Respondent shall provide laboratory data or additional information to Ohio EPA in accordance with the provisions of the Orders.

3.7.2 Summary of Reports and Submittals

A summary of the information reporting requirements contained in this RD/RA SOW is presented below. Note that the list of required reports will depend upon each final ROD and the scope of the selected

Remedial Action.

- Draft RD/RA Work Plan
    - Health and Safety Plan (HSP)
    - Regulatory Compliance Plan
- Final RD/RA Work Plan
    - HSP
    - Regulatory Compliance Plan
- Draft Pre-Design Studies Plan
- WAC
    - Quality Assurance Project Plan (QAPP)
    - Sampling Plan (SP)
- Final Pre-Design Studies Plan
    - QAPP
    - FSP
- Pre-Design Studies Reports - Draft
- Preliminary Design Documents
- Pre-Design Studies Reports - Final
- Intermediate Design Documents
    - Draft Construction Quality Assurance Plan (CQAP)
    - Draft Performance Standard Verification Plan (PSVP)
    - Draft O & M Plan
    - Health and Safety Plan
- Prefinal Design Documents
    - CQAP
    - PSVP
    - O& M Plan
    - Draft Remedial Action Implementation Plan (RAIP)
    - Health and Safety Plan

- Final Design Documents including the approved WAC
    - CQAP
    - PSVP
    - O& M Plan
    - Draft RAIP
    - Health and Safety Plan
    - Preconstruction Inspection and Conference Report
    - Quarterly Progress Reports during RD/RA
    - Notification of Preliminary Completion of Construction
    - Final O & M Plan
    - Prefinal Inspection Report
    - Notification for Final Inspection
    - Construction Completion Report
    - O& M Sampling Data
    - Progress Reports during O&M/Performance Monitoring period
    - Completion of Remedial Action Report
    - Five-Year Review Work Plan
    - Five-Year Review Report

4 CONTENT OF SUPPORTING PLANS

The documents listed in this section shall be prepared and submitted as outlined in Section 3.0 of this SOW to support the activities necessary to design and fully implement each Remedial Action project. These supporting documents include a Quality Assurance Project Plan (QAPP), a Field Sampling Plan (FSP), a Health and Safety Plan (HSP), a Construction Quality Assurance Plan (CQAP) and a Performance Standard Verification Plan (PSVP). The following sections describe the required contents of each of these supporting documents.

4.1 QUALITY ASSURANCE PROJECT PLAN

The Respondent shall prepare a Site-specific Quality Assurance Project Plan (QAPP) to cover sample analysis and data handling based on guidance provided by Ohio EPA. Refer to the list of Ohio EPA and U.S. EPA guidance documents in Appendix C attached to the Orders.

A QAPP shall be developed for any sampling and analysis activities to be conducted as predesign studies and submitted with each Pre-Design Studies Plan for Ohio EPA review and concurrence or approval, as applicable.

During the Remedial Design phase the Respondent shall review all Remedial Design information and

modify or amend the QAPP developed for a Pre-Design Studies Plan, as necessary, to address the sampling and analysis activities to be conducted during implementation of the Remedial Action, including activities covered by a PSVP and O&M Plan. An amended QAPP shall be submitted with the Intermediate Design documents for review and comment by Ohio EPA. Respondent will address Ohio EPA comments in accordance with the provisions of the Orders governing review of submissions. A final Quality Assurance Project Plan shall be submitted for concurrence with or approval, as applicable, of the Final Design documents. Upon agreement of the Site Coordinator, the Respondent may submit only the amended portions of the QAPP developed for a PDSP with the Intermediate, Pre-Final and Final Design documents.

The Respondent shall schedule and attend a pre-QAPP meeting with representatives of Ohio EPA to discuss the scope and format of the QAPP. For Remedial Action projects where the Site Coordinator and Project Manager agree that a pre-QAPP meeting is not needed, this meeting may be omitted. The QAPP shall, as appropriate, include:

1) Data Collection Strategy - The strategy section of the QAPP shall include but not be limited to the following:

   a) Description of the types and intended uses for the data, relevance to remediation or restoration goals, and the necessary level of precision, accuracy, and statistical validity for these intended uses;

   b) Description of methods and procedures to be used to assess the precision, accuracy and completeness of the measurement data;

   c) Description of the rationale used to assure that the data accurately and precisely represent a characteristic of a population, variation of physical or chemical parameters throughout the Site, a process condition or an environmental condition. Factors which shall be considered and discussed include, but are not limited to:

      i) Environmental conditions at the time of sampling;

      ii) Sampling design (including number, location and distribution);

      iii) Potential exposure pathways, or receptors;

      iv) Representativeness of selected analytical parameters;

      v) Representativeness of testing procedures and conditions; and

      vi) Independence of background or baseline from Site influences.

   d) Description of the measures to be taken to assure that the following data sets can be compared quantitatively or qualitatively to each other:

      i) RD/RA data collected by the Respondent over some time period;

      ii) RD/RA data generated by an outside laboratory or consultant employed by the Respondent versus data collected by the Respondent;

      iii) Data generated by separate consultants or laboratories over some time period not necessarily related to the RD/RA effort; and

      iv) Data generated by Ohio EPA or by an outside laboratory or consultant employed by Ohio EPA.

e) Details relating to the schedule and information to be provided in quality assurance reports. These reports should include but not be limited to:

i) Periodic assessment of measurement data accuracy, precision and completeness;

ii) Results of performance audits;

iii) Results of system audits;

iv) Significant quality assurance problems and recommended solutions; and

v) Resolutions of previously stated problems.

2) Sample Analysis - The Sample Analysis section of the Quality Assurance Project Plan shall specify the following:

a) Chain-of-custody procedures, including:

i) Identification of a responsible party to act as sample custodian at the laboratory facility authorized to sign for incoming field samples, obtain documents of shipment and verify the data entered onto the sample custody records;

ii) Provision for a laboratory sample custody log consisting of serially numbered lab-tracking report sheets; and

iii) Specification of laboratory sample custody procedures for sample handling, storage and dispersement for analysis.

b) Sample storage procedures and storage times;

c) Sample preparation methods;

d) Analytical procedures, including:

i) Scope and application of the procedure;

ii) Sample matrix;

iii) Potential interferences;

iv) Precision and accuracy of the methodology;

v) Method detection limits;

vi) Special analytical services required to ensure contract required detection limits do not exceed known toxicity criteria; and

vii) Verification and reporting of tentatively identified compounds.

e) Calibration procedures and frequency;

f) Data reduction, validation and reporting;

g) Internal quality control checks, laboratory performance and systems audits and frequency, including:

i) Method blank(s);

ii) Laboratory control sample(s);

iii) Calibration check sample(s);

iv) Replicate sample(s);

v) Matrix-spiked sample(s);

vi) "Blind" quality control sample(s);

vii) Control charts;

viii) Surrogate samples;

ix) Zero and span gases; and

x) Reagent quality control checks.

h) Preventative maintenance procedures and schedules;

i) Corrective action (for laboratory problems); and

j) Turnaround time.

3) Modeling for this Site - The Modeling section of the Quality Assurance Project Plan shall apply to all models used to predict or describe fate, transport or transformation of contaminants in the environment and shall discuss:

a) Model assumptions and operating conditions;

b) Input parameters; and

c) Verification and calibration procedures.

4) In Situ or Laboratory Toxicity Tests - The Toxicity Test section of the Quality Assurance Project Plan shall apply to all tests or bioassays used to predict or describe impacts of contaminants on a population, community, or ecosystem level.

5) Data Record - The QAPP shall also provide the format to be used to present the raw data and the conclusions of the investigation, as described in a, b, and c below:

a) The data record shall include the following:

i) Unique sample or field measurement code;

ii) Sampling or field measurement location and sample or measurement type;

iii) Sampling or field measurement raw data;

iv) Laboratory analysis ID number;

v) Property or component measured; and

vi) Result of analysis (e.g., concentration).

b) Tabular Displays - The following data shall be presented in tabular displays:

i) Unsorted (raw) data;

ii) Results for each medium, organism, or for each constituent measured;

iii) Data reduction for statistical analysis;

iv) Sorting of data by potential stratification factors (e.g., location, soil layer, topography, vegetation form);

v) Summary data (i.e., mean, standard deviation, min/max values, and sample number); and

vi) Comparisons with background or reference data.

c) Graphical Displays - The following data shall be presented in graphical formats (e.g., bar graphs, line graphs, area or plan maps, isopleth plots, cross-sectional plots or transects, three dimensional graphs, etc.):

i) Display sampling locations and sampling grid;

ii) Indicate boundaries of sampling area, and areas where more data are required;

iii) Display levels of contamination at each sampling location or location from which organism was taken;

iv) Display geographical extent of contamination;

v) Display contamination levels, averages and maxima;

vi) Illustrate changes in concentration in relation to distance from the source, time, depth or other parameters;

vii) Indicate features affecting intramedia transport and show potential receptors;

viii) Compare nature and extent of contamination with results of ecological or biological sampling or measurements; and

ix) Display comparisons with background or reference analyses or measurements.

4.2 SAMPLING PLAN

1) Sampling - The Sampling section of the Sampling Plan shall discuss:

a) Sufficient preliminary sampling to ensure the proper planning of items b. through o. below;

b) Selecting appropriate sampling locations, depths, vegetation strata, organism age, etc. and documenting relevance of sample for intended biological toxicity tests or analyses;

c) Providing a sufficient number of samples to meet statistical or other data usability objectives;

d) Measuring all necessary ancillary data such as ambient conditions, baseline monitoring, etc.;

e) Determining environmental conditions under which sampling should be conducted;

f) Determining which media, pathways, or receptors are to be sampled (e.g., ground water, air, soil, sediment, biota, etc.);

g) Determining which parameters are to be measured and where;

h) Selecting the frequency and length of sampling period;

i) Selecting the sample design (e.g., composites, grabs, random, repeated, etc.);

j) Selecting the number, location, media or organisms for determining background conditions or reference conditions (refer to Risk Assessment Guidance for Superfund: Volume I - Human Health Evaluation Manual (Part A), Interim Final, EPA/540/1-89/002, December 1989);

k) Measures to be taken to prevent contamination of the sampling equipment and cross contamination between sampling points;

l) Documenting field sampling operations and procedures, including;

   i) Documentation of procedures for preparation of reagents or supplies which become an integral part of the sample (e.g., filters and adsorbing reagents);

   ii) Procedures and forms for recording the exact location and specific considerations associated with sample acquisition;

   iii) Documentation of specific sample preservation method;

   iv) Calibration of field devices;

   v) Collection of replicate and duplicate samples;

   vi) Submission of field-biased and equipment blanks, where appropriate;

   vii) Potential interferences present at the Site or facility;

   viii) Construction materials and techniques associated with monitoring wells and piezometers;

   ix) Field equipment listing and sample containers;

   x) Sampling order; and

   xi) Decontamination procedures.

m) Selecting appropriate sample containers;

n) Sample preservation; and

o) Chain-of-custody, including:

   i) Standardized field tracking reporting forms to establish sample custody in the field prior to and during shipment;

   ii) Sample sealing, storing and shipping procedures to protect the integrity of the sample; and,

   iii) Pre-prepared sample labels containing all information necessary for effective sample

tracking.

2) Sampling Measurements - The Sampling Measurements section of the Sampling Plan shall discuss:

a) Selecting appropriate field measurement locations, depths, organism age etc.;

b) Providing a sufficient number of measurements that meet statistical or data usability objectives;

c) Measuring all necessary ancillary data such as ambient or baseline environmental conditions;

d) Determining conditions under which field measurement should be conducted;

e) Determining which pathways, or receptors are to be addressed by appropriate field measurements (e.g., ground water, air, soil, sediment, biota, etc.);

f) Determining which physical, chemical, or biological parameters are to be measured and where;

g) Selecting the frequency and duration of field measurement; and

h) Documenting field measurement operations and procedures, including:

i) Procedures and forms for recording raw data and the exact location, time and Site specific considerations associated with the data acquisition;

ii) Calibration of field devices;

iii) Collection of replicate measurements;

iv) Submission of field-biased blanks, where appropriate;

v) Potential interferences present at the Site;

vi) Construction materials and techniques associated with monitoring wells and piezometers used to collect field data;

vii) Field equipment listing;

viii) Order in which field measurements were made;

ix) Decontamination procedures; and

x) Selecting the number, location, media, and organisms for determining background or reference conditions.

4.3 SITE HEALTH AND SAFETY PLAN

The Respondent shall submit a Health and Safety Plan (HASP) to Ohio EPA with each RD/RA Work Plan for any Remedial Action project activities taking place during the design phase. The Respondent shall review the Remedial Design information and modify the HASP developed for each RD/RA Work Plan, as necessary, to address the activities to be conducted on a Remedial Action project area of the Site during implementation of the Remedial Action. Respondent shall submit for review and comment a HASP that includes monitoring, procedures, and protocols needed to protect the health and safety of those persons conducting Site activities, visiting the Site, and residing or working in the surrounding community.

Respondent shall submit a HASP that (at a minimum) addresses the following:

A. Facility or Site description including availability of resources such as roads, water supply, electricity and telephone service;

B. Description of the known hazards and an evaluation of the risks

C. Listing of key personnel (including the Site safety and health officer) and alternates responsible for Site safety, response operations, and for protection of public health;

D. Delineation of work area, including a map;

E. Description of levels of protection to be worn by personnel in the work area(s), including a description of the personal protective equipment to be used for each of the Site tasks and operations being conducted;

F. Description of the medical monitoring program;

G. Description of standard operating procedures established to assure the proper use and maintenance of personal protective equipment;

H. The establishment of procedures to control Site access;

I. Description of decontamination procedures for personnel and personal protective equipment;

J. Establishment of Site emergency procedures, including a contingency plan ;

K. Availability of emergency medical care for injuries and toxicological problems;

L. Description of requirements for an environmental monitoring program. This should include a description of the frequency and type of any air and personnel monitoring, environmental sampling techniques and a description of the calibration and maintenance of the instrumentation used as it pertains to the project;

M. Specification of any routine and special training required for Site personnel;

N. Entry procedures for confined spaces; and

O. Establishment of procedures for protecting workers from weather-related problems.

Each HASP shall be consistent with applicable regulations, guidance, CERCLA requirements, and DOE Orders.

Although Ohio EPA will review and may provide comment on a draft HASP, Ohio EPA will not have a concurrence or approval role with respect to a HASP. It is Respondent's responsibility to comply with applicable rules and regulations and to ensure that Site workers, Site visitors, and the surrounding community are protected from any hazards or potential hazards associated with the Site throughout the conduct of RD/RA activities.

4.4 CONSTRUCTION QUALITY ASSURANCE PROJECT PLAN

The Respondent shall develop a Construction Quality Assurance Project Plan (CQAPP) based on the plans and specifications and performance standards for each Remedial Action project. A CQAPP is a Remedial Action project specific document that shall specify procedures to ensure that the completed Remedial Action work meets or exceeds all design criteria and specifications. A draft CQAPP shall be

submitted with the Intermediate Design submittal for review and comment by Ohio EPA. Respondent will address Ohio EPA comments in accordance with the provisions of the Orders governing review of submissions. Certain aspects of the CQAPP, for example personnel names and qualifications, may not be known at the time of design concurrence or approval, as applicable. A complete and final CQAPP shall be submitted to Ohio EPA for concurrence or approval, as applicable, prior to the start of construction. At a minimum, the CQAPP shall address the elements listed below.

4.4.1 Responsibility and Authority

The responsibility and authority of all organizations (e.g., technical consultants, construction firms, etc.) and key personnel involved in the construction of the Remedial Action(s) shall be described fully in the CQAPP. The Respondent shall provide a copy of the concurred with or approved, as applicable, CQAPP to each organization with responsibility and authority for implementing the CQAPP. The Respondent shall also identify a Construction Quality Assurance officer and the necessary supporting inspection staff.

4.4.2 Construction Quality Assurance Personnel Qualifications

The qualifications of the Construction Quality Assurance officer and supporting inspection personnel shall be presented in the CQAPP to demonstrate that they possess the training and experience necessary to fulfill their identified responsibilities.

4.4.3 Inspection Activities

The observations and tests that will be used to monitor the construction and/or installation of the components of the Remedial Action shall be described in the CQAPP. The plan shall include scope and frequency of each type of inspection. Inspections shall verify compliance with the design, applicable requirements of state and federal law and performance standards. Inspections shall also ensure compliance with all health and safety standards and procedures. The CQAPP shall include provisions for conducting the preconstruction, prefinal and final inspections and associated meetings as described in Section 3.4 of this SOW.

4.4.4 Sampling Requirements

The sampling activities necessary to ensure that the design specifications and performance standards are achieved shall be presented in the CQAPP. The description of these activities shall include sample sizes, sample locations, frequency of sampling, testing to be performed, acceptance and rejection criteria, and plans for correcting problems as addressed in the design specifications.

4.4.5 Documentation

Reporting requirements for construction quality assurance activities shall be described in detail in the CQAPP. This shall include applicable items such as daily summary reports, meeting reports, inspection data sheets, problem identification and corrective measures reports, design acceptance reports and final documentation. Provisions for the storage of all records shall be presented in the CQAPP.

4.5 PERFORMANCE STANDARD VERIFICATION PLAN

A Performance Standard Verification Plan (PSVP) shall be prepared to consolidate information for required testing, sampling and analyses to ensure that both short-term and long-term performance standards for a RA are met for each Remedial Action project. Performance standards may include the measurement of the effectiveness of engineering controls or other controls used to control migration of or exposure to contaminants. The PSVP shall include a FSP and a QAPP for any sampling and analyses to be conducted.

A Draft PSVP shall be submitted with the Intermediate Design for review and comment by Ohio EPA, unless otherwise agreed to by the Respondent and Ohio EPA. Respondent will address any Ohio EPA comments in accordance with the provisions of the Orders governing review of submissions. A final PSVP must be submitted with and concurred with or approved, as applicable, as part of a Final Design.

4.6 OPERATION AND MAINTENANCE PLAN

The Respondent shall prepare an Operation and Maintenance Plan (O&M Plan) to cover long term operation and maintenance of each Remedial Action project. Operation and maintenance for all components of a Remedial Action shall begin after it is demonstrated that those components are operational and functional. Each plan, at a minimum, shall be composed of the elements listed below.

1) Normal Operation and Maintenance

   a) Description of tasks for operation;

   b) Description of tasks for maintenance;

   c) Description of prescribed treatment or operating conditions; and

   d) Schedules showing the frequency of each O&M task.

2) Potential Operating Problems

   a) Description and analysis of potential operating problems;

   b) Sources of information regarding potential operating problems;

   c) Description of means of detecting problems in the operating systems; and

   d) Common remedies for operating problems.

3) Routine Monitoring and Laboratory Testing

   a) Description of monitoring tasks;

   b) Description of required laboratory tests and interpretation of test results;

   c) Required QA/QC procedures to be followed; and

   d) Schedule of monitoring frequency and provisions to discontinue, if appropriate.

Note: Information on monitoring and testing that is presented in a PSVP should be referenced, as appropriate, but should not be duplicated in an O&M Plan.

4) Alternative O&M

   a) Description of alternate procedures to prevent undue hazard, should systems fail; and

   b) Analysis of the vulnerability and additional resources requirements should a failure occur.

5) Safety Plan

   a) Description of safety procedures, necessary equipment, etc. for Site personnel; and

   b) Description of safety tasks required in the event of systems failure (may be linked to the Site

Safety Plan developed for the RD/RA)

6) Equipment

   a) Description of equipment necessary to the O&M Plan;

   b) Description of installation of monitoring components;

   c) Description of maintenance of Site equipment; and

   d) Replacement schedule for equipment and installed components.

7) Annual O&M Budget

   a) Costs for personnel;

   b) Costs for preventative and corrective maintenance;

   c) Costs of equipment and supplies, etc.;

   d) Costs of any contractual obligations (e.g., lab expenses); and

   e) Costs of operation (e.g., energy, other utilities, etc.).

8) Records and Reporting Mechanisms Required

   a) Daily operating logs;

   b) Laboratory records;

   c) Records for operating costs;

   d) Mechanism for reporting emergencies;

   e) Personnel and maintenance records; and

   f) Quarterly/annual reports to Ohio EPA.

The Respondent shall submit a draft O&M Plan to Ohio EPA for review and comment with each Intermediate Design submittal, unless otherwise agreed to by Respondent and Ohio EPA. Subsequent drafts of an O&M Plan shall be submitted with the Prefinal and Final Design submittals, which reflect the refined plans and specifications of those submittals. Respondent will address any Ohio EPA comments on an O&M Plan in accordance with the provisions of the Orders governing review of submittals. Each final O&M Plan shall be submitted by the Respondent prior to or at the completion of construction of the Remedial Action.

ATTACHMENT C

LIST OF RELEVANT GUIDANCE DOCUMENTS

FOR USE IN CONDUCTING ENGINEERING EVALUATION/COST ANALYSIS, REMOVAL ACTION, REMEDIAL INVESTIGATION/FEASIBILITY STUDY AND REMEDIAL DESIGN/REMEDIAL ACTION ACTIVITIES

DECONTAMINATION AND DECOMMISSIONING PROJECT

U.S. DOE PORTSMOUTH GASEOUS DIFFUSION PLANT

Note: In the event of any conflict between this Attachment and the Director's Final Findings and Orders to which it is appended ("Orders"), the provisions shall be construed if possible so that effect is given to both, however, if the conflict is irreconcilable, the provisions of the Orders shall prevail.

Analytical Methods

Compendium of Methods for Determination of Toxic Organic Compounds in Ambient Air, second edition, Compendium Method TO-14, EPA/625/R-96/010b, U.S. EPA, January 1999.

SW 846, Test Methods for Evaluating Solid Waste, 3rd Edition and updates (online), originally dated November 1986.

Standard Methods for the Examination of Water and Waste Water, American Public Health Association, 18th Edition 1992, and recent editions (online).

U.S. EPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, U.S. EPA, EPA-540-R-04-004, OSWER 9240.1-45, October 2004.

U.S. EPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, U.S. EPA, EPA-540-R-08-01, June 2008.

ARARs

Applicable or Relevant and Appropriate Requirements (ARARS), U.S. EPA (online).

ARARs Table, Ohio EPA DERR, Remedial Response Program. [This is a list of generic ARARs that is periodically updated and subject to change.]

CERCLA Compliance with Other Laws Manual - Part I and Part 2, OSWER Directive 9234.1-01, EPA/540/G-89/006, August 1988, interim final.

Ohio EPA Rules (online).

Use of Applicable or Relevant and Appropriate Requirements (ARARs) in the Ohio EPA Remedial Response Program, Ohio EPA DERR, September 2003.

Attainment of Cleanup Goals

Methods for Evaluating the Attainment of Cleanup Standards, Volume 1: Soils and Solid Media, U.S. EPA, February 1989. EPA 230/02-89-042.

Methods for Evaluating the Attainment of Cleanup Standards, Volume 3: Reference-Based Standards for Soils and Solid Media, U.S. EPA, December 1992. EPA 230-R-94-004.

Background Guidance

Use of Background for Remedial Response Sites, Technical Decision Compendium, Ohio EPA DERR, August 2009.

Role of Background in the CERCLA Cleanup Program, OSWER 9285.6-07P, April 2002.

Cost Estimates

A Guide to Developing and Documenting Cost Estimates During the Feasibility Study; EPA 540-R-00-002, OSWER 9355.0-75, July 2000.

A Guide to Developing and Documenting Cost Estimates During the Feasibility Study; Appendix A Internet Resources, EPA 540-R-00-002, OSWER 9355.0-75, July 2000.

A Guide to Developing and Documenting Cost Estimates During the Feasibility Study; Appendix B Cost Adjustment Factors, EPA 540-R-00-002, OSWER 9355.0-75, July 2000.

A Guide to Developing and Documenting Cost Estimates During the Feasibility Study; Appendix C Example Cost Templates, EPA 540-R-00-002, OSWER 9355.0-75, July 2000.

A Guide to Developing and Documenting Cost Estimates During the Feasibility Study; Appendix D Glossary, EPA 540-R-00-002, OSWER 9355.0-75, July 2000.

Data Quality Objectives

Data Quality Evaluation Statistical Toolbox (DataQUEST) Users Guide, U.S. EPA ORD, EPA/600/R-96/085 (EPA QA/G-9D), December 1997.

Data Quality Objectives Decision Error Feasibility Trials Software (DEFT) – Users Guide, U.S. EPA, EPA QA/G-4D, EPA/240/B-01/007, September 2001.

Data Quality Objectives Process for Hazardous Waste Site Investigations, U.S. EPA, EPA/600/R-00/007 (EPA QA/G-4HW), January 2000.

Data Quality Objectives Process for Superfund, Interim Final Guidance, OSWER Directive 9355.9-01, EPA540-R-93-071, September 1993.

Data Quality Objectives Process Summary, DERR-00-DI-32 Ohio EPA DERR Remedial Response Program, January 2002.

Guidance for Data Quality Assessment: Practical Methods for Data Analysis, U.S. EPA, EPA/600/R-96/084 (EPA QA/G-9), QAOO Update, July 2000.

Guidance on Systematic Planning Using the Data Quality Objectives Process, U.S. EPA, EPA QA/G-4, February 2006. EPA/240/B-06/001.

Data Usability in Risk Assessment

Guidance for Data Usability in Risk Assessment (Part A), U.S. EPA, OSWER 9285.7-09A, April 1992

Guidance for Data Usability in Risk Assessment (Part B), U.S. EPA, OSWER 9285.7-09B, May 1992

Ecological Risk Assessment

Ecological Risk Assessment Guidance Document, Ohio EPA DERR Remedial Response Program, April 2008.

Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments, U.S. EPA, EPA/540/R-97/006, September 1997.

Guidelines for Ecological Risk Assessment, U.S. EPA, EPA/630/R-95/002F, April 1998.

Ground Water Investigation

Ground Water Sampling and Monitoring Using Direct Push Technologies, U.S. EPA, OSWER 9200.1-51, EPA 540/R-04/005, August, 2005.

Technical Guidance Manual for Hydrogeologic Investigations and Ground Water Monitoring Programs, Ohio EPA/DDAGW, Final, February 1995 (as updated).

VLEACH: A One-Dimensional Finite Difference Vadose Zone Leaching Model, Version 2.2a, U.S. EPA, Hazardous Sites Control Division, Contract No. 68-01-251, May 2007.

Health and Safety Plan

American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values for Chemical Substances and Physical Agents & Biological Exposure Indices, ISBN: 1-882417-46-1, 2002.

OSHA Regulation 29 CFR 1910.120, Hazardous Waste Operations and Emergency Response; U.S. Department of Labor (OSHA).

Human Health Risk Assessment

Application of Bioavailability in the Assessment of Human Health Hazards and Cancer Risk, Ohio EPA/DERR, Remedial Response Program, March 2002.

Assessing Compounds without Formal Toxicity Values Available for Use in Human Health Risk Assessment, Ohio EPA DERR, Remedial Response Program, August 2005.

Exposure Factors Handbook (Final), U.S. EPA, EPA/600/P-95/002Fa-c, August 1997.

Human Health Cumulative Carcinogenic Risk and Non-carcinogenic Hazard Goals for DERR Remedial Response and Office of Federal Facility Oversight, Ohio EPA DERR, April 28, 2004.

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

Risk Assessment Guidance for Superfund (RAGS), Volume 1: Human Health Evaluation Manual (Part B, Development of Risk-Based Preliminary Remediation Goals) U.S. EPA, EPA/540/R-92/003. December 1991.

Risk Assessment Guidance for Superfund (RAGS), Volume 1: Human Health Evaluation Manual, (Part C, Risk Evaluation of Remedial Alternatives) U.S. EPA, OSWER 9285.7-01C, October 1991.

Risk Assessment Guidance for Superfund (RAGS), Volume I: Human Health Evaluation Manual (Part D, Standardized Planning, Reporting and Review of Superfund Risk Assessments) Final, U.S. EPA, OSWER 9287-7-47, December 2001

Risk Assessment Guidance for Superfund (RAGS), Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment), U.S. EPA, OSWER 9285.7-02 PB99-963312, July 2004.

Risk Assessment Guidance for Superfund: Volume I - Human Health Evaluation Manual, Supplemental Guidance: "Standard Default Exposure Factors," U.S. EPA, OSWER 9285.6-03, March 1991.

Use of Risk-Based Numbers in the Remedial Response Process Overview, Ohio EPA DERR, Remedial Response Program, June 2005

U.S. EPA Integrated Risk Information System (IRIS) Data Base, U.S. EPA (online)

U.S. EPA Health Effects Assessment Summary Tables (HEAST), Office of Emergency & Remedial Response. HEAST values for non-radioactive chemicals (last Updated in1997) are being superseded by EPA Provisional Peer Reviewed Toxicity Values (PPRTVs).

Landfills

Conducting Remedial Investigations/Feasibility Studies for CERCLA Municipal Landfill Sites, OSWER Directive 9355.3-11, EPA/540/P-91/001, February 1991.

Presumptive Remedies: CERCLA Landfill Caps RI/FS Data Collection Guide, U.S. EPA, EPA/540/F-95/009, August 1995.

Seminar Publication - Requirements for Hazardous Waste Landfill Design, Construction, and Closure, U.S. EPA, EPA/625/4-89/022, August 1989 (# 625489022).

Technical Guidance Document: Final Covers on Hazardous Waste Landfills and Surface Impoundments, U.S. EPA, EPA/530-SW-89-047, July 1989 (# 530SW89047).

Land Use and Reuse

Land Use in the CERCLA Remedy Selection Process, U.S. EPA, OSWER 9355.7-04, May 25, 1995.

Reuse Assessments: A Tool To Implement The Superfund Land Use Directive, U.S. EPA, OSWER 9355.7-06P, June 4, 2001.

Lead

Integrated Exposure Uptake Biokinetic Model for Lead in Children, Windows® version (IEUBKwin v1.0 build 263) (December, 2005).

Superfund Lead-Contaminated Residential Sites Handbook, U.S. EPA, OSWER 9285.7-50, August 2003.

Non-Time Critical Removal Actions

Conducting Non-time Critical Removal Actions Under CERCLA, U.S. EPA, OSWER EPA/540/F-94/009, December 1993.

Non-Time Critical Removal Actions, U.S. DOE (CERCLA Information Brief), DOE/EH-413-9811, April 1988

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Oversight

Using RCRA's Results-Based Approaches and Tailored Oversight Guidance" when Performing Superfund PRP Oversight, U.S. EPA December 2006, OSWER, EPA 530-R-03-012, September 2003.

Quality Assurance

Data Quality Assessment: A Reviewer's Guide, (QA/G-9R), U.S. EPA, EPA/240/B-06/002, February, 2006.

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Guidance for Quality Assurance Plans for Modeling, U.S. EPA, EPA QA/G-5M, EPA/240-R02/007, December, 2002.

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Guidance on Environmental Data Verification and Data Validation, U.S. EPA, EPA/240/R-02/004, November 2002.

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Laboratory and Field Data Screening for Preparing Quality Assurance Project Plans, Ohio EPA DERR. DI-00-034, August 2005.

Preparation Aids for the Development of Category 1 Quality Assurance Project Plans, U.S. EPA, EPA/600-8-91-003, February 1991 (#600891003).

Quality Assurance/Quality Control Guidance for Removal Activities: Sampling QA/QC Plan and Data Validation Procedures, Interim Final, U.S. EPA, EPA/540/G-90/004, April 1990 (# 540G90004).

Technical Guidance Document: Construction Quality Assurance and Quality Control for Waste Containment Facilities, U.S. EPA, EPA/600/R-93/182, September 1993 (# 600R93182).

RD/RA – General Guidance

A Compendium of Technologies Used in the Treatment of Hazardous Wastes, U.S. EPA, EPA/625/8-87/014, September 1987 (# 625887014).

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Handbook - Dust Control at Hazardous Waste Sites, U.S. EPA, EPA/540/2-85/003, November 1985 (# 540285003).

Handbook for Stabilization/Solidification of Hazardous Wastes, U.S. EPA, EPA/540/2-86/001, June 1986 (# 540286001.

Institutional Controls Bibliography, U.S. EPA OSWER 9355.0-110, Decernber 2005.

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Stabilization/Solidification of CERCLA and RCRA Wastes - Physical Tests, Chemical Testing Procedures, Technology Screening and Field Activities, U.S. EPA, EPA/625/6-89/022, May 1989 (# 625689022).

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A Rationale for the Assessment of Errors in the Sampling of Soils, U.S. EPA – Environmental Monitoring Systems Laboratory, EPA/600/4-90/013, July 1990.

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Vapor Intrusion

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Attachment D

GENERIC STATEMENT OF WORK

FOR CONDUCTING AN

ENGINEERING EVALUATION / COST ANALYSIS (EE/CA)

FOR THE U.S. DOE PORTSMOUTH GASEOUS DIFFUSION PLANT

FACILITIES DECONTAMINATION AND DECOMMISSIONING EVALUATION PROJECTS

Note: In the event of any conflict between this Attachment and the Director's Final Findings and Orders to which it is appended ("Orders"), the provisions shall be construed if possible so that effect is given to both, however, if the conflict is irreconcilable, the provisions of the Orders shall prevail.

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1.0 Introduction

This Generic Statement of Work (SOW) for conducting an Engineering Evaluation/Cost Analysis (EE/CA) sets forth the generic process requirements for initiating, conducting and documenting EE/CA(s) for the Facilities Decontamination and Decommissioning (D&D) projects, listed in Attachment G to the Orders, at the Department of Energy (DOE) Portsmouth Site.

The EE/CA process includes gathering sufficient information to determine the necessity for a non-time critical Removal Action and to support the evaluation of Removal Action alternatives to reduce or eliminate the threat to human health, safety and the environment at the Site. Respondent shall gather sufficient information to develop and evaluate Removal Action alternatives in each EE/CA to provide Ohio Environmental Protection Agency (Ohio EPA) with the information needed to review and concur with or approve, as applicable, each Removal Action project.

Each EE/CA shall be performed in accordance with the requirements of the Orders, and this SOW, the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), and consistent with the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), Final Rule (40 CFR Part 300). The applicability of individual guidance will be determined by the scope of each Removal Action project and data needs as determined during the scoping phase. Ohio EPA and/or Respondent may identify other relevant guidance to be used in connection with performance of each EE/CA as Work proceeds under the Orders. Final EE/CA documentation, as concurred with or approved, as applicable, by Ohio EPA, shall, with the administrative record, form the basis for selection of a Removal Action and provide sufficient information for Respondent to develop and issue an Action Memorandum memorializing the selected Removal Action for each Removal Action project.

2.0 EE/CA Scoping

Scoping is the planning process for an EE/CA.

2.1 Project Initiation Meeting (PIM) and Site Visit

Consistent with Section VI of the Orders (Performance of Work by the Respondent), Respondent will contact Ohio EPA's Site Coordinator to set up a Project Initiation Meeting (PIM) for each Removal Action project. The purpose of a PIM is to afford Respondent and Respondent's contractors an opportunity to review with Ohio EPA the technical requirements of the Orders and this SOW and seek clarification regarding the performance of the required Work and/or preparation of deliverables, and to establish a date for a Site visit, if needed. Topics of discussion may include, but need not be limited to, the buildings or facilities to be addressed by each EE/CA, the project management strategy, data quality objectives (DQOs), initiation and/or integration of emergency or interim actions, involvement and coordination with other Ohio EPA programs and other agencies, community relations activities, and communication between Respondent and Ohio EPA. Each PIM will be attended by Respondent's Site Coordinator and Ohio EPA's Site Coordinator and agency staff providing support to the Site Coordinator in overseeing Respondent's conduct of each EE/CA. Ohio EPA also encourages meeting attendance by those persons providing support to Respondent subject to Respondent's discretion.

2.2 Removal Site Evaluation (RSE)

The Removal Site Evaluation (RSE) process includes performance of a removal Preliminary Assessment (PA) and, if warranted, a Removal Site Inspection (RSI). A removal PA is based upon existing information that is readily available at the time the PA is being performed, and is performed in accordance with applicable provisions of the NCP. The PA may identify the source and nature of the release or threatened release, evaluate the magnitude of any threat to human health, safety and the environment posed by the release or threatened release, discuss relevant past practices and operations of affected facilities, evaluate factors necessary to determine whether a Removal Action is necessary, and determine whether additional information is needed to determine whether a Removal Action is necessary. If additional information is necessary, a removal RSI is performed. The following section summarizes the PA requirements. Appendix A to this SOW provides a sample PA outline for the Facilities Decontamination and Decommissioning Evaluation projects.

2.3 Preliminary Assessment (PA)

Each PA shall document the following information at an appropriate level of detail to support a determination as to whether sufficient data exists to determine whether a Removal Action is necessary and development and evaluation of potential Removal Action alternatives, or whether additional data is necessary either to determine whether a Removal Action is necessary or to develop and evaluate potential Removal Action alternatives:

- characterization of Removal Action project area and sources (including anticipated wastes and volumes);
- evaluation of likelihood of a release of hazardous substances, pollutants, or contaminants; and
- identification of potential receptors.

Each PA shall identify any additional necessary data, along with an explanation of how the data will be used. If no additional data is needed, a PA shall include an affirmative statement that no more data is needed and an explanation as to why existing information is sufficient.

Respondent shall submit for Ohio EPA review and concurrence or approval, as applicable, a PA Report detailing the results of the PA. In addition, Respondent shall provide details of any relevant non-D&D activities conducted prior to the PA. Upon agreement of Respondent and Ohio EPA, the results of a PA may be incorporated into an EE/CA in lieu of submission and finalization of a PA Report. An outline for the PA Report is provided in Appendix A to this SOW.

<u>Preliminary Assessment Elements</u>

I. Description of Current Conditions (SOW Appendix A, Section 2.0)

Consistent with the outline in Appendix A of this SOW, Respondent shall collect and analyze existing information available for each Removal Action project area to assist in assessing the threat to human health, safety and the environment and developing general response actions and preliminary removal alternatives. Sources of information may include, as applicable, a review of Ohio EPA and other public files (including analytical results obtained from prior Site investigations and assessments conducted by Ohio EPA and others) and interviews with employees, officers and agents (past and present) associated with the Site.

A. Existing Analytical Data (SOW Appendix A, Section 2.0)

Consistent with the outline in Appendix A of this SOW, Respondent shall compile existing relevant analytical data relating to condition and contamination in each Removal Action project area, and summarize the results in terms of available information regarding physical and chemical characteristics, and contaminant concentrations. Each PA shall also provide available information concerning dates and locations of any sampling activities. Information may be provided to Ohio EPA in an acceptable electronic format, if available. Use of any data that was not collected and analyzed pursuant to a Quality Assurance Project Plan (QAPP) concurred with or approved, as applicable, by Ohio EPA must be supported by inclusion of relevant quality assurance and quality control information. Consistent with the Data Quality Objectives (DQOs) guidance listed in the Guidance List attached to the Orders, Respondent shall identify the DQOs for all existing data on which Respondent intends to rely.

B. Conduct Site Visit for each Removal Action Project

Respondent shall, if necessary, coordinate a Site visit with Ohio EPA to assist in developing a conceptual understanding of potential waste/contaminant streams, and threat to human health, safety and the environment in each Removal Action project area.

C. Describe Site Conditions at each Removal Action Project Area (SOW Appendix A, Section 2.0)

Consistent with the outline in Appendix A of this SOW, Respondent shall prepare and include in each PA a summary based on relevant existing information regarding pertinent area boundary features, pertinent physical geography at and near the Removal Action project area at the Site, and the total area addressed in each PA. The summary shall also include the general nature of the problem, particularly with respect to the relevant historic use of the Removal Action project area at the Site relative to waste/contaminant identification. Respondent shall also include relevant background information on land use, natural resources, and climatology. Respondent may reference applicable existing reports. Respondent shall, at a minimum, provide the following, if relevant:

1. Map(s) (with key(s)) depicting relevant information identified by Respondent and Ohio EPA.
2. Discussion of relevant history and operation (past and current), including: relevant generation of wastes/contaminants, relevant treatment, storage and/or disposal activities, and relevant past spills or discharges;

D. Potential Threat to Human Health, Safety and the Environment (SOW Appendix A, Section 3.0)

Consistent with the outline in Appendix A of this SOW, Respondent shall prepare a streamlined evaluation of the potential threat to human health, safety and the

environment for each Removal Action project based on the review of relevant existing information as it pertains to the Facilities Decontamination and Decommissioning (D&D) Evaluation projects. The summary shall include, but not be limited to, descriptions of the relevant types, physical states, and amounts of contaminants known or suspected to be associated with each Removal Action project area; and the type and volume of wastes/contaminants anticipated to be generated or associated with the Removal Action. Emphasis shall be placed on performing a streamlined evaluation of the threat or potential threat that may exist to public health, safety and the environment. The summary shall include tables based on the information presented in Section 2.3.I.A of this SOW and displaying the minimum and maximum levels of detected contaminants in the Removal Action project area, where such data is available. The summary also shall identify areas, if any, where additional information is necessary to support a sufficient streamlined evaluation of potential threat to human health, safety and the environment.

II. Existing Data Analysis (SOW Appendix A, Section 2.0(c) and Section 4.0; SOW Appendix B, Section 3.3)

Consistent with the outline in Appendix A of this SOW, following the review of existing information, Respondent shall specify the contaminants of potential concern and the actual or potential exposure pathways in the Removal Action project area.

III. Identification of Data Needs and Data Usage (SOW Appendix A, Section 5.0 of outline A)

Based on the results of the above tasks, Respondent will identify the types of data that will need to be collected during preparation of the EE/CA to support evaluation of the areas listed below. If Respondent determines no additional data is needed, Respondent shall provide an explanation as to why no further data is necessary. The areas Respondent must address are as follows:

1. Definition of relevant source areas;
2. Streamlined evaluation of threat to human health, safety and the environment;
3. Definition of relevant extent of contamination;
4. Identification of potential receptors;
5. Development and evaluation of Removal Action alternatives.

Identification of data needs shall be coordinated with the expected uses for the data and the DQOs. Respondent shall identify the intended uses for the data and its adequacy in meeting the DQOs.

2.4 Removal Site Inspection (RSI)

If a PA concludes that additional sampling is needed to address identified data gaps for a Removal Action project, a Removal Site Inspection (RSI) will be conducted. A RSI will not be required if Respondent and Ohio EPA conclude based on the PA that no additional data is necessary for a Removal Action project. Where a RSI will require sampling activities, the Respondent will submit for EPA review and concurrence or approval, as applicable, a Removal Site Inspection Work Plan (RSIWP) that describes how the identified data gaps will be addressed. The RSIWP will include a Sampling and Analysis Plan (SAP).

Removal Site Inspection Work Plan

Each RSIWP will be developed consistent with the scope and complexity of the RSI activities to be performed and specify key tasks to be accomplished. The responsibility and authority of all organizations and key personnel involved in performing investigative tasks shall be outlined. Each RSIWP shall discuss the timing/schedule/Milestones for subsequent related documents or activities. Elements of the RSIWP will, as applicable, include, but not be limited to, the following:

- Description of the data gap(s) to be addressed by the RSI and identification of areas where sampling and analysis will be necessary to address those data gaps;
- A schedule, including Milestones;
- Listing of standards, criteria, rules and regulations applicable to the investigation.
- A Data Management Plan:
    - A unique identification code assigned to all monitoring and sampling stations;
    - Location data and descriptive information recorded and encoded of all monitoring and sampling stations described in standard latitude and longitude coordinates or state plane coordinates;
    - Analytical results and other observations correlated with the sampling station location and descriptive code using common identification codes assigned to station locations;
- A list and description of individual investigative activities necessary to address data gaps that may include:
    - Site survey of relevant features;
    - Physical characterization.

Each RSIWP will be submitted to Ohio EPA for review and concurrence or approval, as applicable. The Respondent will address Ohio EPA comments on the RSIWP in accordance with the provisions of the Orders governing review of submissions.

Sampling and Analysis Plan

Respondent shall submit a SAP with each RSIWP for Ohio EPA review and concurrence or approval, as applicable.

Each SAP shall describe the sampling objectives, the rationale for the sampling approach, and plans for data use, and shall provide a detailed description of sampling tasks, consistent with applicable protocols. Each SAP shall describe specifications for sample identifiers; operation of major sampling equipment (e.g. drilling equipment); the type, number, and location of samples to be collected; the analyses to be performed; descriptions of sampling gear and methods to be used; documentation of samples; sample containers, collection and handling; and the sampling schedule.

Each SAP shall describe the data quality objectives (DQOs), and identify and describe measures that will be taken during performance of sampling and analysis tasks to ensure fulfillment of the DQOs.

RSI Report

Respondent shall submit for Ohio EPA review and concurrence or approval, as applicable, an SI Report detailing the methods and results of the RSI for each Removal Action project, as

necessary. Upon agreement of Respondent and Ohio EPA, the results of the RSI may be incorporated into an EE/CA in lieu of submission and finalization of a RSI Report.

3.0 EE/CA (SOW Appendix B, Outline B)

An EE/CA is intended to:

1) satisfy environmental review requirements for Removal Actions;
2) satisfy administrative record requirements for approved documentation of Removal Action selection; and
3) provide a framework for evaluating and selecting removal alternatives and technologies.

The EE/CA identifies the objectives of each Removal Action and analyzes the effectiveness, implementability, and cost of various alternatives that may satisfy these objectives.

If the analysis of existing data performed for a PA determines that data is sufficient and that no additional sampling is needed, prior to development of an EE/CA, the EE/CA development will proceed without need for an RSI. If an RSI is required, development of the EE/CA will follow completion of the RSI activities and finalization of the RSI Report. Upon agreement of Respondent and Ohio EPA, the results of a RSI may be incorporated into an EE/CA in lieu of submission and finalization of an RSI Report. An EE/CA includes the following elements:

- Removal Action project area characterization - summarize available data on the physical, demographic, and other characteristics of the Removal Action project area from the RSE and/or other documents regarding the Removal Action project area;
- Removal Action scope, goals, and objectives - identify specific objectives that clearly define the scope of the Removal Action;
- Identification of ARARs and to be considered (TBC) criteria which may influence potential alternatives and/or Removal Action project area activities;
- Comparative analysis of Removal Action alternatives - an appropriate range of viable removal alternatives should be identified for evaluation and comparison. Removal alternatives should be analyzed for their effectiveness, implementability, and cost;
- Recommended Removal Action alternative - An EE/CA should identify a recommended Removal Action alternative based on a comparative analysis evaluating the relative performance of each of the alternatives against the effectiveness, implementability, and cost criteria. The comparative analysis should identify key trade-offs affecting the Removal Action recommendation.

Respondent shall prepare each EE/CA in accordance with Appendix B to this SOW for the Non-Time Critical Removal Actions conducted pursuant to these Orders.

4.0 Progress Reports

Respondent shall submit written quarterly progress reports for each Removal Action project. The Progress Reports shall provide a summary of Removal Action project activities and information for the quarter, including:

a) A summary description of the Work performed during the reporting period;

b) A description of any deviations from any concurred with or approved, as applicable, Work Plans or approved schedules or Milestones during the reporting period and the date of Ohio EPA's concurrence with or approval of, as applicable, any such deviations;
c) A high-level summary of field and laboratory analytical data generated or received during the reporting period;
d) A summary of problems or potential problems encountered during the reporting period and any actions taken to rectify or prevent problems;
e) A summary of notable activities documented in project daily reports, inspection reports, or other reports as may be required by a Work Plan concurred with or approved, as applicable, by Ohio EPA;
f) A summary identification of the sources, types, quantities, test results, and disposition of investigation derived and other project wastes/contaminants generated or disposed of during the reporting period;
g) An overview of tasks scheduled for the next two reporting periods; and
h) Any significant community comments/concerns identified to Respondent in connection with the EE/CA.

In addition, upon request, Respondent shall provide laboratory data or additional information to Ohio EPA in accordance with the provisions of the Orders.

Appendix A
Preliminary Assessment (PA) Outline

Outline A

(Section 2.3 of Generic Statement of Work for Conducting an Engineering Evaluation/Cost Analysis (EE/CA) for the U.S. DOE Portsmouth Gaseous Diffusion Plant Facilities Decontamination and Decommissioning Evaluation Projects)

The PA for each Removal Action project will be based on information that is available when each PA is written. If insufficient information is available to adequately address any given item, a PA should acknowledge that fact and identify any additional data needs in Section 5.0(b) of the PA.

Headings for sections to be included in each PA appear as ALL CAPS. Text in *italics* describes the suggested contents to be included within each PA Section.

INTRODUCTION

1.0 PROJECT INITIATION MEETING (PIM)

- Provide a summary of discussions during the PIM
- Present any conclusions or agreements reached during the PIM

2.0 DESCRIPTION OF CURRENT CONDITIONS

Specifically identify the buildings/facilities to be addressed in the Removal Action project. Include a brief description of the location, current condition, and any current use, of the buildings/facilities.

a. *PORTSMOUTH FACILITY BACKGROUND*

Provide a description of the Portsmouth Facility and history.

The following suggested language should be used (with any appropriate modifications to reflect changes between the time this Outline was written and the time each PA is written):

The US DOE Portsmouth Facility (PORTS) is located in a rural area of Pike County, Ohio, east of the Scioto River on a 5.8-square mile area. PORTS is two miles east of the Scioto River in a small valley running parallel to and approximately 130 ft above the Scioto River floodplain. Pike County has approximately 28,200 residents. The nearest population center to PORTS is Piketon, Ohio, which is located approximately five miles north on U.S. Route 23.

PORTS occupies an upland area of southern Ohio with an average land surface elevation of 670 ft above mean sea level. PORTS sits in a mile-wide abandoned river valley situated above the Scioto River floodplain to the west. In much of the

industrialized area of PORTS, the original topography has been modified and graded for construction of buildings and other facility components. Much of the industrialized area of PORTS is located on fill that was removed from the higher elevations of PORTS and placed in existing drainage valleys and depressions.

PORTS is drained by several small tributaries of the Scioto River. Sources of surface water drainage include storm water runoff, groundwater discharge, and effluent from plant processes. The largest stream is Little Beaver Creek, which drains the northern and northeastern portions of the PORTS property before discharging into Big Beaver Creek. Big Run Creek is the smaller tributary of the Scioto River that drains the southern portion of the PORTS property.

Both Little Beaver Creek and Big Run Creek cut through unconsolidated material and intersect bedrock, and the ancestral Portsmouth River Valley essentially forms a large "bowl" around PORTS. Therefore, groundwater leaving PORTS through unconsolidated deposits via Little Beaver Creek and Big Run Creek eventually drains to the Scioto River.

Two ditches drain the western and southwestern portions of the PORTS property. Flow in these ditches is low to intermittent. The West Drainage Ditch receives water from surface water runoff, storm sewers, and plant effluent. The unnamed southwestern drainage ditch receives water mainly from storm sewers and groundwater discharge. These two drainage ditches continue west and ultimately discharge into the Scioto River.

The subsurface in the PORTS area consists of approximately 30 to 40 ft of unconsolidated Quaternary clastic sediments unconformably overlying Paleozoic bedrock that dips gently toward the east. In stratigraphic order, bedrock is overlain by fluvial Gallia Sand and Gravel (Gallia) and by the lacustrine Minford Clay and Silt (Minford) of the Teays Formation.

Bedrock consisting of clastic sedimentary rocks underlies the unconsolidated sediments beneath PORTS. The geologic structure of the area is very simple, with the bedrock (Cuyahoga Shale, Sunbury Shale, Berea Sandstone, and Bedford Shale) dipping gently to the east-southeast. No known geologic faults are located in the area; however, joints and fractures are present in the bedrock formations.

According to the Soil Survey of Pike County, Ohio (U.S. Department of Agriculture 1990), 22 soil types occur within the PORTS property boundary. The predominant soil type at PORTS is Omulga Silt Loam (U.S. Department of Agriculture 1990). Most of the area within the active portion of PORTS is classified as urban land-Omulga complex with a 0 to 6 percent slope, which consists of urban land and a deep, nearly level, gently sloping, moderately well-drained Omulga soil in preglacial valleys. The urban land is covered by roads, parking lots, buildings, and railroads, which makes identification of the soil series difficult. The soil in these areas is so obscured or disturbed that assignment of a specific soil series is not feasible. Well developed soil horizons may not be present in all areas inside Perimeter Road because of cut and fill operations related to

construction.

The climate of the PORTS area can be described as humid-continental. It is characterized by warm, humid summers and by cold, humid winters. Daily temperature averages are 22.2°C (72°F) in the summer and 0°C (32°F) in the winter. The average annual temperature is 12.7°C (55°F). Record high and low temperatures are 39.4°C (103°F) and -32°C (-25°F), respectively (National Climatic Data Center [NCDC] 2002).

Precipitation is distributed relatively evenly throughout the year and averages approximately 40 inches per year. The month with the highest average amount of precipitation is May. Groundwater recharge and flood potential are greatest during this time. Fall is the driest season. Snowfall averages 20.4 inches per year. Although snow amounts vary greatly from year to year, an average of 8 days per year have snowfall in excess of one inch (NCDC 2002).

Prevailing winds are from the south-southwest at approximately 5 miles per hour (mph). The highest average monthly wind speed of 11 mph typically occurs during the spring.

The terrain surrounding the plant, with the exception of the Scioto River floodplain, consists mainly of marginal farmland and densely forested hillsides. The Scioto River floodplain is extensively farmed. PORTS is situated on a 3777-acre parcel of DOE-owned land. Twelve hundred acres of DOE's property are located within Perimeter Road, and comprise the centrally-developed portion of PORTS. Five hundred acres of the land within Perimeter Road are fenced for controlled access. Approximately 190 buildings are located within PORTS, and there are numerous utility structures at PORTS. The DOE-owned land outside Perimeter Road is used for a variety of purposes, including a water treatment plant, holding ponds, sanitary and inert landfills, cemeteries, and open and forested buffer areas. The majority of the improvements associated with the gaseous diffusion plant (GDP) are located within the fenced area. Within this area are three large process buildings and auxiliary facilities that are currently leased to the United States Enrichment Corporation (USEC). A second, large developed area covering about 300 acres contains the facilities built for the Gaseous Centrifuge Enrichment Plant (GCEP), portions of which are leased to USEC. These areas are largely devoid of trees, with grass and paved areas dominating the open space. The remaining area within Perimeter Road has been cleared and is essentially level.

The uranium enrichment production and operations facilities at PORTS are leased by USEC. The lease between DOE and USEC is active through July 1, 2016, although some facilities may be returned to DOE on an earlier date. In addition to the leased facilities, USEC also leases common areas including ditches, creeks, ponds, and other areas such as roads and rail spurs that are necessary for ingress, egress, and proper maintenance of facilities.

The economic region of influence for PORTS includes four counties in southern Ohio: Ross, Scioto, Jackson, and Pike. The largest city within 50 miles of the plant is Chillicothe, Ohio with a population of 22,216 persons, based on year 2006 census

results. The City of Chillicothe is located approximately 27 miles north of PORTS in Ross County, Ohio.

The population of Pike County, where PORTS is located, was 28,269 persons in 2006. The other counties within the region of influence reported the following populations: Jackson County, Ohio (33,543), Ross County, Ohio (75,556), and Scioto County, Ohio (76,441) (U.S. Census Bureau). The nearest population center to PORTS is Piketon, Ohio, with a population of 1907 reported in the 2000 census.

b. DESCRIPTION OF THE REMOVAL ACTION PROJECT AREA AT THE SITE

Provide a general description of the facilities/buildings to be addressed in the EE/CA for each Removal Action project, their location(s), and nature of past operations. Include relevant existing information regarding pertinent area boundary features, pertinent physical geography at and near the Removal Action project area at the Site, and the total area(s) addressed in the PA. Also include the general nature of the problem with respect to the relevant historic use of the Removal Action project area at the Site, relevant history and operation (past and current) (including relevant generation of wastes/contaminants, relevant treatment, storage, and/or disposal activities at the Removal Action project area at the Site, and relevant past spills or discharges), relevant background information on land use, natural resources, and climatology. Applicable existing reports may be referenced. Information can include map(s) depicting relevant information identified by Respondent and Ohio EPA.

c. EXISTING DATA ANALYSIS

- Discuss the contents of facilities/buildings (including piping) to be addressed in the EE/CA for each Removal Action project, contamination and contaminants of concern, and nature and estimated volume of materials present. Include discussion of the presence of materials such as asbestos, lead, etc. within or expected to be present as part of the structures and contents of the facilities/buildings.

- Include discussion of different areas or "zones" in the facilities/buildings to be addressed in the EE/CA for each Removal Action project and the types of contamination and materials anticipated to be encountered (e.g., dust that may be present in upper floors of various facilities/buildings, duct work present on the main floor of various facilities/buildings, piping and fluids therein, etc.)

3.0 POTENTIAL THREAT TO HUMAN HEALTH, SAFETY AND THE ENVIRONMENT

This Section shall consist of a streamlined evaluation of the risk posed to human health, safety and the environment by the release or threat of release of contaminants from the facilities/buildings (including piping) to be addressed in the EE/CA for each Removal Action project sufficient to support a decision whether to remove, reuse, or take no action to address a given facility/building. (See Section 2.3.I.D of the Generic Statement of Work for Conducting an Engineering Evaluation/Cost Analysis (EE/CA) for the U.S. DOE Portsmouth Gaseous Diffusion Plant Facilities Decontamination and Decommissioning Evaluation projects) Address in Section 5.2 of each PA whether additional data is

necessary to support a streamlined evaluation.

4.0 POTENTIAL RECEPTOR IDENTIFICATION

This Section shall identify and discuss the following potential receptors that could be exposed to contaminants if a facility(ies)/structure(s) in a Removal Action project area at the Site continues to degrade: 1) on-Site (workers) and 2) off-Site (plant neighbors, other members of the public near the Site, and environmental receptors). Pathways to be considered should include direct exposure to the buildings and their contents for Site workers, and air emissions and water emissions that could impact off-Site receptors.

5.0 IDENTIFICATION OF DATA NEEDS AND DATA USAGE

a. REMOVAL SITE INSPECTION (RSI) WORK PLAN TASKS

Identify tasks and analyses to be completed under a RSIWP and discuss the types of data necessary to support completion of those tasks and analyses.

b. DATA NEEDS

Identify any additional data needed to support completion of a RSI and evaluation of alternatives for a Removal Action, along with an explanation of how the data will be used. If no additional data is needed for a Removal Action project, this Section shall include an affirmative statement that no more data is needed and an explanation as to why existing information is sufficient.

c. DATA QUALITY OBJECTIVES ANALYSIS OF RSI WORK PLAN TASKS

Identify and discuss Data Quality Objectives that will apply to any additional data identified as being necessary in Section 5.2 of this Outline.

Appendix B
Engineering Evaluation/Cost Analysis (EE/CA) Outline

Outline B

(Section 3.0 of Generic Statement of Work for Conducting an Engineering Evaluation/Cost Analysis (EE/CA) for the U.S. DOE Portsmouth Gaseous Diffusion Plant Facilities Decontamination and Decommissioning Evaluation Projects)

Headings for sections to be included in an EE/CA appear as ALL CAPS. Text in italics describes the contents to be included within each EE/CA Section.

EXECUTIVE SUMMARY

The executive summary appears on a separate page or pages in the front of the document and briefly summarizes the overall engineering evaluation/cost analysis (EE/CA) report, results, and the recommended Removal Action alternative. Items included in the summary may include the following, as appropriate:

- description of the Removal Action project area at the Site;
- Removal Action Objectives (RAOs);
- Removal Action technologies/alternatives;
- evaluation of alternatives for Removal Action; and
- recommended Removal Action.

1. INTRODUCTION TO THE D&D PROCESS

This Section briefly describes the D&D process:

1.1. PURPOSE

Provide a statement explaining that the EE/CA is a required document under the Orders and the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), and that the purpose of the EE/CA is to present and evaluate relevant data to support a determination as to the need for Removal Action, define the specific objectives of any necessary Removal Action, evaluate Removal Action alternatives in accordance with CERCLA, NCP criteria, and the Orders, identify a recommended Removal Action alternative, and present the recommended Removal Action to the public for its review and comment prior to issuing an Action Memorandum selecting the Removal Action to be implemented.

1.2. PHASES OF THE D&D PROCESS

This Section presents a brief discussion of the two main phases of the D&D process: decontamination and dismantling of the facility.

The following suggested language should be used (with any appropriate modifications to reflect changes between the time this Outline was written and the time each EE/CA is written):

The D&D process encompasses activities described in Paragraph 5.e of the Orders.

The [INSERT NAME OF BUILDING/STRUCTURE/FACILITY] D&D activities will be conducted as a non-time-critical Removal Action pursuant to the Orders.

Note: This Section should address potential reuse, where appropriate.

1.3. COMMUNITY PARTICIPATION

This Section discusses community involvement under CERCLA and the Orders.

The following suggested language should be used (with any appropriate modifications to reflect changes between the time this Outline was written and the time each EE/CA is written):

Community involvement is a necessary aspect of the CERCLA process and the Orders. DOE is required to conduct community relations activities for this Removal Action project in compliance with the NCP and the Orders. State and community acceptance of this action will be addressed by providing the EE/CA to the public, regulators, consulting parties, and the Site Specific Advisory Board for information and comment. Specifically, a brief description of this EE/CA and a notice of availability of the entire document will be published in the local newspaper(s). Public stakeholders will have at least 30 days to review the EE/CA and submit written and oral comments. A written response will be prepared addressing significant comments and will be included in the Administrative Record file. DOE also will hold a public meeting during the 30 day public review and comment period.

This Section shall also discuss any other specific relevant community participation activities that have been conducted in connection with the Removal Action project that is the subject of the EE/CA.

2. SITE CHARACTERIZATION

This Section should consist of the information in Section 2.0 of the Preliminary Assessment (PA) regarding the Site background, current Removal Action project area conditions, and nature and extent of contamination as set forth in the following subsections. (See Appendix A to the Generic Statement of Work for Conducting an Engineering Evaluation/Cost Assessment (EE/CA) for the U.S. DOE Portsmouth Gaseous Diffusion Plant Facilities Decontamination and Decommissioning Evaluation projects).

2.1. PORTSMOUTH FACILITY AND REMOVAL ACTION PROJECT AREA DESCRIPTION AND NATURE AND EXTENT OF CONTAMINATION

This Section should consist of the information in Section 2.0(a), Section 2.0(b), and Section 2.0(c) of the Preliminary Assessment (PA). (See Appendix A to the Generic Statement of Work for Conducting an Engineering Evaluation/Cost Assessment (EE/CA) for the U.S. DOE

Portsmouth Gaseous Diffusion Plant Facilities Decontamination and Decommissioning Evaluation projects).

2.1.1. Portsmouth Facility Description

This Section should consist of the relevant information in Section 2.0(a) of the Preliminary Assessment (PA). (See Appendix A to the Generic Statement of Work for Conducting an Engineering Evaluation/Cost Assessment (EE/CA) for the U.S. DOE Portsmouth Gaseous Diffusion Plant Facilities Decontamination and Decommissioning Evaluation projects). Discuss the relevant historic operations of each of the facilities/buildings, including the types of waste(s) produced, disposed of, or handled, and the historical, operational, and management practices in the Removal Action project area of the Site. Also include information concerning the presence of materials such as asbestos, lead, etc. within or expected to be present as part of the structures and contents of the facilities/buildings in the Removal Action project area.

2.1.2 Description of the Removal Action Project Area at the Site

This Section should consist of the relevant information in Section 2.0(b) of the Preliminary Assessment (PA). (See Appendix A to the Generic Statement of Work for Conducting an Engineering Evaluation/Cost Assessment (EE/CA) for the U.S. DOE Portsmouth Gaseous Diffusion Plant Facilities Decontamination and Decommissioning Evaluation projects).

2.1.3 Nature and Extent of Contamination

This Section should consist of the information in Section 2.0(c) of the Preliminary Assessment (PA) (See Appendix A to the Generic Statement of Work for Conducting an Engineering Evaluation/Cost Assessment (EE/CA) for the U.S. DOE Portsmouth Gaseous Diffusion Plant Facilities Decontamination and Decommissioning Evaluation projects), as well as additional information developed as a result of any RSI activities. With respect to RSI information, this Section will either summarize the results of an RSI Report (if one is developed) or, upon agreement of Respondent and Ohio EPA, incorporate the results of a RSI into an EE/CA in lieu of submitting and finalizing a RSI Report. Discuss contaminants and their sources anticipated to be present in the Removal Action project area at the Site, including their location; quantity; volume, size, or magnitude; and physical and chemical characteristics of the hazardous substance(s), pollutant(s), or contaminant(s). Provide the rationale or basis for the anticipated hazardous substance(s), pollutant(s), or contaminant(s). Information may be provided to Ohio EPA in an acceptable electronic format, if available.

The detail of this Section may be greater if RSI information is not documented elsewhere. However, if RSI information is presented elsewhere; summary information may be contained in this Section with references to existing more detailed RSI information.

2.1.4 Previous Removal Actions

This Section should discuss any previous relevant investigations and removal/cleanup actions that have taken place at the facilities/buildings in each Removal Action project area at the Site.

Where relevant to Removal Action selection or performance, include the analytical results of previous investigations and Removal Actions in an agreed upon format.

2.1.5 Preliminary Assessment of Releases

This Section summarizes the conclusions of previous investigations (if any) regarding releases of contaminants at facilities/buildings in each Removal Action project area at the Site.

2.1.6 Streamlined Risk Evaluation

This Section should consist of the information in Section 3.0 and Section 4.0 (with respect to potential receptors) of the Preliminary Assessment (PA). (See Appendix A to the Generic Statement of Work for Conducting an Engineering Evaluation/Cost Assessment (EE/CA) for the U.S. DOE Portsmouth Gaseous Diffusion Plant Facilities Decontamination and Decommissioning Evaluation projects). If an RSI is performed, this Section should also incorporate relevant information resulting from the RSI. The streamlined risk evaluation should identify contaminants of concern at the facilities/buildings, discuss contaminant levels and any toxicity issues, identify exposure pathways (including any exposure pathways that indicate an obvious threat to human health or the environment based on comparison with relevant chemical-specific ARARs), identify potential receptors, and be of sufficient detail to support the Removal Action.

2.1.7 Federal, State, and Local Applicable or Relevant and Appropriate Requirements and TBCs

This Section shall identify existing Federal, State, and Local ARARs and TBCs that are anticipated to apply to activities to be evaluated under the removal alternatives. The ARARs list will identify location-specific, action-specific, and chemical-specific ARARs that apply to facility/building removal activities and waste management for materials anticipated to be encountered in the facilities/buildings in each Removal Action project area at the Site.

The complete ARARs list is typically presented in tabular form in an appendix to an EE/CA.

When DOE proposes a Removal Action regulated under CERCLA that, in the absence of CERCLA section 121(e)(1) and the NCP, would require a federal or State permit, DOE shall include in the submittal:

a) Identification of each permit which would otherwise be required;
b) Identification of the substantive standards, requirements, criteria, or limitations which would have had to have been met to obtain each such permit;
c) Explanation of how the Removal Action proposed will meet the standards, requirements, criteria, or limitations identified in subparagraph b immediately above.

3. REMOVAL ACTION SCOPE, OBJECTIVES, AND SCHEDULE

3.1. REMOVAL ACTION JUSTIFICATION

This Section should discuss the factors supporting the determination that a Removal Action is necessary. The Section should explain how the statutory criteria relating to imminent and substantial endangerment from a release or threatened release of a hazardous substance, pollutant, or contaminant are satisfied. This Section must identify the hazardous substance(s), pollutant(s), or contaminant(s), discuss the factors establishing an actual or threatened release, and explain the endangerment posed by the hazardous substance(s), pollutant(s), or contaminant(s) in question. This Section also should discuss the rationale for conducting the work as a Removal Action.

3.2. REMOVAL ACTION SCOPE AND OBJECTIVES

This Section should identify and discuss the Removal Action Objectives (RAOs).

a. REMOVAL ACTION OBJECTIVES (RAOs)

This Section should identify and discuss the following RAOs:

- Determine whether reuse is viable (taking into account factors such as nature and extent of contamination, physical condition of the facility(ies)/structure(s), costs associated with bringing the facility(ies)/structure(s) into compliance with applicable standards and codes, past use/operations, location, any identified future need or use, etc.). If reuse is determined to be viable, the EE/CA will include a Removal Action alternative for facility/structure reuse. If reuse is determined not to be viable, the EE/CA must specifically state that reuse is not viable, provide an explanation supporting that determination, and indicate that the EE/CA will not include a Removal Action alternative for facility/structure reuse.
- Meet ARARS to the extent practicable (e.g., NCP standard)
- Be protective of relevant receptors
- Be cost effective

3.3. REMOVAL ACTION PLANNING SCHEDULE

Present a planning schedule for conducting a Removal Action. The schedule should show the sequence of activities necessary to implement a Removal Action. Enforceable Milestones for the Removal Action shall be established in accordance with the provisions of the Orders. Under the Orders, only Milestones identified as such in schedules are enforceable components of the schedules.

4.0 DEVELOPMENT OF REMOVAL ACTION ALTERNATIVES

This Section should identify and discuss the identification of removal technologies and

process options and the development of the Removal Action alternatives to be evaluated in an EE/CA.

4.1 REMOVAL ACTION ALTERNATIVES

a. IDENTIFICATION OF REMOVAL TECHNOLOGIES AND PROCESS OPTIONS [EE/CA]

This Section should identify and discuss existing removal technologies and process options to be evaluated in an EE/CA. The information may be presented textually, in a table format, or a combination of text and table. If appropriate, an additional technology screening step can be conducted to limit the number of technologies on the basis of effectiveness, implementability, and cost evaluation. However, the typical EE/CA technology screening process is focused and evaluates only those technologies that have proven to be effective at similar sites. In most cases, this Section will discuss building dismantlement and size-reduction technologies (including pipe/utility separation/disconnection/sealing and lead-based paint/asbestos removal), concrete slab and foundation decontamination, stabilization, and removal technologies, waste containerization options, and waste disposal options.

b. DEVELOPMENT OF REMOVAL ACTION ALTERNATIVES

Based on the results of the activities under Section 4.1(a) of this outline, identify preliminary alternatives to be evaluated under an EE/CA. A No Action alternative must always be included as a baseline for comparison against the other Removal Action alternatives. In addition, an EE/CA will consider a Removal Action alternative for facility/building contents removal, structure removal, and waste disposal. EE/CAs will also consider a Removal Action alternative for facility/building reuse where a determination has been made under Section 3.2(a) of this outline that reuse is viable. Every Removal Action alternative except "no action" shall identify ARARs for that alternative, and any of those ARARs with which that alternative will not, in whole or in part, comply.

5.0 ANALYSIS OF REMOVAL ACTION ALTERNATIVES

This Section presents an individual analysis of each alternative based on the required criteria of effectiveness, implementability, and cost. Effectiveness considers overall protection of human health, safety and the environment, compliance with ARARs, long-term effectiveness and permanence, and short-term effectiveness. Implementability considers the technical and administrative feasibility of implementing an alternative and the availability of various services and materials required during implementation. Cost evaluates each alternative to determine the projected costs, including, as appropriate, capital costs, operating and maintenance costs, and periodic costs.

6.0 COMPARATIVE ANALYSIS OF REMOVAL ACTION ALTERNATIVES

This Section evaluates the relative performance of each alternative in relation to effectiveness, implementability, and cost. This evaluation may be presented textually, in table form, or a combination of text and table.

7.0 RECOMMENDED REMOVAL ACTION ALTERNATIVE

Identify the Removal Action alternative that best satisfies the evaluation criteria based on the comparative analysis presented in Section 6. Include a discussion of the evaluation process used to choose the recommended Removal Action.

REFERENCES

APPENDICES

EXHIBITS

ATTACHMENT E

REMOVAL ACTION WORK PLAN OUTLINE

Note: In the event of any conflict between this Attachment and the Director's Final Findings and Orders to which it is appended ("Orders"), the provisions shall be construed if possible so that effect is given to both, however, if the conflict is irreconcilable, the provisions of the Orders shall prevail.

EXECUTIVE SUMMARY

Include an executive summary in each Removal Action Work Plan (RAWP). The executive summary, written as a "stand-alone" element of the document, appears on a separate page in the front of the document.

The executive summary provides a complete yet concise synopsis of the document contents, including a brief description of relevant portions of the Action Memorandum (AM) that guided activities performed as part of the Removal Action project, and including a proposed schedule that includes a completion schedule for each Work task and clearly identifies which completion schedules are Milestones. Summarize any meaningful deviations (e.g., technical field changes, cost variances, revised assumptions) from the AM made thus far during the Removal Action project. Particular mention should be made of any additional benefits provided, cost savings, or risks abated. Specify the process for final Removal Action selection.

1. INTRODUCTION

State the purpose, scope, and content of each RAWP. A major purpose of this document is to answer the questions of what, where, when, why and how as they relate to implementing each Removal Action project. It is also appropriate in this section to provide a brief (one or two paragraphs) introduction to each Removal Action project, but any detailed discussion of scope and related issues for a Removal Action project should be deferred to Section 3, Project Description. The Introduction should reference the corresponding Action Memorandum (AM) and Engineering Evaluation/Cost Analysis (EE/CA).

2. REMOVAL ACTION PROJECT AREA DESCRIPTION

Summarize the relevant operational history of the Removal Action project area and the releases of contaminants of concern. Include a summary of previous investigations, Remedial Actions, construction phases and maintenance activities, or Removal Actions at or near the Removal Action project area. Provide one or more figures presenting the location of the Removal Action

project area and the attributes of the Removal Action (e.g., locations where soil will be laid back during structure removal and where pipes will be cut off and capped).

This section presents a brief description of the physical conditions of the Removal Action project area, including contaminants of concern being removed under this action. Although brief, the Removal Action project area description is comprehensive enough that a reader unfamiliar with the action is able to understand the Removal Action project setting and the rationale for the Removal Action project. The Removal Action project area description or introduction sections of the AM contain brief summaries of the Removal Action project area information that may be adequate for this purpose.

3. REMOVAL ACTION PROJECT DESCRIPTION

Provide a concise discussion of the Removal Action project goals, performance objectives, and other requirements as delineated in the AM. Additional major Removal Action project goals, if any, developed during the design, should also be provided, but differentiated from those listed in the AM. Ideally, the Removal Action project will be defined by a measurable set of goals, and the achievement of these goals is anticipated through the implementation of the Removal Action project activities.

Compliance with applicable or relevant and appropriate requirements (ARARs) (e.g., waste segregation, characterization, and management; protection of wetlands; and prevention or regulation of releases to air or surface water) shall be identified as a Removal Action project goal. Reference the previous document where the Removal Action project ARARs are listed, if available. For Removal Actions, emphasis is placed on incorporation of ARARs into the planning and construction process. A summary table of ARARs, cross-referenced to the mechanism by which each requirement will be met, can be provided in an Appendix.

If a Removal Action will not meet the project goal of compliance with ARARs and any waivers from or alterations to any ARARs are contemplated during the planning or preparation of the design, they must be identified. Under CERCLA 121(e), no permits are required for Work performed entirely on-site; CERCLA 121(e), however, requires compliance with the substantive requirements of permits [e.g., discharge meets effluent limits but no National Pollutant Discharge Elimination System (NPDES) permit required]. When DOE proposes a Removal Action regulated under CERCLA that, in the absence of CERCLA section 121(e)(1) and the NCP, would require a federal or State permit, DOE shall include in the submittal:

a) Identification of each permit which would otherwise be required;

b) Identification of the substantive standards, requirements, criteria, or limitations which would have had to have been met to obtain each such permit;
c) Explanation of how the Removal Action proposed will meet the standards, requirements, criteria, or limitations identified in subparagraph b immediately above.

Provide a concise discussion of the Removal Action project scope. Describe any post-AM data acquisition activities (e.g., field investigations, surveys) performed to support design and summarize the results and how they have been used. Provide all additional data and maps or figures relevant to data needed to support the selected removal alternative (e.g., hazard analysis). List each Work element (e.g., mobilization, Removal Action project area preparation, piping removal and capping, trench construction, etc.) and then describe the planned activities or tasks to be constructed relative to each Work element.

Describe any alterations made to the scope as defined in the AM. Specifically, identify any changes made and explain the rationale for these changes, including the risk abated (if any), the long-term environmental benefits realized and the time or level of effort saved.

4. REMOVAL ACTIVITIES

In this section, describe the following:

- What is present at the Removal Action project area (e.g., the appearance and condition of the Removal Action project area, the piping, structures, debris, and water levels present);

- Removal efforts, Work activities, and start-up activities expected to be performed for the Removal Action project along with hazard controls/mitigation techniques;

- Demolition/construction, monitoring, or sampling activities (i.e., describe in detail the equipment and techniques that will be utilized for the specified Removal Action project);

- The expected post-removal or "as-left" appearance, status and condition of the Removal Action project area, including but not limited to, any piping to be capped and left in place;

- How the Removal Action will achieve the expected goal or expectation;

- Description of verification/confirmation testing (if appropriate) (maps or figures detailing sampling locations if appropriate);

- Anticipated final inspection and certification (if appropriate) steps that the Removal Action is completed;

- How supporting documentation information associated with the Removal Action will be maintained, recorded and filed.

Any modification to the Work described in this Section which results in a significant deviation from the RAWP concurred with or approved by Ohio EPA shall be submitted to Ohio EPA for review in accordance with the Review of Submissions Section of the Orders.

5. WASTE MANAGEMENT AND TRANSPORTATION ACTIVITIES

In this section, present a description of the waste materials expected to be recovered, generated, stored, treated, or disposed of during the performance of a Removal Action. Describe the waste characterization and segregation and any potential staging activities. For example, include description of types and amounts of wastes or contaminated media generated (e.g., Resource Conservation and Recovery Act, polychlorinated biphenyl, low-level waste, or media containing any waste types). Include a statement that the waste management activities are expected to be conducted in accordance with ARARs and the Waste Management Plan or other applicable plans (e.g., Storm Water Pollution Prevention Plan if waste is staged). Describe transportation activities that are expected to occur for the Removal Action, including the quantities and disposition of materials removed from the Removal Action project area and transported elsewhere on-Site and/or off-Site, as well as the expected method of shipment (e.g., rail, truck, etc.), storage and potential disposal facilities.

6. PLANS

Plans must be prepared as part of the Removal Action project design and construction/demolition. The names and types of plans in a Removal Action project are variable and dependent on such things as type of work performed, coverage and scope, division of work among contractors, and desired coverage or scope of each plan. Plans submitted as part of a RAWP can be inserted into this section, appended to the document, or referenced. If a plan is referenced, the plan will be provided upon request. A list of plans is summarized below.

Plans summarized only in the RAWP	**Description**	**Comments (may be referenced in RAWP and provided upon requested)**
Environmental, Safety, and Health (ES&H) Plan	Addresses hazards specific to each work element, how the	Finalized prior to the start of construction/demolition.

	Removal Action project will comply with environmental laws and regulations, and other issues such as area monitoring, worker training and safety, decontamination, and emergency response.	Includes or references a radiation protection as low as reasonably achievable" (ALARA) plan
Quality Assurance Project Plan (QAPP)	Addresses the quality requirements and provides management direction during Removal Action project activities.	Finalized prior to the start of construction/demolition.
Waste Management Plan	Describes the process and methods that will be used to ensure safe and compliant management of waste, including minimization, identification, segregation, characterization, profiling, certification, labeling, marking, packaging, tracking and transport of materials to an approved treatment, storage, disposal or recycle facility.	For waste management, finalized prior to the start of construction/demolition. Includes or references a waste characterization sampling and analysis plan (SAP). For transportation of materials, finalized prior to the shipment of any waste material to an approved treatment, storage, disposal, or recycle facility.
Sampling and Analysis Plan	Describes the types of samples along with the method of analyses to be performed.	Can include information for additional characterization or verification samples. Provide data for additional characterization and verification samples.

7. REMOVAL ACTION PROJECT ORGANIZATION AND SCHEDULE

As appropriate, include a brief description (or organization chart) of the key organizations involved in the Removal Action project.

Provide the Removal Action project schedule in a chart or table with the schedule broken down into major phases or components. The schedule shall reflect completed Milestones to date and any future Milestones. Note: Cost estimates will generally not be provided in the RAWP.

8. OPERATION AND MAINTENANCE PLANS (AS REQUIRED)

Generally, long-term operation and maintenance (O&M) plans for a Removal Action, if needed, are presented in the RAWP. The plan can be inserted into this section or appended to the RAWP. If O&M protocols were established in the AM, compare these protocols against the O&M Plan and either verify their consistency or explain any discrepancies.

9. MONITORING PLANS (AS REQUIRED)

Generally, long-term monitoring plans for a Removal Action project, if needed, are presented in the RAWP. The plan can be inserted into this section, or, if monitoring requirements are extensive, it can be appended to the report. If monitoring protocols were established in the AM, compare these protocols against the monitoring plan and either verify their consistency or explain any discrepancies.

10. REMOVAL ACTION PROGRESS REPORTS

The Respondent shall at a minimum provide Ohio EPA with quarterly progress reports during each Removal Action project containing the information listed below. When appropriate, a Removal Action Work Plan shall specify progress reports to be submitted more frequently.

1) A description of the Work performed during the reporting period and estimate of the percentage of the Removal Action completed;
2) Summaries of all findings and sampling during the reporting period;
3) Summaries of all changes made in the Removal Action during the reporting period, indicating consultation with Ohio EPA and approval by Ohio EPA of those changes, when necessary;
4) Summaries of all notable problems or potential problems encountered during the reporting period, including those which delay or threaten to delay completion of any project Milestones with respect to the approved schedule;
5) Summaries of actions taken and being taken to rectify problems;
6) Summaries of actions taken to achieve and maintain cleanup standards and performance standards;
7) Changes in key personnel during the reporting period;
8) Projected work for the next reporting period;
9) Summaries of daily reports, inspection reports, sampling data, laboratory/ monitoring data, etc.; and

10) Any significant community comments/concerns identified to Respondent in connection with Removal Action construction.

In addition, upon request, Respondent shall provide laboratory data or additional information to Ohio EPA in accordance with the provisions of the Orders.

Attachment F

[ENVIRONMENTAL COVENANT TEMPLATE]

To be recorded with Deed Records - ORC § 317.08

ENVIRONMENTAL COVENANT

This Environmental Covenant is entered into by _____ ("Owner") *[name all Owners of the Property and add other "Holders," if any]* and the Ohio Environmental Protection Agency ("Ohio EPA") pursuant to Ohio Revised Code ("ORC") §§ 5301.80 to 5301.92 for the purpose of subjecting the Property to the activity and use limitations set forth herein.

[Insert appropriate background information here, using available program-specific guidance. Identify the "site" or portion thereof subject to this environmental covenant. Describe the "environmental response project," see ORC § 5301.80(E), and identify the name and location of the administrative record for the project. See ORC § 5301.82(A)(8). See also ORC § 5301.82(B)(2) re: description of contamination on or underlying the property and its remedy, including the contaminants of concern, the pathways of exposure, limits on exposure, and the location and extent of the contamination.]

Now therefore, Owner[*s*] *[name all Owners of the Property and add other "Holders," if any]* and Ohio EPA agree to the following:

1. Environmental Covenant. This instrument is an environmental covenant developed and executed pursuant to ORC §§ 5301.80 to 5301.92.

2. Property. This Environmental Covenant concerns *[an approximately acre tract of real property; OR real property parcels numbered _____]* owned by _____, located at _____, in _____ County, Ohio, and more particularly described in Exhibit A attached hereto and hereby incorporated by reference herein ("Property").

3. Owner[*s*]. _____ ("Owner[*s*]") [who resides; OR which is located] at _____ _____, _____, _____ is the owner of the Property.

4. Holder[s]. Owner[*s*], whose address is listed above, [and _____ {who resides; OR which is located} at _____ _____, _____, _____] [is/are] the holder[s] of this Environmental Covenant.

5. Activity and Use Limitations. As part of the *[remedial action or removal action described in the Record of Decision or Action Memorandum]*, Owner[*s*] hereby impose[*s*] and agree[*s*] to comply with the following activity and use limitations: *[Insert the limitations appropriate for the Property. Several limitations may be appropriate as part of a remedial action or removal action or closure plan where cleanup to an unrestricted land use is not feasible. Each type of limitation must be considered on a Property-specific basis to determine which limitation or combination of limitations is suitable for the particular circumstances of the Property, based on the applicable program standards or cleanup goals, the nature of contamination, the affected media and the potential exposures. The types of limitations could include:*

land use *limitations (e.g., to limit duration and frequency of human exposure to surficial soils, surface water, or sediments.)*

ground water *limitations (e.g., to prevent exposure to contaminated ground water by prohibiting extraction or use of ground water, except for investigation or remediation thereof.)*

disturbance *limitations (e.g., to protect in-place remedial systems, to prevent exposures caused by any mixing of contaminated subsurface soils with "clean" surface soils, and to prevent contact with subsurface contamination during excavation.)*

construction *limitations (e.g., to prevent exposure to volatile emissions to indoor air from soil or ground water.)*

resource protection *limitations (e.g., to protect certain ecological features associated the Property . . .)]*

6. Running with the Land. This Environmental Covenant shall be binding upon the Owner[*s*] and all assigns and successors in interest, including any Transferee, and shall run with the land, pursuant to ORC § 5301.85, subject to amendment or termination as set forth herein. The term "Transferee," as used in this Environmental Covenant, shall mean any future owner of any interest in the Property or any portion thereof, including, but not limited to, owners of an interest in fee simple, mortgagees, easement holders, and/or lessees.

7. Compliance Enforcement. Compliance with this Environmental Covenant may be enforced pursuant to ORC § 5301.91 to the extent consistent with applicable federal law. Failure to timely enforce compliance with this Environmental Covenant or the activity and use limitations contained herein by any party shall not bar subsequent enforcement by such party and shall not be deemed a waiver of the party's right to take action to enforce any non-compliance. Nothing in this Environmental Covenant shall restrict the Director of Ohio EPA from exercising any authority under applicable law, nor

shall anything in this Environmental Covenant limit any of Owner's defenses under applicable law.

8. Rights of Access. Owner[*s*] hereby grant[*s*] to Ohio EPA, its agents, contractors, and employees *[and any "Holders;" the local government, etc.; see ORC §§ 5301.82(A)(6) and 5301.91(A)]* the right of access to the Property for implementation or enforcement of this Environmental Covenant. Ohio EPA agrees that it will comply with all applicable statutes, rules, regulations and Facility requirements related to health, safety, and Site security.

9. Compliance Reporting. Owner[*s*] or any Transferee shall submit to Ohio EPA *[local government, "Holders" other than Owner]* on [*an annual*] basis written documentation verifying that the activity and use limitations remain in place and are being complied with.

10. Notice upon Conveyance. Each instrument hereafter conveying any interest in the Property or any portion of the Property shall contain a notice of the activity and use limitations set forth in this Environmental Covenant, and provide the recorded location of this Environmental Covenant. The notice shall be substantially in the following form:

> THE INTEREST CONVEYED HEREBY IS SUBJECT TO AN ENVIRONMENTAL COVENANT, DATED_____, 201_, RECORDED IN THE DEED OR OFFICIAL RECORDS OF THE _____COUNTY RECORDER ON _____, 201_, IN [DOCUMENT ____, *or* BOOK___, PAGE ____,]. THE ENVIRONMENTAL COVENANT CONTAINS THE FOLLOWING ACTIVITY AND USE LIMITATIONS: *[Insert the language that describes the activity and use limitations exactly as it appears in the Environmental Covenant.]*

Owner[*s*] shall notify Ohio EPA within sixty (60) days after each conveyance by Owner of an interest in any portion of the Property. Owner's[*s'*] notice shall include the name, address, and telephone number of the Transferee, a copy of the deed or other documentation evidencing the conveyance, and a survey map that shows the boundaries of the property being transferred.

11. Representations and Warranties. Owner[*s*] hereby represent[*s*] and warrant[*s*] to the other signatories hereto:

A. that the Owner[*s*] is [*are*] the sole owner[*s*] of the Property;

B. that the Owner[*s*] hold[s] fee simple title to the Property which is
[use either of the following, as appropriate:]
free, clear and unencumbered; [or]
subject to the interests or encumbrances identified in Exhibit B attached hereto and incorporated by reference herein;

C. that the Owner[*s*] has [*have*] the power and authority to enter into this Environmental Covenant, to grant the rights and interests herein provided and to carry out all obligations hereunder;

D. that the Owner[*s*] has [*have*] identified all other persons that own an interest in or hold an encumbrance on the Property and notified such persons of the Owner's[*s'*] intention to enter into this Environmental Covenant;[*and*]

E. that this Environmental Covenant will not materially violate or contravene or constitute a material default under any other agreement, document or instrument to which Owner[*s*] is [*are*] a party or by which Owner[*s*] may be bound or affected.

12. Amendment or Termination. This Environmental Covenant may be amended or terminated by consent of all of the following: the Owner[*s*] or a Transferee; [*other "Holders," if any;*] and the Ohio EPA,[1] pursuant to ORC § 5301.90 and other applicable law. The term, "Amendment," as used in this Environmental Covenant, shall mean any changes to the Environmental Covenant, including the activity and use limitations set forth herein, or the elimination of one or more activity and use limitations when there is at least one limitation remaining. The term, "Termination," as used in this Environmental Covenant, shall mean the elimination of all activity and use limitations set forth herein and all other obligations under this Environmental Covenant.

This Environmental Covenant may be amended or terminated only by a written instrument duly executed by the Director of Ohio EPA and the Owner[*s*] or Transferee *[and other "Holders," if any]* of the Property or portion thereof, as applicable. Within thirty (30) days of signature by all requisite parties on any amendment or termination of this Environmental Covenant, the Owner[*s*] or Transferee shall file such instrument for

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[1] *See ORC § 5301.82 (B) (3), which allow for "limitations on amendment or termination."*

recording with the _____ County Recorder's Office, and shall provide a file- and date-stamped copy of the recorded instrument to Ohio EPA.

13. Severability. If any provision of this Environmental Covenant is found to be unenforceable in any respect, the validity, legality, and enforceability of the remaining provisions shall not in any way be affected or impaired.

14. Governing Law. This Environmental Covenant shall be governed by and interpreted in accordance with the laws of the State of Ohio and applicable federal law.

15. Recordation. Within [*thirty (30)*] days after the date of the final required signature upon this Environmental Covenant, Owner[*s*] shall file this Environmental Covenant for recording, in the same manner as a deed to the Property, with the _____ County Recorder's Office.

16. Effective Date. The effective date of this Environmental Covenant shall be the date upon which the fully executed Environmental Covenant has been recorded as a deed record for the Property with the _____ County Recorder.

17. Distribution of Environmental Covenant. The Owner[*s*] shall distribute a file- and date-stamped copy of the recorded Environmental Covenant to: Ohio EPA; the [*City, County, Township, Village*] of _____; *[any "Holder," any lessee, each person who signed the Environmental Covenant, each person holding a recorded interest in the Property; and any other person designated by Ohio EPA; see ORC § 5301.83].*

18. Notice. Unless otherwise notified in writing by or on behalf of the current owner of Ohio EPA, any document or communication required by this Environmental Covenant shall be submitted to:

[title or position]
Division of [_____]
Ohio EPA
P.O. Box 1049
Columbus, Ohio 43216-1049

[title or position]
[address]

The undersigned [representative of] Owner[*s*] *[and other "Holders," if any]* represent[s] and certif[y/ies] that *[he/she/they]* [*is/are*] authorized to execute this Environmental Covenant.

IT IS SO AGREED:

[NAME OF OWNER]

_____
Signature of Owner[*s*]

_____ _____
Printed Name and Title Date

State of _____)
) ss:
County of _____)

Before me, a notary public, in and for said county and state, personally appeared _____, a duly authorized representative of _____, who acknowledged to me that *[he/she]* did execute the foregoing instrument on behalf of _____.

IN TESTIMONY WHEREOF, I have subscribed my name and affixed my official seal this _____day of _____, 20__.

_____
Notary Public

OHIO ENVIRONMENTAL PROTECTION AGENCY

_____ _____
Chris Korleski, Director Date

State of Ohio)
) ss:
County of Franklin)

Before me, a notary public, in and for said county and state, personally appeared Chris Korleski, the Director of Ohio EPA, who acknowledged to me that he did execute the foregoing instrument on behalf of Ohio EPA.

IN TESTIMONY WHEREOF, I have subscribed my name and affixed my official seal this _____day of _____, 20__.

_____
Notary Public

[NAME OF HOLDER]

_____
Signature of Holder

_____ _____
Printed Name and Title Date

State of _____)
) ss:
County of_____)

Before me, a notary public, in and for said county and state, personally appeared _____, a duly authorized representative of _____, who acknowledged to me that *[he/she]* did execute the foregoing instrument on behalf of _____.

IN TESTIMONY WHEREOF, I have subscribed my name and affixed my official seal this _____day of _____, 20__.

_____
Notary Public

This instrument prepared by:

[name, address]

ATTACHMENT G

List of Non-Time Critical Removal Action (EE/CA) Groups

Group 1
Low Risk/Low Complexity

No.	Facility No.	Facility Name
1	F	Utility Shed South of X-622
2	X-103	Auxiliary Office Building
3	X-106	Tactical Response Building
4	X-106C	New Fire Training Building
5	X-108A	South Portal & Shelter - Drive Gate
6	X-108B	North Portal and Shelter
7	X-108E	Construction Entrance Portal
8	X-108H	Pike Ave Portal
9	X-109A	Personnel Monitoring Building
10	X-109B	Personnel Monitoring Building
11	X-109C	Personnel Monitoring Station
12	X-111A	SNM Monitoring Portal
13	X-111B	SNM Portal Northwest
14	X-120H	Weather Station

Note: The list of facilities above excludes environmental media (soil, sediment, pond, and groundwater) other than residual soil as discussed in Section III. Definitions, Paragraph 5.e. Decontamination and Decommissioning.

No.	Facility No.	Facility Name
15	X-215D	Electrical Power Tunnels
16	X-230J4	Environmental Air Sampling Station
17	X-230J2	South Environmental Sample Building
18	X-230J3	West Environmental Sampling Building for Intermittent Containment Basin
19	X-230J5	West Holding Pond Oil Separation Station
20	X-230J6	Northeast Holding Pond Monitoring Facility, and Secondary Oil Collection Building
21	X-230J7	East Monitor Facility (East Holding Pond Oil Separation Building)
22	X-230J8	Environmental Storage Building
23	X-230J9	North Environmental Sample Building
24	X-300A	Process Monitoring Building
25	X-300B	Plant Control Facility Carport
26	X-300C	Emergency Communications Antenna

Note: The list of facilities above excludes environmental media (soil, sediment, pond, and groundwater) other than residual soil as discussed in Section III. Definitions, Paragraph 5.e. Decontamination and Decommissioning.

No.	Facility No.	Facility Name
27	X-334	Transformer Cleaning & Storage Building
28	X-344B	Maintenance Storage Building
29	X-345	SNM Storage Building
30	X-605	Sanitary Water Control House
31	X-605H	Booster Pump House
32	X-605I	Chlorinator Building
33	X-605J	Diesel Generator Building
34	X-611B1	Lagoon Supernatent Pumping Station
35	X-611B2	Lagoon Supernatent Pumping Station
36	X-611B3	Lagoon Supernatent Pumping Station
37	X-611C	Filter Building
38	X-611D	Recarbonization Instrumentation Building
39	X-611E	Clear Well & Chlorine Building
40	X-612	Elevated Storage Tank
41	X-614A	Sewage Pumping Station
42	X-614B	Sewage Pumping Station
43	X-614D	South Sewage Lift Station

Note: The list of facilities above excludes environmental media (soil, sediment, pond, and groundwater) other than residual soil as discussed in Section III. Definitions, Paragraph 5.e. Decontamination and Decommissioning.

No.	Facility No.	Facility Name
44	X-614P	North East Sewage Lift Station
45	X-617	South Holding Pond pH Control Facility
46	X-618	North Holding Pond Storage Building
47	X-630-3	Acid Handling Station
48	X-640-1	Fire Water Pump House
49	X-640-2	Elevated Storage Tank
50	X-701E	Neutralization Building
51	X-701F	Effluent Monitoring Facility
52	X-710A	Technical Service Gas Manifold Shed
53	X-720B	Radio Base Station
54	X-720C	Paint & Storage Building
55	X-735A	Landfill Utility Building
56	X-741	Oil Drum Storage Facility
57	X-742	Gas Cylinder Storage Facility
58	X-743	Lumber Storage Facility
59	X-744B	Salt Storage Building
60	X-744G	Bulk Storage Building

Note: The list of facilities above excludes environmental media (soil, sediment, pond, and groundwater) other than residual soil as discussed in Section III. Definitions, Paragraph 5.e. Decontamination and Decommissioning.

No.	Facility No.	Facility Name
61	X-744H	Bulk Storage Building
62	X-744J	Bulk Storage Building
63	X-744K	Warehouse-K
64	X-744L	Stores and Maintenance Warehouse
65	X-744N	Warehouse N Non-UEA
66	X-744P	Warehouse P Non-UEA
67	X-744Q	Warehouse Q Non-UEA
68	X-744S	Warehouse S Non-UEA
69	X-744W	Surplus & Salvage Warehouse
70	X-744Y	Waste Storage Area
71	X-747	Clean Scrap Yard
72	X-750A	Garage Storage Building
73	X-751	GCEP Mobile Equipment Garage
74	X-752	Warehouse
75	X-752AT 1-5	Trailer Complex
76	X-1000	Administration Building

Note: The list of facilities above excludes environmental media (soil, sediment, pond, and groundwater) other than residual soil as discussed in Section III. Definitions, Paragraph 5.e. Decontamination and Decommissioning.

Group 2
Industrial/Medium Complexity

No.	Facility No.	Facility Name
1	X-100	Administration Building
2	X-101	Dispensary
3	X-102	Cafeteria
4	X-104	Guard Headquarters
5	X-104A	Indoor Firing Range Building
6	X-300	Plant Control Facility
7	X-345	SNM Storage Building
8	X-530B	Switch House
9	X-530C	Test And Repair Building
10	X-530D	Oil House
11	X-530E	Valve House
12	X-530F	Valve House
13	X-530G	GCEP Oil Pumping Station
14	X-540	Telephone Building
15	X-608	Raw Water Pump House

Note: The list of facilities above excludes environmental media (soil, sediment, pond, and groundwater) other than residual soil as discussed in Section III. Definitions, Paragraph 5.e. Decontamination and Decommissioning.

No.	Facility No.	Facility Name
16	X-611	Water Treatment Plant
17	X-622	South Groundwater Treatment Facility
18	X-623	North Groundwater Treatment Building
19	X-624 & 624-1	Little Beaver Groundwater Treatment Facility & Decontamination Pad
20	X-625	Groundwater Passive Treatment Facility
21	X-626-1	Recirculating Water Pump House
22	X-626-2	Cooling Tower
23	X-627	Groundwater Pump & Treatment Facility
24	X-630-1	Recirculating Water Pump House
25	X-630-2A	Cooling Tower
26	X-630-2B	Cooling Tower
27	X-633 Cooling Tower Complex	Cooling Tower Basins, Vaults & Wet Well Only
28	X-721	Radiation Instrument Calibration

Note: The list of facilities above excludes environmental media (soil, sediment, pond, and groundwater) other than residual soil as discussed in Section III. Definitions, Paragraph 5.e. Decontamination and Decommissioning.

No.	Facility No.	Facility Name
29	X-744G	Bulk Storage Building
30	X-750	Mobile Equipment Maintenance Shop
31	X-751	GCEP Mobile Equipment Garage
32	X-1007	Fire Station
33	X-6619	Sewage Treatment Plant
34	X-100B	Air Conditioner Equipment Building

Group 3
Chemical/Medium Complexity

No.	Facility No.	Facility Name
1	X-600	Steam Plant
2	X-600B	Steam Plant Shop Building
3	X-600C	Ash Wash Treatment Building
4	X-334	Transformer Cleaning & Storage
5	X-621	Coal Pile Treatment Facility

Note: The list of facilities above excludes environmental media (soil, sediment, pond, and groundwater) other than residual soil as discussed in Section III. Definitions, Paragraph 5.e. Decontamination and Decommissioning.

Group 4
Radiological/High Complexity

No.	Facility No.	Facility Name
1	X-342A	Feed Vaporization Building
2	X-342B	Fluorine Storage Building
3	X-343	Feed Vaporization & Sampling Building
4	X-344A	UF6 Sampling Facility
5	X-760	Chemical Engineering Building Concrete Slab & Neutralization Pit Only

Note: The list of facilities above excludes environmental media (soil, sediment, pond, and groundwater) other than residual soil as discussed in Section III. Definitions, Paragraph 5.e. Decontamination and Decommissioning.

ATTACHMENT H

List of Remedial Action (RI/FS) Process Buildings and Complex Facilities

No.	Facility No.	Facility Type
1	X-326	Process Building & Instrumentation Tunnel
2	X-330	Process Building & Instrumentation Tunnel
3	X-333	Process Building & Instrumentation Tunnel
4	X-700 & 700A	Converter Shop & Cleaning Building
5	X-705, 705E&705D	Decontamination Building
6	X-710	Technical Service Building
7	X-720	Maintenance & Stores Building

Note: The list of facilities above excludes environmental media (soil, sediment, pond, and groundwater) other than residual soil as discussed in Section III. Definitions, Paragraph 5.e. Decontamination and Decommissioning.

ATTACHMENT I

List of USEC Leased/ACP Buildings

1	Data Processing Building
2	Emergency Operation Center
3	Administrative Pedestrian Portal
4	Northeast Pedestrian Portal
5	Northeast Vehicle Portal
6	Northwest Pedestrian Portal
7	Northwest Vehicle Portal
8	South Pedestrian Portal
9	South Vehicle Portal
10	Environmental Compliance Building
11	GCEP Process Building # 1
12	GCEP Process Building #2
13	GCEP Process Support Building
14	GCEP Feed and Withdrawal Facility
15	Feed and Product Shipping & Receiving Building Area
16	Product & Tails Withdrawal Building Area
17	Switch House
18	Substation
19	Valve house
20	Oil Pump Station
21	Cooling Tower Pump House
22	Cooling Tower

***List Provided for Information Only**

23	Valve House
24	Boiler System
25	Oil Storage Facility
26	Maintenance, Stores, and Training Building
27	GCEP Recycle and Assembly Building
28	Waste Accountable Facility
29	Chemical storage Building Area
30	Centrifuge Training and Test Facility

***List Provided for Information Only**

ATTACHMENT J

List of DUF6 Conversion Facilities

1	X-745C	West DUF6 Storage Yard
2	X-745E	Northwest DUF6 Storage Yard
3	X-745G-1	Cylinder Yard
4	X-100L	Environmental Control Trailer
5	X-1200	Parking Area
6	X-1215	Vehicle Access House "A"
7	X-1220	Vehicle Access House "B"
8	X-1300	Conversion Building
9	X-1305	HF Storage Tank Area
10	X-1305A	HF Tanker Car Containment Pit
11	X-1310	Nitrogen Supply System Area
12	X-1315	HF Neutralization Building
13	X-1320	Potassium Hydroxide Regeneration Building
14	X-1330	Hydrogen Supply System Area
15	X-1330A	Anhydrous Ammonia Storage Tank Area
16	X-1605	Service Water Pump House
17	X-1605A	Service Water Storage Tank
18	X-1700	Warehouse/Maintenance

***List Provided for Information Only**

19	X-1745A	Full Cylinder Staging Area
20	X-1745B	Heel Cylinder Staging Area
21	X-1100	Administration Building

***List Provided for Information Only**

Exhibit 1