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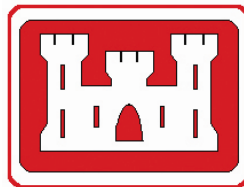
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14. ABSTRACT The Project Management Plan (PMP) describes ECC's activities to be performed for this task order and meeting the requirements of the Performance Work Statement dated May 3, 2011. This PMP presents the project team roles and responsibilities, an organizational chart, required deliverables, and addresses coordination with RVAAP stakeholders, as well as other facility environmental and operational activities.					
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Draft
Project Management Plan

**2011 PBA Environmental Investigation and Remediation
at 14 Compliance Restoration Sites**
Revision 0
Ravenna Army Ammunition Plant
Ravenna, Ohio

Contract No.: W912QR-04-D-0039
Delivery Order: 0004

Prepared for:



U.S. Army Corps of Engineers, Louisville District
600 Dr. Martin Luther King Jr. Place
Louisville, Kentucky 40202-2267

Prepared by:



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November 17, 2011

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for the
Draft Project Management Plan
2011 PBA Environmental Investigation and Remediation
at 14 Compliance Restoration Sites
Revision 0
Ravenna Army Ammunition Plant
Ravenna, Ohio

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Ohio EPA – NEDO = Ohio Environmental Protection Agency Northeast District Office

NGB = National Guard Bureau

OHARNG = Ohio Army National Guard

RVAAP = Ravenna Army Ammunition Plant

USACE = United States Army Corps of Engineers

REIMS = Ravenna Environmental Information Management System

ECC = Environmental Chemical Corporation

71 **CONTRACTOR'S STATEMENT OF INDEPENDENT TECHNICAL REVIEW**
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75 ECC has completed the *Draft Project Management Plan for the Environmental Investigation and*
76 *Remediation at 14 Compliance Restoration Sites at Ravenna Army Ammunitions Plant, Ravenna,*
77 *Ohio.* Notice is hereby given that an independent technical review has been conducted that is
78 appropriate to the level of risk and complexity inherent in this project. During the independent
79 technical review, compliance with established policy principals and procedures, utilizing
80 justified and valid assumptions was verified. This included review of data quality objectives;
81 technical assumptions, methods, procedures, and materials used; the appropriateness of data used
82 and level of data obtained; and reasonableness of the results, including whether the product
83 meets the customer's needs consistent with the law and existing United States Corps of
84 Engineers policy.
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November 17, 2011

Date

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November 17, 2011

Date

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ACRONYMS AND ABBREVIATIONS

ACM	Asbesto Containing Material
AEDB-R	Army Environmental Database-Restoration Module
AOC	Area of Concern
ASSHP	Abbreviated Site Safety and Health Plan
AST	Aboveground Storage Tank
ASTM	American Society for Testing and Materials
bgs	below ground surface
BRACD	Base Realignment and Closure Division
C	Central
CAS	Chemical Abstracts Services
CERCLA	Comprehensive Environmental, Response, Compensation, and Liability Act
CIH	Certified Industrial Hygienist
CLIN	Contract Line Item Number
CR	Compliance Restoration
COR	Contracting Officer Representative
CRF	Central Records Facility
CSDGM	Content Standard for Digital Geospatial Metadata
CSP	Certified Safety Professional
CWM	Chemical Warfare Material
DDESB	Department of Defense Explosives Safety Board
DERP	Defense Environmental Restoration Program
DERR	Division of Emergency and Remedial Response
DDFO	Director's Final Findings and Orders
DLA	Defense Logistics Agency
DQO	Data Quality Objective
EC	Electronic copy
EM	Engineering Manual
EPA	Environmental Protection Agency
ERIS	Environmental Restoration Information System
FAR	Federal Acquisition Regulations
FGDC	Federal Geographic Data Committee
FWSHP	Facility-Wide Safety and Health Plan
GIS	Geographic Information System
HC	Hard copy
HRR	Historical Records Review
HTRW	Hazardous, Toxic, and Radioactive Waste
IAP	Installation Action Plan
IRP	Installation Restoration Program
IMCOM	Installation Management Command
km	Kilometer
LL #2	Load Line 2
LL #6	Load Line 6

ACRONYMS AND ABBREVIATIONS (CONTINUED)

LL #12	Load Line 12
LCG	Louisville Chemistry Guideline
MC	Munitions Constituent
MD	Munitions Debris
MEC	Munitions and Explosives of Concern
MR	Munitions Response
MRS	Munitions Response Site
N	North
NCP	National Contingency Plan
NE	Northeast
NEDO	Northeast District Office
NELAC	National Environmental Laboratory Accreditation Conference
NELAP	National Environmental Laboratory Accreditation Program
NGB	National Guard Bureau
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
NSSDA	National Standard for Spatial Data Accuracy
OFFO	Office of Federal Facilities Oversight
OHARNG	Ohio Army National Guard
Ohio EPA	Ohio Environmental Protection Agency
PBA	Performance-Based Acquisition
PE	Professional Engineer
PG	Professional Geologist
PH	Powerhouse
PM	Project Manager
PMP	Project Management Plan
POC	Point of Contract
PPE	Personal Protective Equipment
PWS	Performance Work Statement
QA/QC	Quality Assurance/Quality Control
QAPP	Quality Assurance Project Plan
QSM	Quality Systems Manual
RAB	Restoration Advisory Board
REIMS	RVAAP Environmental Information Management System
RI	Remedial Investigation
RIP	Remedy In Place
ROE	Right of Entry
RR	Railroad
RRD	Range-Related Debris
RVAAP	Ravenna Army Ammunition Plant
S	South
SARA	Superfund Amendments and Reauthorization Act
SDSFIE	Spatial Data Standards for Facilities, Infrastructure, and Environment

ACRONYMS AND ABBREVIATIONS (CONTINUED)

SI	Site Inspection
SOW	Scope of Work
SS	South Service
SSHP	Site Safety and Health Plan
TM	Task Manager
USACE	United States Army Corps of Engineers
USACHPPM	United States Army Center for Health Promotion and Preventive Medicine
USAEC	United States Army Environmental Command
USATCES	United States Army Technical Center for Explosive Safety
UST	Underground Storage Tank
UTM	Universal Transverse Mercator
UXO	Unexploded Ordnance
WW	Waterworks

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EXECUTIVE SUMMARY

The Project Management Plan (PMP) presents the management plan for ECC's task order under Contract Number W912QR-04-D-0039, Delivery Order Number 0004 for the U.S Army Corps of Engineers (USACE), Louisville District. In accordance with the Performance Work Statement (PWS) dated May 3, 2011 for this Performance-Based Acquisition (PBA), firm fixed price task order, ECC is tasked with executing environmental investigations and remediation activities at 14 Compliance Restoration (CR) sites at the Ravenna Army Ammunition Plant (RVAAP) in Ravenna, Ohio. This Project Management Plan presents the team organization, statement of work, coordination details, deliverables, quality, schedule, site logistics and record management for this task order for the following CR sites at RVAAP:

- CC-RVAAP-68 Electric Substations (East, West, No. 3);
- CC-RVAAP-69 Building 1048 Fire Station;
- CC-RVAAP-70 East Classification Yard;
- CC-RVAAP-71 Barn No. 5 Petroleum Release;
- CC-RVAAP-72 Facility-Wide Underground Storage Tanks;
- CC-RVAAP-73 Facility-Wide Coal Storage;
- CC-RVAAP-74 Building 1034 - Motor Pool Hydraulic Lift;
- CC-RVAAP-75 George Road Sewage Treatment Plant;
- CC-RVAAP-76 Depot Area;
- CC-RVAAP-77 Building 1037 - Laundry Waste Water Sump;
- CC-RVAAP-78 Quarry Pond Surface Dump;
- CC-RVAAP-79 DLA Ore Storage Sites – Remaining Ore Sites;
- CC-RVAAP-80 Group 2 Propellant Can Tops; and
- CC-RVAAP-83 Former Buildings 1031 and 1039.

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1.0 INTRODUCTION

ECC is submitting this Draft Project Management Plan (PMP) to the U.S. Army in accordance with the Performance Work Statement (PWS), Contract No. W912QR-04-D-0039, Task Order 0004 for performance-based, firm fixed-price environmental services at 14 Compliance Restoration (CR) Sites at the Ravenna Army Ammunition Plant (RVAAP), Ravenna, Ohio. The Delivery Order was issued by the United States Army Corps of Engineers, Louisville District on August 15, 2011.

1.1 Installation Setting and Status

The RVAAP (Federal Facility Identification number: OH213820736) is located in northeastern Ohio within Portage and Trumbull Counties, approximately 3 miles east-northeast of the city of Ravenna (Figure 1-1). The installation is approximately 11 miles long and 3.5 miles wide bounded by State Route 5, the Michael J. Kirwan Reservoir, and the CSX System Railroad on the south; Garret, McCormick, and Berry roads on the west; the Norfolk Southern Railroad on the north; and State Route 534 on the east. The Installation is surrounded by several communities: Windham on the north, Garrettsville 6 miles to the northwest, Newton Falls 1 mile to the southeast, Charlestown to the southwest, and Wayland 3 miles to the south.

As of February 2006, administrative control of 20,403 acres of the former 21,683 acre RVAAP have been transferred to the National Guard Bureau (NGB) and subsequently licensed to the Ohio Army National Guard (OHARNG) for use as a military training site. Currently, RVAAP consists of 1,280 acres in several distinct parcels scattered throughout the confines of the Camp Ravenna Joint Military Training Center (Camp Ravenna). These 1,280 acres consist of former industrial facilities that are being remediated and managed by the Base Realignment and Closure Division (BRACD) that has, among other responsibilities, the task of overseeing inactive status installations.

During the operational years, prior to Camp Ravenna, the entire 21,683- acre property was a government-owned, contractor-operated industrial facility. The RVAAP CR Sites encompass investigation and remediation of past activities over the entire 21,683 acres of the former RVAAP; therefore, references to the RVAAP in this PMP are considered to be inclusive of the historical extent of the RVAAP, which is inclusive of the combined acreages of the current Camp Ravenna and RVAAP, unless otherwise specifically stated.

RVAAP is bound to the Director's Final Findings and Orders (DFFOs) issued June 10, 2004 by the Ohio Environmental Protection Agency (Ohio EPA) pursuant to the authority vested under Chapters 3734, 3745, and 6111 of the Ohio Revised Code (ORC). The objective of the Orders is to ensure that the public health, safety, and welfare, as well as the environment, is protected from the disposal, discharge, or release of contaminants. RVAAP is not on the USEPA National Priorities List (NPL), although it is in the USEPA Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) database. The Ohio EPA is the lead environmental regulator at the RVAAP. The installation is bound to the DFFOs, issued on

June 10, 2004 by the Ohio EPA. The DFFOs form the basis for the implementation of a CERCLA based environmental remediation program at the installation.

1.2 Scope of Work

Under this Delivery Order, ECC will perform environmental investigation and remediation activities at the 14 CR Sites listed in the PWS dated May 3, 2011. This PMP describes ECC's approach to executing this project and meeting the requirements of the PWS. This PMP includes a discussion of project team roles and responsibilities, an organizational chart, deliverable matrix, and addresses coordination with RVAAP stakeholders, as well as other facility environmental and operational activities. This PMP will be updated as necessary throughout the remainder of the contract. Updates to the PMP shall be noted as Revisions and numbered sequentially. The approved PMP will initially be designated as Revision 0.

This PMP is applicable to all environmental investigation and remedial activities to be conducted by ECC and ECC subcontractors for the 14 CR sites identified in the PWS. All references to managers, organizations, and processes in this document are intended to refer to ECC's management team, organization, and processes, unless otherwise specified. The locations of the 14 CR sites are provided on Figure 1-2, and are listed as follows:

- CC-RVAAP-68 Electric Substations (East, West, No. 3);
- CC-RVAAP-69 Building 1048 Fire Station;
- CC-RVAAP-70 East Classification Yard;
- CC-RVAAP-71 Barn No. 5 Petroleum Release;
- CC-RVAAP-72 Facility-Wide Underground Storage Tanks;
- CC-RVAAP-73 Facility-Wide Coal Storage;
- CC-RVAAP-74 Building 1034 - Motor Pool Hydraulic Lift;
- CC-RVAAP-75 George Road Sewage Treatment Plant;
- CC-RVAAP-76 Depot Area;
- CC-RVAAP-77 Building 1037 - Laundry Waste Water Sump;
- CC-RVAAP-78 Quarry Pond Surface Dump;
- CC-RVAAP-79 DLA Ore Storage Sites – Remaining Ore Sites;
- CC-RVAAP-80 Group 2 Propellant Can Tops; and
- CC-RVAAP-83 Former Buildings 1031 and 1039.

The work to be completed under the PWS shall comply with all applicable Federal, State, and local rules, laws, and regulations in order to successfully complete all performance objectives in a manner that is consistent with any applicable orders and permits, all previously agreed-upon and future cleanup agreements, guidance for the RVAAP BRAC program, and relevant Department of Defense (DOD) and Army policies, for the duration of this Delivery Order. All environmental services will comply with CERCLA, the Superfund Amendments and Reauthorization Act (SARA), and the National Oil and Hazardous Substances Contingency Plan (NCP) in coordination with the Ohio EPA and the United States Environmental Protection Agency (USEPA), Region 5, requirements as applicable.

1.3 Performance Objectives

ECC will furnish all labor, materials, and equipment necessary to meet the performance objectives and standards identified in Table 1-1.

Table 1-1: Performance Objectives and Standards

Performance Objectives	Performance Standards
<p>Achieve Approved Project Management Plan (PMP) and Quality Assurance Surveillance Plan (QASP) within 6 months of Notice to Proceed:</p> <ul style="list-style-type: none"> • Draft PMP submittal within 30 calendar days of contract award • Final PMP submittal within 30 calendar days of receipt of COR/Ohio EPA comments on the draft • Draft QASP submittal within 30 calendar days of contract award 	<p>Army approval through the Contracting Officer's Representative (COR), and Ohio EPA concurrence (i.e., receipt of Ohio EPA documentation confirming Final PMP approval).</p> <p>Army approval through the Contracting Officer's Representative (COR).</p>
<p>Achieve an approved Historical Records Review for the following sites by 30 July 2012:</p> <p>CC-RVAAP-71 Barn No. 5 Petroleum Release CC-RVAAP-83 Former Buildings 1031 and 1039</p>	<p>Army approval through the Contracting Officer's Representative (COR), and Ohio EPA concurrence (i.e., receipt of Ohio EPA documentation confirming Final Historical Records Review Report approval).</p>
<p>Option: Achieve an approved Site Inspection (SI) at the following site by 30 July 2013:</p> <p>CC-RVAAP-71 Barn No. 5 Petroleum Release</p>	<p>Army approval through the Contracting Officer's Representative (COR), and Ohio EPA concurrence (i.e., receipt of Ohio EPA documentation confirming Final SI Report approval).</p>
<p>Option: Achieve an approved Site Inspection (SI) at the following site by 30 July 2013:</p> <p>CC-RVAAP-83 Former Buildings 1031 and 1039</p>	<p>Army approval through the Contracting Officer's Representative (COR), and Ohio EPA concurrence (i.e., receipt of Ohio EPA documentation confirming Final SI Report approval).</p>
<p>Achieve an approved Site Inspection (SI) at the following sites by 30 July 2013:</p> <p>CC-RVAAP-70 East Classification Yard CC-RVAAP-72 Facility-Wide Underground Storage Tanks CC-RVAAP-75 George Road Sewage Treatment Plant CC-RVAAP-77 Building 1037-Laundry Waste Water Sump</p>	<p>Army approval through the Contracting Officer's Representative (COR), and Ohio EPA concurrence (i.e., receipt of Ohio EPA documentation confirming SI approvals).</p>

Performance Objectives	Performance Standards
<p>Achieve an approved Remedial Investigation (RI) for all media, except groundwater, at the following site by 30 May 2014:</p> <p>CC-RVAAP-79 DLA Ore Storage Site – Main Ore Storage Yard</p>	<p>Army approval through the Contracting Officer's Representative (COR), and Ohio EPA concurrence (i.e., receipt of Ohio EPA documentation confirming RI approval).</p>
<p>Achieve an approved Feasibility Study (FS) for all media, except groundwater, at the following site by 30 June 2014:</p> <p>CC-RVAAP-76 Depot Area</p>	<p>Army approval through the Contracting Officer's Representative (COR), and Ohio EPA concurrence (i.e., receipt of Ohio EPA documentation confirming FS approval).</p>
<p>Achieve an approved Remedial Investigation (RI) for all media, except groundwater, at the following sites by 30 July 2015:</p> <p>CC-RVAAP-68 Electric Substations (East, West, No.3) CC-RVAAP-69 Building 1048-Fire Station CC-RVAAP-73 Facility-Wide Coal Storage CC-RVAAP-74 Building 1034-Motor Pool Hydraulic Lift CC-RVAAP-78 Quarry Pond Surface Dump CC-RVAAP-79 DLA Ore Storage Sites-Remaining Ore Sites</p>	<p>Army approval through the Contracting Officer's Representative (COR), and Ohio EPA concurrence (i.e., receipt of Ohio EPA documentation confirming RI approvals).</p>
<p><u>Option:</u></p> <p>Achieve an approved Remedial Investigation (RI) for all media, except groundwater, at CC-RVAAP-70 East Classification Yard by 1 August 2015.</p>	<p>Army approval through the Contracting Officer's Representative (COR), and Ohio EPA concurrence (i.e., receipt of Ohio EPA documentation confirming RI approval).</p>
<p><u>Option:</u></p> <p>Achieve an approved RI for all media, except groundwater, at CC-RVAAP-71 Barn No. 5 Petroleum Release by 1 August 2015.</p>	<p>Army approval through the Contracting Officer's Representative (COR), and Ohio EPA concurrence (i.e., receipt of Ohio EPA documentation confirming RI approval).</p>
<p><u>Option:</u></p> <p>Achieve an approved RI for all media, except groundwater, at CC-RVAAP-72 Facility-Wide Underground Storage Tanks by 1 August 2015.</p>	<p>Army approval through the Contracting Officer's Representative (COR), and Ohio EPA concurrence (i.e., receipt of Ohio EPA documentation confirming RI approval).</p>
<p><u>Option:</u></p> <p>Achieve an approved RI for all media, except groundwater, at CC-RVAAP-75 (George Road Sewage Treatment Plant) by 1 August 2015.</p>	<p>Army approval through the Contracting Officer's Representative (COR), and Ohio EPA concurrence (i.e., receipt of Ohio EPA documentation confirming RI approval).</p>

Performance Objectives	Performance Standards
<p><u>Option:</u> Achieve an approved RI for all media, except groundwater, at CC-RVAAP-77 Building 1037- Laundry Waste Water Sump by 1 August 2015.</p>	<p>Army approval through the Contracting Officer's Representative (COR), and Ohio EPA concurrence (i.e., receipt of Ohio EPA documentation confirming RI approval).</p>
<p><u>Option:</u> Achieve an approved RI for all media, except groundwater, at CC-RVAAP-80 Group 2 Propellant Can Tops by 1 August 2015.</p>	<p>Army approval through the Contracting Officer's Representative (COR), and Ohio EPA concurrence (i.e., receipt of Ohio EPA documentation confirming RI approval).</p>
<p><u>Option:</u> Achieve an approved RI for all media, except groundwater, at CC-RVAAP-83 Former buildings 1031 and 1039 by 1 August 2015.</p>	<p>Army approval through the Contracting Officer's Representative (COR), and Ohio EPA concurrence (i.e., receipt of Ohio EPA documentation confirming RI approval).</p>
<p>Achieve Non-Time-Critical Removal Action Appropriate for Future Land Use at the following sites located within Load Lines 1, 2, 3, 4, and 12 by 30 August 2013:</p> <p>CC-RVAAP-73 Facility-Wide Coal Storage CC-RVAAP-79 DLA Ore Storage Sites</p>	<p>Army approval through the Contracting Officer's Representative (COR), and Ohio EPA concurrence (i.e., receipt of Ohio EPA documentation confirming RI approvals).</p>
<p>Achieve Non-Time-Critical Removal Action Appropriate for Future Land Use at the following site by 30 May 2014:</p> <p>CC-RVAAP-79 DLA Ore Storage Site – Main Ore Storage Yard</p>	<p>Army approval through the Contracting Officer's Representative (COR), and Ohio EPA concurrence (i.e., receipt of Ohio EPA documentation confirming RI approvals).</p>
<p>Achieve Non-Time-Critical Removal Action Appropriate for Future Land Use at the following sites by 30 July 2015:</p> <p>CC-RVAAP-73 Facility-Wide Coal Storage – Remaining Sites CC-RVAAP-74 Building 1034-Motor Pool Hydraulic Lift CC-RVAAP-78 Quarry Pond Surface Dump CC-RVAAP-79 DLA Ore Storage Sites - Remaining Sites</p>	<p>Army approval through the Contracting Officer's Representative (COR), and Ohio EPA concurrence (i.e., receipt of Ohio EPA documentation confirming RI approvals).</p>
<p><u>Option:</u> Achieve Non-Time-Critical Removal Action Appropriate for Future Land Use at the following site by 30 July 2015:</p> <p>CC-RVAAP-72 Facility-Wide Underground Storage Tanks</p>	<p>Army approval through the Contracting Officer's Representative (COR), and Ohio EPA concurrence (i.e., receipt of Ohio EPA documentation confirming RI approval).</p>

Performance Objectives	Performance Standards
<p>Option: Achieve Non-Time-Critical Removal Action Appropriate for Future Land Use at the following site by 1 August 2015:</p> <p>CC-RVAAP-75 George Road Sewage Treatment Plant</p>	<p>Army approval through the Contracting Officer's Representative (COR), and Ohio EPA concurrence (i.e., receipt of Ohio EPA documentation confirming RI approval).</p>
<p>For all Remedies, optimize capital and long-term costs.</p>	<p>Acceptance by the COR that the Contractor has demonstrated that the proposed remedy represents the lowest 30-year present worth cost to the Army, and is acceptable to the Ohio EPA.</p>

1.4 Project Management Plan Organization

This PMP is organized following the requirements as stated in the PWS and includes the following sections:

- Section 1.0 – Introduction
- Section 2.0 – Project Management Team
- Section 3.0 – Project Coordination
- Section 4.0 – Deliverables
- Section 5.0 – Quality Management
- Section 6.0 – Site Logistics
- Section 7.0 – Records Management
- Section 8.0 – Government Resources
- Section 9.0 – References

1.5 Compliance Restoration Sites Operational History/Description

CC-RVAAP-68 Electric Substations (East, West, and No. 3)

Three electrical substations are included in this site. The east electrical substation comprises an area of approximately 12,300 square feet, which includes the land surrounding Building 25-27. There are no documented releases; however, aerial photographs and visual observations demonstrate stressed vegetation and staining outside the building, and around the former transformers. Volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), and polychlorinated biphenyl's (PCBs) are possible contaminants of concern (COCs) for soil. The west electrical substation comprises an area of approximately 3,000 square ft., which includes the land around Building 28 and the surrounding land formerly used as the transformer station. This Area of Concern (AOC) excludes Building 28-28. One spill of approximately 500 gallons of transformer fluid occurred on the north side of the building. The impacted area was cleaned up by Emerald Environmental in 1997. Possible impacted soils may exist outside the

building around the former transformers. VOCs, SVOCs, and PCBs are possible COCs for soil. Substation No. 3 comprises an area of approximately 10,000 square feet. The substation and all transformer equipment have been removed from the site. There are no documented releases; however, aerial photographs and visual observations demonstrate stressed vegetation and staining outside the building, and around the former transformers. VOCs, SVOCs, and PCBs are possible COCs for soil.

CC-RVAAP-69 Building 1048 Fire Station

The fire station was located in the Plant Administration Area in the northwest quadrant of the intersection of George Road and South Service Road. In 1968, the fire station was referred to as the Fire and Guard Building, and consisted of 12,130 square feet. The fire station building was demolished in late 2008, and the site currently remains undeveloped. Reportedly, it was common practice for the fire department to clean out fire extinguishers behind the west side of the fire building, and to allow the contents of the fire extinguishers (carbon tetrachloride) to spill onto the ground surface. The area of potential impact includes the ground surface behind the former building location.

CC-RVAAP-70 East Classification Yard

The Ravenna facility was originally equipped with east and west classification yards during the facility's early operational years. The classification yards were used for the switching and maintenance of railroad cars. The east classification yard is located east of Load Line 1 and the Main Defense Logistics Agency (DLA) Ore Storage Area in close proximity to the intersection of Ramsdell Road and Irons Road. The rail yard reportedly consisted of 18 tracks with a 750 car capacity, and 3 Hi-X tracks with a 120 car capacity, which also included the wash rack south of the main track area. This yard was equipped with a locomotive repair building (Round House) and a herbicide storage shed along Tracks # 47 and 48.

CC-RVAAP-71 Barn No. 5 Petroleum Release

The site location is a vacant property along the southern property fence line in close proximity to former Post No. 6. There is a documented release on 13 May 1964 of approximately 20 barrels of gasoline to the ground surface inside of the south fence near Barn No. 5. The release occurred from a buried Standard Oil of Ohio (Sohio) pipeline. The OHARNG future land use designation is Training Area D.

CC-RVAAP-72 Facility-Wide Underground Storage Tanks

Facility records document the former presence and use of 50 underground storage tanks (USTs) at the Ravenna facility. Approximately 34 of the USTs were installed in 1941, with the remaining USTs installed between 1941 and 1981. The USTs were used for the storage of gasoline, diesel fuel, No. 5 heating oil, and No. 6 fuel oil. The USTs located in the Depot Area were reportedly filled with potassium dichromate to prevent corrosion when not in use. Readily available records suggest that nearly all of the USTs have been closed by removal, and the tanks

have been scrapped. Table 1-2 presents a list of the former USTs at RVAAP. Closure documents and official tank status records have not been obtained for most of the USTs. As such, additional records searches are required to further characterize the USTs. Petroleum and/or potassium dichromate impacted soils and/or groundwater may exist at several of the former UST sites. Possible USTs that were located within the Atlas Scrap Yard (Service Stations #1 and #2) are located within a Munitions Response Site (MRS), and Munitions and Explosives of Concern (MEC) avoidance procedures will be required for property visits and perimeter surveys in this area.

CC-RVAAP-73 Facility-Wide Coal Storage

Facility records document the former presence of approximately 17 coal storage locations at the Ravenna facility. Coal was historically used to fuel powerhouses and various other buildings at the site. Typically, coal storage consisted of placing the coal on the ground surface as coal piles or placing the coal in railcars adjacent to the subject buildings. The total area of potentially impacted media associated with the coal consists of approximately 222,500 square feet (about 5 acres). Coal storage occurred at the following locations on the Ravenna property:

- Load Line 1 Powerhouse;
- Load Line 2 Powerhouse;
- Building F-15;
- Building F-16;
- Atlas Scrap Yard (MRS);
- North Line Road Coal Tipple;
- Sand Creek Coal Tipple;
- East Classification Yard Round House;
- Administration Area;
- Depot Area Building U-5;
- Depot Area Building U-14;
- Fuze and Booster Road Powerhouse No. 5;
- Fuze and Booster Road Inert Storage No. 2F-N21;
- Fuze and Booster Service Road Powerhouse; and
- Area 6 Inert Storage.

Former coal storage sites located within Atlas Scrap Yard may also be within the Atlas Scrap Yard MRS; therefore, MEC avoidance procedures may be required for property visits and perimeter surveys in these areas.

Table 1-2: Former Underground Storage Tanks at RVAAP

Tank Number	Location	Tank Number	Location
RV-1	George Road Gas Station	RV-51	WW #4 – Gen
RV-2	George Road Gas Station	RV-52	Old ATLAS – Building T-18
RV-3	Post #1 Generator	RV-55	PH #1
RV-10	Post 24, Building F-4	RV-56	PH #1
RV-11	RR Yard	RV-57	PH #2
RV-12	PH #6	RV-58	PH #2
RV-13	Building U-6 (N) Depot	RV-59	PH #4
RV-14	Building U-6 (S) Depot	RV-60	PH #4
RV-15	Building U-3 (S) Depot	RV-61	PH #5
RV-16	Building U-3 (N) Depot	RV-62	PH #5
RV-17	Building A-6 (N) Depot	RV-63	PH #7
RV-18	Building A-6 (C) Depot	RV-64	PH #7
RV-19	Building A-6 (S) Depot	RV-66	PH #6
RV-20	Building DB-27 LL #2	RV-67	PH #6
RV-21	Building DB-27 LL #2	RV-73	Building T-2501
RV-22	RR Yard	RV-80	George Road Gas Station
RV-23	Building 1045	RV-81	Building 1047
RV-29	Building FE-22 LL #12	RV-82	Building 1047
RV-33	Deactivation Furnace	RV-83	Building 1047
RV-37	Building A-1 Depot	RV-86	Telephone Building (100' N)
RV-41	Building 2F-11 LL #6	RV-87	Telephone Building (NE)
RV-46	EE-102 (Bolton House)	RV-88	Fire Station #2
RV-47	Post 32 (Freedom)	RV-89	George Road Sewage
RV-50	WW #4 – Heat		

C = Central
LL #2 = Load Line 2
LL #12 = Load Line 12
LL #6 = Load Line 6
N = North
NE = Northeast
PH = Powerhouse
RR = Railroad
S = South
SS = South Service
WW = Waterworks

CC-RVAAP-74 Building 1034 - Motor Pool Hydraulic Lift

An in-ground hydraulic floor lift system has been identified inside the existing Motor Pool building. The hydraulic floor lift system is described in a 1969 drawing as a twin-post lift system constructed of metal. The below-grade system consists of a cast in concrete “L” shaped pit measuring approximately 12 feet (long portion of the “L” shape) and 4 feet (short portion of the “L” shape) in length, 3 feet in width, and 4 feet in depth. The pit is reportedly buried at depths ranging from 4 feet below ground surface (bgs) to approximately 8 feet bgs. The twin-post lift reportedly has a clearance of 6 feet between the floor surface and the bottom of the lift (height in the air). The floor lift system remains in place. It is also believed that an additional floor lift system was historically used at the Building 1034 Motor Pool facility.

CC-RVAAP-75 George Road Sewer Treatment Plant

The George Road Sewer Treatment Plant is an inactive domestic sewage treatment plant. The plant was gravity fed and consisted of two Imhoff tanks, two trickling filters, and a clarifier. Sludge was dried in a greenhouse structure and spread over the ground surface (location unknown). The design capacity was 350,000 gallons per day. Reportedly, approximately 1,200 cubic feet of sludge was spread every three years. Wastes handled at the site consisted of domestic sewage and discharge from RVAAP-15 (Load Line 6) and RVAAP-30 (Load Line 7) pink water treatment. This site also received sludge from the Depot Sewage Treatment Plant (RVAAP-15). The site maintained a current Ohio National Pollution Discharge Elimination System (NPDES) permit (#31000000BD), which allowed discharge to Outfall No. 002 (to the adjacent receiving stream). The NPDES permit was maintained until 1993 when the facility ceased operation.

Available information indicates approximately one quart of mercury was released to the floor drain at the plant (date unknown). It is anticipated the mercury may have remained in the receiving piping and/or traps located below the floor drain in the pipe galley. If the mercury escaped the pipe galley, then it may have impacted the receiving (down-gradient) trickling filters and/or the down-gradient drying beds.

CC-RVAAP-76 Depot Area

The Depot Area consisted of a waste oil storage tank located between Depot Buildings U-4 and U-5. The tank was an aboveground storage tank (AST) constructed of steel with a capacity of 400 gallons. The tank sat on crushed slag next to the motor oil storage shed. Waste oil from the motor pool area was stored in the AST until it was removed by an oil reclaimer. The AST was in operation from 1983 through 1993. In 1993, the contents of the AST were removed and the tank remained inactive until its removal (after 1996). The AST has since been removed and an earthen embankment remains at the location of the former tank. In addition, other areas within the Depot Area have been identified for inclusion under this CR site. Buildings 1W-2 and U-10 were reportedly used for the demilitarization and maintenance of various munitions. As such,

portions of this CR site may possibly contain MEC, Munitions Constituents (MC), and/or Munitions Debris (MD), although it is not currently recognized as an MRS.

CC-RVAAP-77 Building 1037 - Laundry Waste Water Sump

The Building 1037 Laundry Waste Water Sump consists of a former below ground concrete sump located on the north side of Building 1037. The sump had a capacity of approximately 5,765 gallons. The unit was previously used as a settling tank for the discharge of laundry rinse water. Wash water was emptied approximately 12 times during 8 hours of operation and rinsing 3 times each 8 hours. The wash water entered the tank prior to the rinse water discharge had sufficient settling time so that the increase in rate from the rinse water did not disturb the settled matter on the tank bottom. Rinse water was then sent to RVAAP-22 (George Road Sewage Treatment Plant). The concrete waste water sump was removed in 2009.

CC-RVAAP-78 Quarry Pond Surface Dump

This site consists of three debris piles (A, B, and C) that have a combined total of 23,450 (Pile A = 12,320 square feet, Pile B = 6,285 square feet, and Pile C = 4,845 square feet) square feet with an average thickness of 5 feet. In addition to the three debris piles, there is a former burn area and a rusted 55-gallon drum was located within Debris Pile B and a second rusted 55-gallon drum was located within Debris Pile C. The debris piles contain construction debris, scrap metal and unidentified materials. Debris Pile A is suspected to contain ACM. The area between Debris Piles A and B is suspected of containing construction debris and material excavated from the quarry. The April 2011 HRR Report recommended test pitting to determine if Debris Piles B and C contained ACM, and test pit the area between Debris Piles A and B to determine extent of construction debris and identify if ACM is present within this area.

CC-RVAAP-79 DLA Ore Storage Sites – Remaining Ore Sites

Various ores were stored at RVAAP. The ore was stored on the ground in piles and in above ground storage tanks that did not have floors. Therefore, the stored ore within these ASTs had direct contact with the ground surface. Other materials were also stockpiled directly on the ground surface, including brass ingots, chemical chrome ore, copper ingots, ferrochrome ore, ferrous manganese ore and metallurgical manganese ore. The 2010 IAP estimated that approximately 66,592 cubic yards of soil is impacted at these sites and will require delineation, excavation and off-site disposal.

CC-RVAAP-80 Group 2 Propellant Can Tops

CC-RVAAP-80 consists of the Group 2 Propellant Can Tops area. Propellant can lids or tops were identified on the ground surface/near-surface at the southern end of the former Group 2 Ammunition Storage Area. These materials are typically classified as range-related debris (RRD) (similar to munitions packaging materials); however, this site was never used or classified as an operational range. It is believed that the discarded propellant can tops might qualify as inert scrap metal. The propellant can tops located at the south end of Group 2 were initially

identified by OHARNG trainees in the winter of 2008. The propellant can tops were observed in the vegetative area located immediately south of the ammunition storage magazines in the vicinity of the southern railroad spur lines. This area consists of approximately 539,572 square ft (12.4 acres). The Louisville District USACE performed an emergency survey with a metal detector on a portion of the southern area ground surface. Results of the initial investigation revealed multiple magnetic anomalies in the surface and near-surface soils. On-site personnel visually identified the surface anomalies as propellants can lids or tops. During the emergency survey it was noted that the ground surface had been disturbed and contained hummocks (mounds) ranging in height from 1 ft to 2 ft throughout the survey area.

CC-RVAAP-83 Former Buildings 1031 and 1039

Former Buildings 1031 and 1039 was where the former Hospital and a former Laboratory was located, respectively. The OHARNG designated future land use for both building sites is Future OHARNG Cantonment Area.

Building 1031 - Former Hospital Building

The west end of the former Hospital Building included a gauge laboratory that was used for the development of large scale photos. Site-related constituents (SRCs) of concern are related to the former generation of x-ray acid/silver mix solutions, and common hospital wastes that may have been disposed of through the sanitary waste system, which were constructed of clay pipe. Potential SRCs for the sanitary system at the former Hospital Building are VOCs, SVOCs, and target analyte list (TAL) metals. Asbestos-Containing Material (ACM) was also mentioned as a potential SRC during the Site Visit.

Building 1039 - Former Laboratory Building

The former Laboratory Building measured approximately 16,500 square feet. The structure contained three powder test rooms for the routine analyses of lead azide, mercury fulminate, and percussion element mixes. The laboratory was used for the testing of Load Line materials. During operations, the building contained and operated a photography laboratory, a chemistry laboratory, and a medical x-ray facility. The laboratory building was demolished by Lakeshore Engineering Services, Inc. (LES) between May 2006 and July 2007. Following demolition, all unpainted and uncontaminated brick and concrete was crushed and recycled off-site. The basement of Building 1039 was filled with approved clean soil, and was then seeded with approved grass seed. Potential SRCs for the sanitary system at the former Laboratory Building are VOCs, SVOCs, TAL metals, explosives and propellants.

2.0 PROJECT TEAM ORGANIZATION

ECC is the prime contractor for this Task Order. ECC is supported by teaming partners AMEC, Inc. (AMEC), and Prudent Technologies, Inc. (Prudent). AMEC and Prudent personnel will assist the ECC project team in the preparation of Work Plans, Quality Assurance Project Plans, Remedial Investigation Reports, Feasibility Studies, Risk Assessments, and Remedial Designs at the RVAAP sites, and in the conduct of field work. Additionally, several subcontractors will provide other services to complete the project as necessary, including but not limited to drilling, analytical services, surveying, waste management/disposal, and equipment supply services.

Figure 2-1 outlines the project organization for the proposed work at the RVAAP. Table 2-1 provides the names, titles, addresses, and phone numbers of personnel responsible for ensuring the execution of the project as well as key project stakeholders.

ECC's organizational structure is embodied by established capabilities and resources focused on strong project management. ECC's management team is supported by Health and Safety, Quality Assurance/Quality Control (QA/QC), Risk Management, the Contract Administrator, and Project Controls to assist in project execution. The ECC Project Manager (PM) will be the single point of contact (POC) for the Army, USACE COR, and the Ohio EPA for all contractual, technical, and field activities. This organizational structure is designed to provide the following:

- Provide the manpower and resources to meet project schedules.
- Successfully perform the required services.
- Administer the contractual requirements effectively to minimize the Army's management time.

Project execution is directed by the ECC management team located in the Marlborough, Massachusetts office. ECC's management team will also have the ability to draw resources from ECC's offices nationwide. ECC's PM for the project will have the authority to procure any resources required to effectively complete the required work.

Figure 2-1: Project Organizational Chart

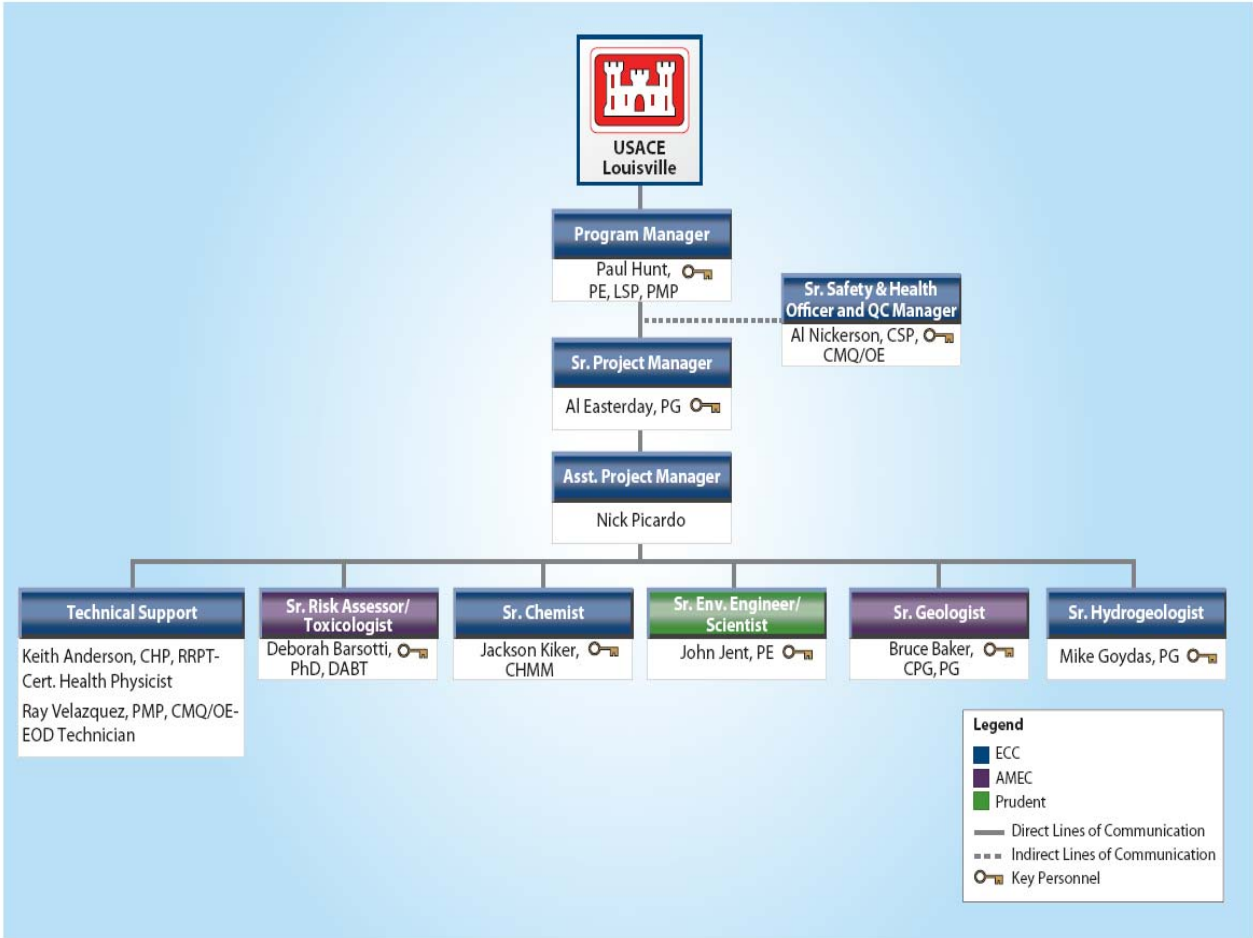


Table 2-1: Key Personnel for Ravenna Army Ammunition Plant

Name	Title	Address	Phone Number & Email
BRAC			
William O'Donnell	BRAC Office Program Manager	BRAC - Assistant Chief of Staff Installation Management 2530 Crystal Drive Arlington, Virginia 22202	T : (702) 601-1570 E : william.odonnell@us.army.mil
Ravenna Army Ammunition Plant			
Mark Patterson	Facility Manager	Ravenna Army Ammunition Plant Building 1037 8451 State Route 5 Ravenna, Ohio 44266	T : (330) 358-7312 F : (330) 358-7314 E : mark.c.patterson@us.army.mil
U.S. Army Environmental Command			
Mark Eldridge	Project Manager	USAEC 2450 Connell Road Fort Sam Houston, Texas 78234	T : (210) 424-8857 E : mark.h.eldridge@us.army.mil
U.S. Army Corps of Engineers			
Lisa Bisig	Contracting Officer	Louisville District Corps of Engineers Attn: CELRL-PM 600 Martin Luther King Jr. Place Louisville, KY 40202	T : (502) 315-6190 E : lisa.r.bisig@usace.army.mil
Chris Karem	Contracting Officer's Representative	Louisville District Corps of Engineers Attn: CELRL-PM 600 Martin Luther King Jr. Place Louisville, KY 40202	T : (502) 315-6285 E : christopher.r.karem@usace.army.mil
Shelton Poole	Contracting Officer's Representative	Louisville District Corps of Engineers Attn: CELRL-PM 600 Martin Luther King Jr. Place Louisville, KY 40202	T : (502) 315-6290 E : shelton.m.poole@usace.army.mil
Glen Beckham	Project Manager	Louisville District Corps of Engineers Attn: CELRL-PM 600 Martin Luther King Jr. Place Louisville, KY 40202	T : (502) 315-6799 F : (502) 315-6039 E : glen.backham@usace.army.mil
Stephanie Craig	Contract Specialist	Louisville District Corps of Engineers Attn: CELRL-PM 600 Martin Luther King Jr. Place Louisville, KY 40202	T : (502) 315-6204 F : (502) 315-6195 E : stephanie.m.craig@usace.army.mil
T. Scott Kelly	Technical Manager	Louisville District Corps of Engineers Attn: CELRL-PM 600 Martin Luther King Jr. Place Louisville, KY 40202	T : (502) 315-3815 F : (502) 315-6309 E : timothy.s.kelly@usace.army.mil

Name	Title	Address	Phone Number & Email
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Mark Nichter	Technical Manager	Louisville District Corps of Engineers Attn: CELRL-PM 600 Martin Luther King Jr. Place Louisville, KY 40202	T : (502) 315-6375 F : (502) 315-6309 E : mark.w.nichter@usace.army.mil
National Guard Bureau			
Kim Harriz	Cleanup Program Manager	National Guard Bureau NGB-AR-EI 111 S. George Mason Drive Arlington, VA 22206	T : (703) 607-7991 E : kim.harriz@us.army.mil
Ohio EPA			
Eileen Mohr	Facility Coordinator	Ohio EPA Northeast District Office 2110 E. Aurora Road Twinsburg, OH 44087	T : (330) 963-1221 F : (330) 487-0769 E : eileen.mohr@epa.ohio.gov
Kevin Palombo	Site Coordinator	Ohio EPA Northeast District Office 2110 E. Aurora Road Twinsburg, OH 44087	T : (330) 963-1292 F : (330) 487-0769 E : kevin.palombo@epa.ohio.gov
Ohio Army National Guard			
Katie Tait	Environmental Specialist	Ohio Army National Guard 1438 State Route 534 SW Newton Falls, OH 44444	T : (614) 336-6136 F : (614) 336-6135 E : kathryn.s.tait@us.army.mil
ECC			
Paul Hunt	Program Manager	ECC 33 Boston Post Road West Suite 340 Marlborough, MA 01752	T : (508) 229-2270 F : (508) 229-7737 E : phunt@ecc.net
Al Easterday	Project Manager	ECC 33 Boston Post Road West Suite 340 Marlborough, MA 01752	T : (508) 229-2270 F : (508) 229-7737 C : (508) 726-0284 E : aeasterday@ecc.net
Nick Picardo	Assistant Project Manager	ECC 33 Boston Post Road West Suite 340 Marlborough, MA 01752	T : (508) 229-2270 F : (508) 229-7737 E : npicardo@ecc.net
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Al Nickerson	Senior Health and Safety Officer and QC Manager	ECC 1600 Falmouth Road Suite 40 Centerville, MA 02632	T : (508) 771-1636 F : (508) 775-1864 C : (508) 836-6185 E : anickerson@ecc.net
Jackson Kiker	Senior Chemist	ECC 33 Boston Post Road West	T : (508) 229-2270 F : (508) 229-7737

Name	Title	Address	Phone Number & Email
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Mike Goydas	Senior Hydrogeologist	ECC 1600 Falmouth Road Suite 40 Centerville, MA 02632	T : (508) 771-1636 F : (508) 775-1864 E : mgoydas@ecc.net
Ray Velazquez	EOD Technician	ECC 318 East Inner Circle Buzzards Bay, MA 02542	T: (508) 563-1212 F: (508) 563-1217 C: (774)-836-6593 E : rvalazquez@ecc.net
Keith Andersen	Certified Health Physicist	ECC 5050 Section Avenue Cincinnati, OH 45212	T: (303) 298-7607 C: (303) 356-1267 E : kandersen@ecc.net
AMEC			
Bruce Baker	Senior Geologist/AMEC Resource Manager	AMEC 46850 Magellan Drive Novi, Michigan 48374	T : (248) 926-4008 F: (248) 926-4009 C: (248) 318-8261 E : BWBaker@AMEC.com
Anita Emery-DeVisser	Project Manager	AMEC 46850 Magellan Drive Novi, Michigan 48374	T : (248) 926-4008 F: (248) 926-4009 C: (810) 623-3398 E : anita.devisser@AMEC.com
Deborah A. Barsotti	Senior Risk Assessor/ Toxicology	AMEC 200 American Metro Blvd Suite 113 Hamilton, NJ 08619	T : (609) 689-2829 C : (609) 631-2902 E : dbarsotti@amec.com
Prudent Technologies, Inc.			
John Jent	Senior Environmental Engineer/Prudent Resource Manager	Prudent Technologies, Inc. 3303 Trinity Road Louisville, KY 40206	T: (502) 439-8005 C : (502) 439-8005 E : jjpent@PrudentWeb.com
Tomas Hernandez	Project Manager	Prudent Technologies, Inc. 4242 Medical Drive Suite 5250 San Antonio, TX 78229	T: (210) 822-9588 C: (210) 385-2011 E: @PrudentWeb.com

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3.0 PROJECT COORDINATION

This PMP is structured to ensure all stakeholders are kept informed of the project status, existing or potential problems, and any changes that may be required to prudently manage the project and satisfy the needs of the Installation stakeholders and decision-makers.

3.1 Project Stakeholders

The project stakeholders identified in the PWS consist of the following:

- U.S. Army
- Ohio Environmental Protection Agency
- U.S. Environmental Protection Agency Region V
- Ohio Army National Guard
- Headquarters National Guard Bureau
- Restoration Advisory Board (RAB)

Specific Army stakeholders include the RVAAP staffs, Installation Management Command (IMCOM) as the Installation's parent organization, Department of Defense Explosive Safety Board (DDESB), U.S. Army Technical Center for Explosives Safety (USATCES), U.S. Army Center for Health Promotion and Preventative Medicine (USCHPPM), U.S. Army Environmental Command (USAEC) and the U.S. Army Corps of Engineers (USACE).

As previously mentioned, the Ohio EPA is the lead regulator at the RVAAP. The USEPA Region V is listed as a stakeholder; however, the agency has not been actively involved at the RVAAP.

3.2 Coordination and Communication

The COR, or his designated representative, will be kept informed of the project status by the ECC PM through monthly status reports, milestone presentations, conference calls, and frequent communication with the COR or designated representatives, as necessary. The ECC PM will be accessible to the COR at all times.

3.2.1 Monthly Status Reports

ECC will provide input to the project team in the form of monthly status reports, weekly contractor conference calls (during field work activities), and/or scheduling meetings as follows:

- ECC will provide a monthly status report for inclusion in the overall monthly report provided to Ohio EPA for approval per the Director's Final Findings and Orders.
- These reports will succinctly describe project status and progress at each site and follow the outline provided in Figure 3-1. A meeting can be scheduled to review the monthly

status report if necessary. Monthly status reports will be submitted by the 6th of the following month.

- When field work is being conducted at the site, ECC will participate in weekly contractor meetings to discuss and rectify any issues.
- ECC will participate in bi-weekly schedule conference calls.

Figure 3-1: Monthly Progress Report

MONTHLY PROGRESS REPORT

Contract No. W912QR-04-D-0039/DO 0004

Report Number:

Project Number: Delivery Order 0004

Date:

Contractor: ECC

33 Boston Post Road West, Suite 340
Marlborough, MA 01752

Location: Ravenna Army Ammunition Plant, Ravenna, OH

Project Name: Investigation and Remediation at 14 Compliance Restoration Sites

SUMMARY OF ACTIVITIES:

HEALTH AND SAFETY PERFORMANCE:

PROBLEMS ENCOUNTERED/RESOLUTION:

PLANNED ACTIVITIES:

Target/Milestone Activity	Scheduled Completion Date	Actual Completion Date	Status

CHANGES IN KEY PERSONNEL:

DEVIATION FROM SCHEDULE (with explanation):

REMARKS:

ECC PROJECT MANAGER:

SIGNATURE:

3.2.2 Milestone Presentations

ECC will comply with Section 4.3 of the PWS. If requested, milestone presentations will be made to the COR at the completion of each milestone to provide in depth analysis, discuss lessons learned, and to present approaches for completion of future milestones. At the COR's request, ECC may also make milestone presentations to the other project stakeholders to show achievement of the performance objectives. The Contract Line Item Number (CLIN) structure, included in the Milestone Schedule in Appendix B, presents ECC's proposed execution strategy.

The Milestone Schedule is reflective of ECC's proposal, the requirements of the PWS, and any subsequent negotiations with the Army as to how the Army will structure funding for the project at the CLIN level. Payments will be tied to the successful completion of a milestone or an interim milestone plan approved by ECC and the Army, through the COR. All interim milestones should be associated with easily demonstrated metrics tied to performance measurements. Milestones must have a defined means for demonstrating completion in order to facilitate certification and approval. The milestone schedule presented in Appendix B has been approved by both the Army and ECC. ECC's Milestone Schedule may be subject to change over the course of the project depending on the progress of work and what is required to reach performance goals. In the event of milestone changes, replacement pages for this PMP may be issued to document changes following approval by the Army and ECC.

3.2.3 Phone Conferences/Informal Site Meetings

As necessary with all multi-site, multi-task projects, phone conferences and informal site meetings with the COR or his representative(s) will be documented appropriately through follow-up emails and summaries in the monthly status reports

3.3 Regulatory Coordination

All regulatory coordination will be approved by the Army through the COR. The ECC PM will provide the necessary support to initiate, schedule, and address all regulatory aspects of the project (e.g., organizing discussions with regulators concerning site recommendations, obtaining regulator comments on site documents and appropriately addressing them, and obtaining written documentation, as necessary, of regulator input for all sites in the PWS). All communication to stakeholders and regulators will be coordinated with the USACE and RVAAP. ECC will keep a record of phone conversations and written correspondence affecting decisions relating to the performance of site documents.

The COR, or other COR designee, will attend and represent the Army at all meetings with the regulators if they so chose. ECC will prepare and submit minutes of all significant meetings attended. With approval of the COR, ECC may also informally discuss issues with regulators and provide an after-action report back to the COR. ECC will not contact regulators without prior approval of the COR. The Army will be the signature authority for all agreements, remediation documentation and off-site characterization and disposal documents. For this PWS, Ohio EPA approval is tied to the performance objectives and standards presented in

Table 1-1.

In addition, communications that contain information that could affect ECC's ability to achieve the PWS milestones for the 14 Compliance Restoration sites that occurs between the Army and the regulators, without the presence of ECC, shall be transmitted to ECC through the COR. After reviewing the documents, ECC will provide the Army with comments on any items or issues related that may impact ECC's execution of the work. Documentation for all meetings and conference calls will be completed by the ECC PM and circulated within ten business days to the necessary stakeholders as determined by the Army.

3.4 Public Involvement

All public participation coordination will be approved by the Army through the CO. ECC will provide the necessary support to initiate, schedule, and manage public involvement activities of the project. Public comments will be requested and addressed consistent with the CERCLA/SARA and NCP. The COR, or other Army designee, shall attend and represent the Army at all meetings with the public. ECC will also provide support for RAB meetings and present project-related information (e.g., work plans and findings) to the RAB, as requested by the COR and in accordance with the PWS and terms and conditions of the contract.

4.0 DELIVERABLES

Deliverables for this Delivery Order will be produced in preliminary draft, draft, and final versions and in hard copy and electronic Portable Document Format (PDF). All deliverables will be prepared in accordance with CERCLA and the National Contingency Plan (NCP) following requirements of the Ohio EPA DFFO for RVAAP and the most current version of the RVAAP Deliverable Documents Formatting Guidelines (Vista 2009). Preliminary draft versions of documents will be prepared and submitted to the Army for review. The Army under this task order will provide comments to ECC on any document within 20 business days. It is expected that the Army will provide ECC with one set of consolidated comments through the COR or his designee, and inform ECC when all comments have been transmitted. Once initial comments from the Army are addressed, a draft version of the document will be prepared for review by the regulators and the Army unless the Army requests a review of the revised preliminary draft before it is issued to the regulators. Following the receipt and resolution of stakeholder comments on the draft document, it will be revised and a final version of the document issued for the record. All documents submitted to Ohio EPA will be identified as draft until completion of stakeholder coordination, when they will be signed and finalized (if required). The anticipated comment and review cycle for each project deliverable is as follows:

- Preliminary Draft Deliverables: Army, NGB, and OHARNG review only – up to 20 business days.
- Draft Deliverable comment response and concurrence by Army – up to 15 business days.
- Draft Deliverable Team review: Ohio EPA, NGB, OHARNG, and Army – minimum of 45 calendar days.
- Final Deliverable comment response and concurrence by Ohio EPA, NGB, OHARNG and Army – up to 10 business days.
- Final Deliverable Team review/approval: Ohio EPA, NGB, OHARNG, and Army – minimum of 45 calendar days.

Table 4-1 Summarizes the major documents expected to be prepared to support work at the fourteen CR Sites identified in the PWS. Project deliverables and written communication among the Army, RVAAP, Ohio EPA, NGB, OHARNG and ECC will be delivered to the addresses shown on Table 4-2, which also indicates the number of hard and electronic copies of deliverables to be distributed.

Table 4-1: Required Deliverables List

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<u>Site:</u>	<u>Deliverable:</u>
All Sites	Project Management Plan
All Sites	Quality Assurance Surveillance Plan (draft)
All Sites	Sample and Analysis Plan (Addendum to the RVAAP Facility-Wide Sample and Analysis Plan, 2011)
All Sites	Quality Assurance Project Plan (Addendum to the RVAAP Facility-Wide Quality Assurance Project Plan, 2011)
All Sites	Site Safety and Health Plan (Addendum to the RVAAP Facility-Wide Sample and Analysis Plan, 2001)
CC-RVAAP-71 Barn No. 5 Petroleum Release	Historical Records Review Report
CC-RVAAP-83 Former Buildings 1031 and 1039	Historical Records Review Report
<u>Option:</u> CC-RVAAP-71 Barn No. 5 Petroleum Release	Site Inspection Work Plan Site Inspection Report
<u>Option:</u> CC-RVAAP-83 Former Buildings 1031 and 1039	Site Inspection Work Plan Site Inspection Report
CC-RVAAP-70 East Classification Yard	Site Inspection Work Plan Site Inspection Report
CC-RVAAP-72 Facility-Wide Underground Storage Tanks (USTs)	Site Inspection Work Plan Site Inspection Report
CC-RVAAP-75 George Road Sewage Treatment Plan	Site Inspection Work Plan Site Inspection Report
CC-RVAAP-77 Building 1037 - Laundry Waste Water Sump	Site Inspection Work Plan Site Inspection Report
CC-RVAAP-79 DLA Ore Storage Sites – Remaining Ore Sites	Remedial Investigation Work Plan Remedial Investigation Report
CC-RVAAP-76 Depot Area	Remedial Investigation Work Plan Remedial Investigation Report Feasibility Study
CC-RVAAP-68 Electric Substations (East, West, and No. 3)	Remedial Investigation Work Plan Remedial Investigation Report

<u>Site:</u>	<u>Deliverable:</u>
CC-RVAAP-69 Building 1048 Fire Station	Remedial Investigation Work Plan Remedial Investigation Report
CC-RVAAP-73 Facility-Wide Coal Storage	Remedial Investigation Work Plan Remedial Investigation Report
CC-RVAAP-74 Building 1034 - Motor Pool Hydraulic Lift	Remedial Investigation Work Plan Remedial Investigation Report
CC-RVAAP-78 Quarry Pond Surface Dump	Remedial Investigation Work Plan Remedial Investigation Report
CC-RVAAP-79 DLA Ore Storage Sites – Remaining Ore Sites	Remedial Investigation Work Plan Remedial Investigation Report
<u>Option:</u> CC-RVAAP-70 East Classification Yard	Remedial Investigation Work Plan Remedial Investigation Report
<u>Option:</u> CC-RVAAP-71 Barn No. 5 Petroleum Release	Remedial Investigation Work Plan Remedial Investigation Report
<u>Option:</u> CC-RVAAP-72 Facility-Wide Underground Storage Tanks (USTs)	Remedial Investigation Work Plan Remedial Investigation Report
<u>Option:</u> CC-RVAAP-75 George Road Sewage Treatment Plant	Remedial Investigation Work Plan Remedial Investigation Report
<u>Option:</u> CC-RVAAP-77 Building 1037 Laundry Waste Water Sump	Remedial Investigation Work Plan Remedial Investigation Report
<u>Option:</u> CC-RVAAP-80 Group 2 Propellant Can Tops	Remedial Investigation Work Plan Remedial Investigation Report
<u>Option:</u> CC-RVAAP-83 Former Buildings 1031 and 1039	Remedial Investigation Work Plan Remedial Investigation Report
CC-RVAAP-73 Facility-Wide Coal Storage	Removal Action Work Plan Removal Action Report
CC-RVAAP-79 DLA Ore Storage Sites – Remaining Ore Sites	Removal Action Work Plan Removal Action Report
CC-RVAAP-73 Facility-Wide Coal Storage	Removal Action Work Plan Removal Action Report
CC-RVAAP-74 Building 1034 Motor Pool Hydraulic Lift	Removal Action Work Plan Removal Action Report
CC-RVAAP-78 Quarry Pond Surface Dump	Removal Action Work Plan Removal Action Report
CC-RVAAP-79 DLA Ore Storage Sites – Remaining Ore Sites	Removal Action Work Plan Removal Action Report
<u>Option:</u> CC-RVAAP-72 Facility-Wide Underground Storage Tanks (USTs)	Removal Action Work Plan Removal Action Report

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Table 4-2: Document Distribution List

<u>Agency Contact/Address</u>	<u>Preliminary Draft</u>	<u>Draft</u>	<u>Final</u>
U.S. Army Environmental Command Attn: Mark Eldridge, 2450 Connell Road Fort Sam Houston, TX 78234-7664	HC: 0 EC: 1	HC: 0 EC: 1	HC: 0 EC: 1
BRAC - Assistant Chief of Staff Installation Management Attn: William O'Donnell, BRAC Office Program Manager 2530 Crystal Drive Arlington, VA 22202	HC: 0 EC: 1	HC: 0 EC: 1	HC: 0 EC: 1
Ravenna Army Ammunition Plant Attn: Mark Patterson, Facility Manager Building 1037 8451 State Route 5 Ravenna, OH 44266	HC: 2 EC: 2	HC: 2 EC: 2	HC: 2 EC: 2
Louisville District Corps of Engineers Attn: Glen Beckham, LRL IRP/MMRP Project Manager 600 Martin Luther King Jr. Place Louisville, KY 40202	HC: 3 EC: 3	HC: 3 EC: 3	HC: 3 EC: 3
National Guard Bureau Attn: Kim Harriz, Cleanup Program Manager NGB-AR-EI 111 S. George Mason Drive Arlington, VA 22206	HC: 0 EC: 1	HC: 0 EC: 1	HC: 0 EC: 1
Ohio Army National Guard Attn: Katie Tait, Environmental Specialist 1438 State Route 534, SW Newton Falls, OH 44444	HC: 1 EC: 1	HC: 1 EC: 1	HC: 1 EC: 1
Ohio EPA – NE District, DERR Attn: Eileen Mohr, Facility Coordinator 2110 E. Aurora Road Twinsburg, OH 44087	HC: 0 EC: 0	HC: 2 EC: 2	HC: 2 EC: 2
Ohio EPA Office of Federal Facility Oversight, SW District Attn: Bonnie Buthker, Federal Facilities Coordinator 401 E. 5th Street Dayton, OH 45402	HC: 0 EC: 1	HC: 0 EC: 1	HC: 0 EC: 1
ECC Attn: Al Easterday, Project Manager 33 Boston Post Road West, Suite 340 Marlborough, MA 01752	HC: 1 EC: 1	HC: 1 EC: 1	HC: 1 EC: 1

HC = hard copy
EC = electronic copy

4.1 Additional Site Plans

Prior to the beginning of any field work, ECC will prepare any additional plans or documents (e.g., sampling and analysis plans, quality assurance project plans, waste minimization plans, health and safety plans) consistent with the regulatory drivers listed in Section 1.0 of the PWS, and any other agreements, orders, or regulations that apply to the Installation and sites. These plans and documents shall be subject to Army and Ohio EPA review and approval.

4.2 Project Schedule

The overall project schedule is shown in Appendix A and incorporates ECC's latest time frame for achieving the performance objectives presented in the PWS for the fourteen CR Sites at the time of award of the Delivery Order. A milestone schedule has been prepared and is presented in Appendix B. This schedule will be provided to Ohio EPA for approval per the Director's Final Findings and Orders as needed. A detailed schedule for each site will also be completed and included in the appropriate work plan for each site.

The project schedule will be updated and submitted with the monthly status report as necessary when significant changes are made. The schedule will include all events that impact the project and will be updated for actual starts and finishes, unforeseen or uncontrollable delays, changes in approaches at sites, etc.

4.3 Geographic Information System

ECC will provide the Ravenna Environmental Information System (REIMS) administrator with electronic copies of all documents in PDF and Geographic Information System (GIS) files used to prepare documents. The GIS information will be presented on maps and submitted to the REIMS administrator in electronic format. Drawings will be submitted in electronic (PDF) format. Maps will be submitted in ArcView compatible format or at a minimum in ESRI shape files, ArcInfo coverages, or AutoCad formats. All electronic files will be submitted to the REIMS administrator on compact discs.

4.4 Project Repository and Administrative Record

At the completion of each major milestone, ECC will provide to the Installation POC, in both paper and electronic (PDF) format, project-related information to ensure pertinent documentation and data are available for project reviews, and to provide a clear record to support decisions and remediation documentation. The Installation POC will include this information in the project repository and the Administrative Record, as appropriate. The Administrative Record is located at:

Ravenna Army Ammunition Plant
Building 1037
8451 State Route 5 - Ravenna, OH 44266

ECC shall update at least quarterly, a multimedia (i.e., both paper and electronic format) project repository of all project-related information to ensure that pertinent documentation and data are available for project reviews, and to provide a clear record of the contract approach to support final decisions and remediation completion. This repository is the property of the Army and available to the Army upon request by the CO. A project repository is currently maintained at two locations as follows:

Reed Memorial Library
167 E. Main Street
Ravenna, OH 44266
Phone: (330) 296-2827

Newton Falls Public Library
204 South Canal Street
Newton Falls, Ohio 44444-1694
Phone: (330) 872-1282

4.5 Army Environmental Database and Environmental Restoration Information System

ECC shall comply with the applicable requirements for data validation and submission for the Army Environmental Databases and Environmental Restoration Information System (ERIS) in accordance with Section 4.8.1 of the PWS. Once a site is identified in the Delivery Order as having achieved remedy-in-place (RIP) (i.e., appropriate documentation is finalized), ECC will be responsible for providing the CO, or their designated representative, with the data and documentation necessary for the closeout of each site in the Army Environmental Database – Restoration Module (AEDB-R). In addition, ECC will upload semi-annually, all generated analytical data into the ERIS. The Army, through the CO, will provide data specifications for the AEDB-R and ERIS to ECC. The Army will be responsible for uploading all previous data related to the sites covered under the PWS for ECC's use and it is expected the Army will provide all previous data in ERIS format. The Army shall also provide ECC with the required access and sponsorship to complete these tasks in the ERIS and AEDB-R.

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5.0 QUALITY MANAGEMENT

This chapter discusses quality management and presents the QA/QC strategy to be used by the Army to assess progress toward project milestones. ECC will ensure that the quality of all work performed or produced under this Delivery Order meets Army approval through the COR. A Quality Assurance Project Plan (QAPP) and a Quality Assurance Surveillance Plan will be prepared by ECC and approved by the COR prior to the performance of any physical work.

ECC will prepare the QAPP as an addendum to the Quality Control Plan for the 2010 Phase I Remedial Investigations Services at Compliance Restoration Sites (9 Areas of Concern) (SAIC, 2010) to ensure QA/QC requirements will be met under this Task Order.

In addition, the QAPP will be provided to the Ohio EPA for approval per the Director's Final Findings and Orders. To the extent possible, ECC will utilize existing QA/QC plans prepared for RVAAP and generate addendums to these plans for any new activities. This will ensure procedural consistencies, a higher level of quality and reduce review time. The QA/QC plans will identify the personnel, procedures, controls, instructions, tests, verifications, documents, and forms to be used, and the records to be maintained. Key processes and procedures addressed in the QA/QC plans may include:

- Organizational Description—Duties, responsibilities, and authorities of key project team members.
- Definable Features of Work—Listing and brief descriptions of all definable features identified within the applicable specifications and/or work plan documents.
- Daily Reporting—Complete daily QC reports augmented with supportive data and documentation that is transmitted to the client on a daily basis.
- Submittal Management Procedures—Procedures and methods that certify all submittals are in compliance with the task order requirements.
- Testing Procedures—Procedures and methods that ensure test control measures are adequately performed, documented, and conform to task order requirements.
- Completion Inspection—Procedures for conducting a pre-final inspection, developing a punch list, and resolving deficiencies in preparation for the final inspection.
- Deficiency Reporting—Reporting and tracking using a systematic process that acquires effective corrective action and QC verification.
- Documents and Records—Procedures that ensure a current, accurate, and complete project records system and factual evidence that all required QC activities and/or tests have been performed.

ECC will provide notification to the COR and Ohio EPA a minimum of 15 working days prior to the commencement of significant project activities. These activities will include, but are not limited to, meetings for work at sites, sampling activities, drilling, geophysical investigations, and monitoring events. This will provide the COR with the opportunity to verify compliance with task order requirements and adherence to the stipulations of the project QAPP. ECC will also notify RVAAP to ensure there is no conflict with any ongoing Installation activities and

that appropriate facility access requirements have been met.

5.1 Quality Control Testing

Chemical QC will be provided whenever sampling or analysis for chemical constituents is required in order to achieve milestones. QC for traditional soils or geotechnical testing also will be included. The laboratory(ies) to be used by ECC will be National Environmental Laboratory Accreditation Conference (NELAC)-certified, will perform testing in accordance with requirements of the DOD Quality Systems Manual (QSM), Version 3 (or the latest approved version), and will be compliant with the Louisville Chemistry Guideline (LCG). If necessary, and with approval from the Army, USACE, and the Ohio EPA, ECC may establish an onsite testing laboratory at the project site. All onsite testing will meet the requirements of USEPA, specific state regulator requirements and the most stringent requirements of the most recently approved DOD QSM and the current LCG.

All samples collected and analyzed under this Delivery Order will be generated in Electronic Data Deliverable (EDD) format compatible with uploading requirements for ERIS and other required databases as discussed in Section 4.5. ECC will complete data verification, including successfully processing all required electronic data. The EDD will accurately reflect all analytical quality requirements. All electronic data submitted by the contract laboratory is required to be error-free and in complete agreement with the hard copy data. Laboratories will provide the appropriate Chemical Abstracts Services (CAS) number to a specific analyte. A Load Summary Report and a transmittal letter from the laboratory will accompany the hard copy data report, certifying that the EDD is in agreement with hard copy data reports and was found to be free of errors. ECC will perform data validation on all data received. A copy of the data package also will be provided to RVAAP for the project repositories.

5.2 Data Quality Management

ECC has developed an integrated process for acquiring and managing environmental data for this project. ECC uses a Microsoft SQL Server 2005 as its data repository with quality checks at critical steps. ECC's database will accommodate all field and analytical laboratory data associated with environmental site investigation and remediation for this project. Microsoft Visual Studio 2005 will be the primary tool used for producing project deliverables (such as report tables) or to support data analysis, evaluation, and visualization using tools such as a GIS. ECC will incorporate ArcSDE as the interface for the GIS solution and immediate data retrieval mechanism. GIS data set shall be accompanied by metadata conforming to the Federal Geographic Data Committee (FGDC) Content Standard for Digital Geospatial Metadata (CSDGM) and be provided in a geodatabase that is compliant with the Spatial Data Facilities, Infrastructure, and Environment (SDSFIE) standards and the requirements of the PWS. ECC will test the horizontal accuracy of the GIS data in accordance with the National Standard for Spatial Data Accuracy (NSSDA). All GIS data shall be provided in the Universal Transverse Mercator (UTM) coordinate system and shall have a datum of WGS84. The primary objective of ECC's data acquisition and management process is to generate data that meets the project's data

1031 quality objectives and EDD requirements in a timely and efficient manner. ECC's database
1032 management enhances the ability to accomplish this goal through:

- 1034 • Ease of use and familiarity when working with ECC subcontractor laboratories
- 1035 • Direct upload of EDD from the laboratory into the database
- 1036 • Integrated data completeness and quality checks
- 1037 • Direct support for validation of analytical data per the Facility-Wide Sampling and
1038 Analysis Plan (SAIC, 2011), QSM and LCG requirements
- 1039 • Data management POC for project deliverables, data requests, and reporting
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6.0 SITE LOGISTICS

The ECC PM will communicate with the COR and/or designee to review and coordinate field schedules and activities for execution of the PWS.

6.1 Health and Safety

ECC will produce and implement a written Accident Prevention Plan/Site Safety and Health Plan (APP/SSHP) which will be an addendum to the approved Facility-Wide Safety and Health Plan (FWSHP) (USACE 2011) that will meet the requirements of the federal, state, and local laws and regulations prior to conducting any fieldwork. ECC will ensure that its subcontractors, suppliers, and support personnel follow all established safety and health provisions.

At a minimum, the SSHP will contain the following elements: site description and contaminant characterization, safety and health hazard(s) assessment and risk analysis, safety and health staff organization and responsibilities, site-specific training and medical surveillance parameters, personal protective equipment and decontamination facilities and procedures to be used, monitoring and sampling required, safety and health work precautions and procedures, site control measures, on-site first aid and emergency equipment, emergency response plans and contingency procedures (on-site and off-site), logs, reports, and recordkeeping. Personnel involved in certain munitions response activities will, as required, meet the qualifications of DOD Explosives Safety Board, Technical Pamphlet (TP) 18, and Minimum Qualifications for UXO Technicians and UXO-Qualified Personnel. All personnel performing munitions response activities that present an explosive risk will be limited to a 50-hour workweek, with no individual workday exceeding 10 hours total, unless specifically authorized by the COR. Accident reporting and recordkeeping will be performed in accordance with USACE EM 385-1-1, part 01.D for all USACE elements and missions under the command of the Chief of Engineers.

ECC's proposed work will adhere to the RVAAP Facility-Wide Safety and Health Plan (USACE 2011), ECC's approved SSHP (and associated site-specific addendums) will tier under the RVAAP FWSHP and neither document can be implemented without the other. ECC's health and safety goal is to provide an injury free work environment where facilities and projects are free of recognized hazards; and people, equipment, and the environment are not placed at unreasonable risk of injury or damage.

6.2 Protection of Property

All fourteen Compliance Restoration sites are believed to be limited to the property boundaries of the RVAAP. As such, the USACE does not anticipate that formal Rights of Entries (ROEs) will be required to access the boundaries of the sites. Access to the fourteen CR site properties will be provided by the on-site BRAC-D Facility Manager, and members of the on-site Ohio Army National Guard. Should formal ROEs be required to assess off-property locations, then the U.S. Government will obtain the necessary ROEs for ECC.

ECC will coordinate with Army (RVAAP, USACE and Camp Ravenna) to minimize potential

1099 damage to existing resources and property. Mobilization at intrusive investigation sites will be
1100 sequenced to ensure that impacts are minimized. ECC will be responsible for any damage that
1101 may be caused to property of the United States (Federal property) or any other property owned
1102 by others during ECC activities under this contract and will exercise due diligence in the
1103 protection of all property located on the premises against fire or damage from any and all other
1104 causes. Any property of the United States or owned by others damaged or destroyed by the
1105 ECC incident to the exercise of the privileges herein granted will be promptly repaired or
1106 replaced by ECC to a condition satisfactory to the COR or reimbursement is made by ECC
1107 sufficient to restore or replace the property to a condition satisfactory to the COR in accordance
1108 with Federal Acquisition Regulation (FAR) Clause 52.245-2.

7.0 RECORDS MANAGEMENT

ECC will maintain records of all data collected and related files. All files, including data, lists, remediation results, photographs, and maps, will be organized and will be filed. Electronic files of data, maps, QA/QC data, waste profiles and other pertinent information will be properly archived. Reports and submittals will be provided to the stakeholders as required. All reports will be assigned unique document control numbers. Any records pertaining to or possibly pertaining to any matter in litigation or a matter that may possibly be litigated shall be retained for at least 5 years after the litigation is completed and may be retained longer if otherwise required by contract, applicable law or this policy and may be discarded ONLY with written approval of a company attorney. All project documents will be prepared in accordance with the most recent version of the RVAAP Deliverable Document Format Guidelines.

ECC encourages the use of electronic storing of any and all records when feasible from a practical and financial standpoint. Any documents that are stored electronically on disks may be maintained there permanently if necessary. Any such disks will be labeled clearly and adequately so that record retrieval is efficient. Media chosen for electronic storage will be capable of maintaining records in a readable form for the required retention period and will be able to be accessed even with changes in hardware and software during the retention period. The minimum retention period for specific deliverable types that may be encountered on the project are as follows:

- Accident Reports and Claims – 7 years
- Corporate Records (Minutes, By-Laws, Articles, Shareholder/Stock Records, Acquisition and Sale Records) – Permanent
- Contracts and Leases – 10 years from expiration/termination
- Project Documents (Plans, contracts, notes, etc.) – 10 years from end of project
- Financial Documents (purchase orders, invoices, etc.) – 10 years from end of project
- Contracts and Contract Documents – 10 years from end of project
- Invoices and Billing Documents – 10 years from end of project
- Technical Drawings and Information – Minimum 8 years but according to Contract or applicable law for longer retention
- Accounts Payable Ledgers – 7 years
- Accounts Receivable Ledgers – 7 years
- Government Audit Reports – Permanent
- Bank Reconciliations – 2 years
- Bank Statements – 7 years
- Budget Information – 3 years
- Canceled Checks – 7 years
- Canceled Checks – Permanent
- Cash Books – Permanent
- Depreciation Schedules – Permanent
- Deposit Slips – 10 years

- 1153 • Expense Reports – 10 years
- 1154 • Financial Statements – Permanent
- 1155 • Financing Agreements – Permanent
- 1156 • General Ledgers – Permanent
- 1157 • Internal Audit Work Papers – 7 years from date of report
- 1158 • Inventory Records – 7 years
- 1159 • Invoices to and from Customers – 7 years
- 1160 • Payroll Records – 7 years
- 1161 • Purchase Orders, General – 7 years
- 1162 • Sales Records – 7 years
- 1163 • Tax Returns – Permanent
- 1164 • Stock Option Records – 10 years
- 1165 • Litigation Records – 5 years after conclusion
- 1166 • Legal Records, Other – 10 years
- 1167 • Legal Records related to Assets – Permanent
- 1168 • Legal Records related to Acquisitions & Mergers – Permanent
- 1169 • Insurance Records – Permanent
- 1170 • Intellectual property – Permanent
- 1171 • Real Estate/Deeds – Permanent
- 1172 • Sales Records – 10 years
- 1173 • Training Records – Permanent
- 1174 • Workers Compensation Records – 10 years

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8.0 GOVERNMENT RESOURCES

Government-furnished resources, contractor-furnished and/or acquired property and contractor-furnished resources are discussed in this section.

8.1 Army-Furnished Resources

Under this Delivery Order, the Army shall provide specified resources to ECC for investigation and remediation purposes. Army-furnished resources to be provided to ECC under this task order will include the following:

- Access to Army-maintained records, reports, data, analyses, and information, in their current format (e.g., paper copy, electronic, tape, disks, compact disks), as related to access to DOD and Army policy and guidance documents
- ROEs for all sites in the Delivery Order
- Costs for evacuations, compensation, and temporary housing for displaced residents during intrusive activities and MEC destruction

8.2 Contractor-Furnished Resources

ECC, as the Contractor, must possess all the required expertise, knowledge, equipment and tools required to meet or exceed the government's objectives identified in the Delivery Order in accordance with established industry standards. Contractor furnished resources to be provided by ECC includes the following:

- Coordination with the Army and the Installation in order to get access to the Installation and any off-site properties, as required for execution of the PWS and by doing so, will follow the procedures described during the Contractors' meeting at the Installation.
- Coordination with the Army and the Installation in order to gain access to available infrastructure (e.g., buildings, roadways, waste management units, other Installation facilities) and utilities (e.g., electric power and telephone lines, natural gas and water supply distribution pipelines, and wastewater discharge conveyances), as required for execution of the PWS.
- All waste generated under this contract shall be the responsibility of the Contractor with respect to waste containerization and labels, waste characterization, temporary waste staging and storage, waste transportation, and the proper off-site disposal (within 90 days of generation).
- Any other necessary resources needed to achieve the defined performance objectives in the PWS.

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9.0 REFERENCES

Ohio Environmental Protection Agency (Ohio EPA) 2004. *Director's Final Findings and Orders (DFFO)* for RVAAP, dated June 10.

SAIC 2011. *Facility-Wide Sample and Analysis Plan for Environmental Investigations at the Ravenna Army Ammunition Plant, Ravenna, Ohio*, February 24.

USACE 2011. *Facility-Wide Safety and Health Plan for Environmental Investigations at the Ravenna Army Ammunition Plant, Ravenna, Ohio*, February 24.

Vista Sciences Corporation (Vista) 2009. *Ravenna Army Ammunition Plant Deliverable Document Format Guidelines, Version 18*, dated December 21.

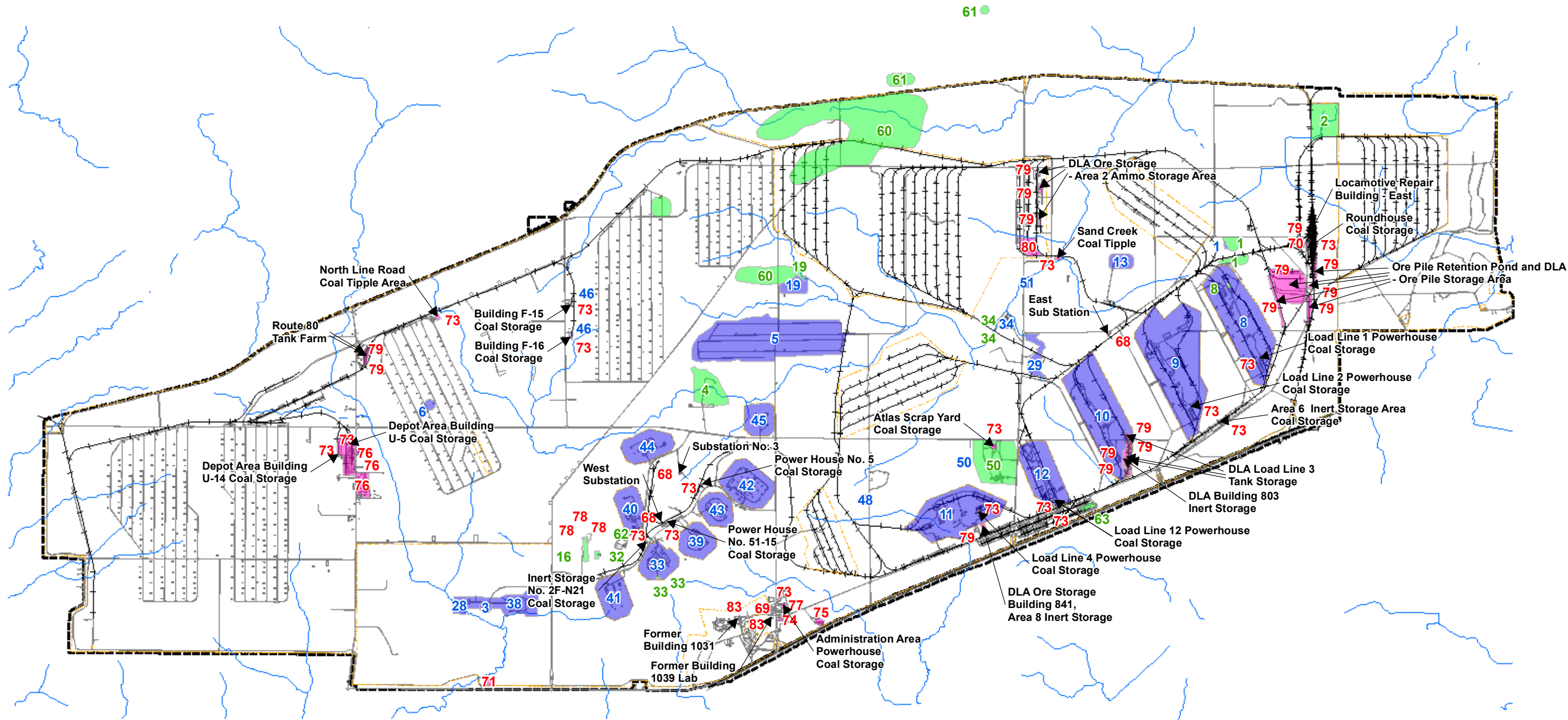
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FIGURES



Figure 1-1
Location Map
Ravenna Army Ammunition Plant
Ravenna, Ohio



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- 77 Building 1037 - Laundry Waste Water Sump

- 78 Quarry Pond Surface Dump
- 79 Ore Pile Retention Pond and DLA - Ore Pile Storage Area
- 79 DLA Ore Storage Building 841, Area 8 Inert Storage
- 79 DLA Building 803 Inert Storage
- 79 DLA Ore Storage - Area 2 Ammo Storage Area
- 79 DLA Load Line 3 Tank Storage
- 79 Route 80 Tank Farm
- 79 Ore Pile Retention Pond and DLA - Ore Pile Storage Area
- 79 Locomotive Repair Building - East
- 79 Ore Pile Retention Pond and DLA - Ore Pile Storage Area
- 80 Group 2 Propellant Can Tops
- 83 Former Building 1031
- 83 Former Building 1039



U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
LOUISVILLE, KENTUCKY

Figure 1-2

SITE MAP

RVAAP/CAMP RAVENNA
RAVENNA, OHIO

APPENDIX A
PROJECT SCHEDULE

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

APPENDIX B

MILESTONE PAYMENT SCHEDULE

**Milestone Payment Schedule
Ravenna Army Ammunition Plant
Environmental Investigation and Remediation
14 Compliance Restoration Sites**

CLIN	Sub-CLIN	Tasks	Payment Metric
0001		Project Management Plan and Quality Assurance Surveillance Plan	
	0001.AA	Draft Project Management Plan	Resolution of Army Comments on Draft
	0001.AB	Final Project Management Plan	Regulatory Approval
	0001.AC	Draft Quality Assurance Surveillance Plan	Resolution of Army Comments on Draft
0002		Historical Records Review CC-RVAAP-71 and CC-RVAAP-83	
		Barn No. 5 Petroleum Release and Former Buildings 1031 and 1039	
	0002.AA	Draft Historical Records Review	Resolution of Army Comments on Draft
	0002.AB	Final Historical Records Review	Regulatory Approval
0003		(OPTIONAL) Site Inspection CC-RVAAP-71	
		Barn No. 5 Petroleum Release	
	0003.AA	Draft Site Inspection Work Plan	Resolution of Army Comments on Draft
	0003.AB	Final Site Inspection Work Plan	Regulatory Approval
	0003.AC	Field Completion Report	Army Acceptance of Data Submittal
	0003.AD	Draft Site Inspection Report	Resolution of Army Comments on Draft
	0003.AE	Final Site Inspection Report	Regulatory Approval
0004		(OPTIONAL) Site Inspection CC-RVAAP-83	
		Former Buildings 1031 and 1039	
	0004.AA	Draft Site Inspection Work Plan	Resolution of Army Comments on Draft
	0004.AB	Final Site Inspection Work Plan	Regulatory Approval
	0004.AC	Field Completion Report	Army Acceptance of Data Submittal
	0004.AD	Draft Site Inspection Report	Resolution of Army Comments on Draft
	0004.AE	Final Site Inspection Report	Regulatory Approval
0005		Site Inspection CC-RVAAP-70, 72, 75, 77	
		CC-RVAAP-70 East Classification Yard, CC-RVAAP-72 Facility Wide Underground Storage Tanks,	
		CC-RVAAP-75 George Road Sewage Treatment Plant, and	
		CC-RVAAP-77 Building 1037 Laundry Waste Water Sump	
	0005.AA	Draft Site Inspection Work Plan	Resolution of Army Comments on Draft
	0005.AB	Final Site Inspection Work Plan	Regulatory Approval
	0005.AC	Field Completion Report	Army Acceptance of Data Submittal
	0005.AD	Draft Site Inspection Report	Resolution of Army Comments on Draft
	0005.AE	Final Site Inspection Report	Regulatory Approval
0006		Remedial Investigation CC-RVAAP-79	
		DLA Ore Storage Site - Main Ore Storage Yard	
	0006.AA	Draft Remedial Investigation Work Plan	Resolution of Army Comments on Draft
	0006.AB	Final Remedial Investigation Work Plan	Regulatory Approval
	0006.AC	Field Completion Report	Army Acceptance of Data Submittal
	0006.AD	Draft Remedial Investigation Report	Resolution of Army Comments on Draft
	0006.AE	Final Remedial Investigation Report	Regulatory Approval

**Milestone Payment Schedule
Ravenna Army Ammunition Plant
Environmental Investigation and Remediation
14 Compliance Restoration Sites**

CLIN	Sub-CLIN	Tasks	Payment Metric
0007		Feasibility Study CC-RVAAP-76	
		Depot Area	
	0007.AA	Draft Remedial Investigation Work Plan	Resolution of Army Comments on Draft
	0007.AB	Final Remedial Investigation Work Plan	Regulatory Approval
	0007.AC	Field Completion Report	Army Acceptance of Data Submittal
	0007.AD	Draft Remedial Investigation Report	Resolution of Army Comments on Draft
	0007.AE	Final Remedial Investigation Report	Regulatory Approval
	0007.AF	Draft Feasibility Study Work Plan	Resolution of Army Comments on Draft
	0007.AG	Final Feasibility Study Work Plan	Regulatory Approval
	0007.AH	Field Completion Report	Army Acceptance of Data Submittal
	0007.AI	Draft Feasibility Study	Resolution of Army Comments on Draft
	0007.AJ	Final Feasibility Study	Regulatory Approval
0008		Remedial Investigation CC-RVAAP-68, 69, 73, 74, 78, AND 79	
		CC-RVAAP-68 Electrical Substation East, West, and West No. 3	
		CC-RVAAP-69 Building 1048 Fire Station, CC-RVAAP-73 Facility Wide Coal Storage	
		CC-RVAAP-74 Building 1034 Motor Pool Hydraulic Lift, CC-RVAAP-78 Quarry Pond Surface Dump	
		CC-RVAAP-79 DLA Ore Storage Sites - Remaining Ore Sites	
	0008.AA	Draft Remedial Investigation Work Plan	Resolution of Army Comments on Draft
		CC-RVAAP-68 Electrical Substation East, West, and West No. 3	Resolution of Army Comments on Draft
		CC-RVAAP-69 Building 1048 Fire Station	Resolution of Army Comments on Draft
		CC-RVAAP-73 Facility Wide Coal Storage 1	Resolution of Army Comments on Draft
		CC-RVAAP-74 Building 1034 Motor Pool Hydraulic Lift	Resolution of Army Comments on Draft
		CC-RVAAP-78 Quarry Pond Surface Dump s	Resolution of Army Comments on Draft
	0008.AB	Draft Remedial Investigation Work Plan	Regulatory Approval
		CC-RVAAP-68 Electrical Substation East, West, and West No. 3	Regulatory Approval
		CC-RVAAP-69 Building 1048 Fire Station	Regulatory Approval
		CC-RVAAP-73 Facility Wide Coal Storage 1	Regulatory Approval
		CC-RVAAP-74 Building 1034 Motor Pool Hydraulic Lift	Regulatory Approval
		CC-RVAAP-78 Quarry Pond Surface Dump s	Regulatory Approval
	0008.AC	Field Completion Report	Army Acceptance of Data Submittal
		CC-RVAAP-68 Electrical Substation East, West, and West No. 3	Army Acceptance of Data Submittal
		CC-RVAAP-69 Building 1048 Fire Station	Army Acceptance of Data Submittal
		CC-RVAAP-73 Facility Wide Coal Storage 1	Army Acceptance of Data Submittal
		CC-RVAAP-74 Building 1034 Motor Pool Hydraulic Lift	Army Acceptance of Data Submittal
		CC-RVAAP-78 Quarry Pond Surface Dump s	Army Acceptance of Data Submittal
	0008.AD	Draft Remedial Investigation Report	Resolution of Army Comments on Draft
		CC-RVAAP-68 Electrical Substation East, West, and West No. 3	Resolution of Army Comments on Draft
		CC-RVAAP-69 Building 1048 Fire Station	Resolution of Army Comments on Draft
		CC-RVAAP-73 Facility Wide Coal Storage 1	Resolution of Army Comments on Draft
		CC-RVAAP-74 Building 1034 Motor Pool Hydraulic Lift	Resolution of Army Comments on Draft
		CC-RVAAP-78 Quarry Pond Surface Dump s	Resolution of Army Comments on Draft
	0008.AE	Final Remedial Investigation Report	Regulatory Approval
		CC-RVAAP-68 Electrical Substation East, West, and West No. 3	Regulatory Approval
		CC-RVAAP-69 Building 1048 Fire Station	Regulatory Approval
		CC-RVAAP-73 Facility Wide Coal Storage 1	Regulatory Approval
		CC-RVAAP-74 Building 1034 Motor Pool Hydraulic Lift	Regulatory Approval
		CC-RVAAP-78 Quarry Pond Surface Dump s	Regulatory Approval
		CC-RVAAP-79 DLA Ore Storage Sites - Remaining Ore Site	

**Milestone Payment Schedule
Ravenna Army Ammunition Plant
Environmental Investigation and Remediation
14 Compliance Restoration Sites**

CLIN	Sub-CLIN	Tasks	Payment Metric
0009		(OPTIONAL) Remedial Investigation CC-RVAAP-70	
		East Classification Yard	
	0009.AA	Draft Remedial Investigation Work Plan	Resolution of Army Comments on Draft
	0009.AB	Final Remedial Investigation Work Plan	Regulatory Approval
	0009.AC	Field Completion Report	Army Acceptance of Data Submittal
	0009.AD	Draft Remedial Investigation Report	Resolution of Army Comments on Draft
	0009.AE	Final Remedial Investigation Report	Regulatory Approval
0010		(OPTIONAL) Remedial Investigation CC-RVAAP-71	
		Barn No. 5 Petroleum Release	
	00010.AA	Draft Remedial Investigation Work Plan	Resolution of Army Comments on Draft
	00010.AB	Final Remedial Investigation Work Plan	Regulatory Approval
	00010.AC	Field Completion Report	Army Acceptance of Data Submittal
	00010.AD	Draft Remedial Investigation Report	Resolution of Army Comments on Draft
	00010.AE	Final Remedial Investigation Report	Regulatory Approval
0011		(OPTIONAL) Remedial Investigation CC-RVAAP-72	
		Facility-Wide Underground Storage Tanks	
	00011.AA	Draft Remedial Investigation Work Plan	Resolution of Army Comments on Draft
	00011.AB	Final Remedial Investigation Work Plan	Regulatory Approval
	00011.AC	Field Completion Report	Army Acceptance of Data Submittal
	00011.AD	Draft Remedial Investigation Report	Resolution of Army Comments on Draft
	00011.AE	Final Remedial Investigation Report	Regulatory Approval
0012		(OPTIONAL) Remedial Investigation CC-RVAAP-75	
		George Road Sewage Treatment Plant	
	00012.AA	Draft Remedial Investigation Work Plan	Resolution of Army Comments on Draft
	00012.AB	Final Remedial Investigation Work Plan	Regulatory Approval
	00012.AC	Field Completion Report	Army Acceptance of Data Submittal
	00012.AD	Draft Remedial Investigation Report	Resolution of Army Comments on Draft
	00012.AE	Final Remedial Investigation Report	Regulatory Approval
0013		(OPTIONAL) Remedial Investigation CC-RVAAP-77	
		Building 1037 Laundry Waste Water Sump	
	00013.AA	Draft Remedial Investigation Work Plan	Resolution of Army Comments on Draft
	00013.AB	Final Remedial Investigation Work Plan	Regulatory Approval
	00013.AC	Field Completion Report	Army Acceptance of Data Submittal
	00013.AD	Draft Remedial Investigation Report	Resolution of Army Comments on Draft
	00013.AE	Final Remedial Investigation Report	Regulatory Approval

**Milestone Payment Schedule
Ravenna Army Ammunition Plant
Environmental Investigation and Remediation
14 Compliance Restoration Sites**

CLIN	Sub-CLIN	Tasks	Payment Metric
0014		(OPTIONAL) Remedial Investigation CC-RVAAP-80	
		Group 2 Propellant Can Tops	
	00014.AA	Draft Remedial Investigation Work Plan	Resolution of Army Comments on Draft
	00014.AB	Final Remedial Investigation Work Plan	Regulatory Approval
	00014.AC	Field Completion Report	Army Acceptance of Data Submittal
	00014.AD	Draft Remedial Investigation Report	Resolution of Army Comments on Draft
	00014.AE	Final Remedial Investigation Report	Regulatory Approval
0015		(OPTIONAL) Remedial Investigation CC-RVAAP-83	
		Former Buildings 1031 and 1039	
	00015.AA	Draft Remedial Investigation Work Plan	Resolution of Army Comments on Draft
	00015.AB	Final Remedial Investigation Work Plan	Regulatory Approval
	00015.AC	Field Completion Report	Army Acceptance of Data Submittal
	00015.AD	Draft Remedial Investigation Report	Resolution of Army Comments on Draft
	00015.AE	Final Remedial Investigation Report	Regulatory Approval
0016		Non-Time Critical Removal Action Inside Load Lines 1,2,3,4,12 for CC-RVAAP-73 AND 79	
		CC-RVAAP-73 Facility Wide Coal Storage Inside Load Lines 1,2,3,4	
		CC-RVAAP-79 DLA Ore Storage Sites Load Line 12	
	00016.AA	Draft Non-Time Critical Removal Action Work Plan	Resolution of Army Comments on Draft
		4	Resolution of Army Comments on Draft
		CC-RVAAP-73 Facility Wide Coal Storage Inside Load Lines 1,2,3,	Resolution of Army Comments on Draft
	00016.AB	Draft Non-Time Critical Removal Action Work Plan	Regulatory Approval
		4	Regulatory Approval
		CC-RVAAP-73 Facility Wide Coal Storage Inside Load Lines 1,2,3,	Regulatory Approval
	00016.AC	Field Completion Report	Army Acceptance of Data Submittal
		4	Army Acceptance of Data Submittal
		CC-RVAAP-73 Facility Wide Coal Storage Inside Load Lines 1,2,3,	Army Acceptance of Data Submittal
	00016.AD	Draft Non-Time Critical Removal Action Report	Resolution of Army Comments on Draft
		4	Resolution of Army Comments on Draft
		CC-RVAAP-73 Facility Wide Coal Storage Inside Load Lines 1,2,3,	Resolution of Army Comments on Draft
	00016.AE	Draft Non-Time Critical Removal Action Report	Regulatory Approval
		4	Regulatory Approval
		CC-RVAAP-73 Facility Wide Coal Storage Inside Load Lines 1,2,3,	Regulatory Approval
		CC-RVAAP-79 DLA Ore Storage Sites Load Line 1	
0017		Non-Time Critical Removal Action CC-RVAAP-79	
		DLA Ore Storage Sites - Main Ore Storage Yard	
	00017.AA	Draft Non-Time Critical Removal Action Work Plan	Resolution of Army Comments on Draft
	00017.AB	Final Non-Time Critical Removal Action Work Plan	Regulatory Approval
	00017.AC	Field Completion Report	Army Acceptance of Data Submittal
	00017.AD	Draft Non-Time Critical Removal Action Report	Resolution of Army Comments on Draft
	00017.AE	Final Non-Time Critical Removal Action Report	Regulatory Approval

**Milestone Payment Schedule
Ravenna Army Ammunition Plant
Environmental Investigation and Remediation
14 Compliance Restoration Sites**

CLIN	Sub-CLIN	Tasks	Payment Metric
0018		Non-Time Critical Removal Action CC-RVAAP-73, 74, 78, 79	
		CC-RVAAP-73 Facility Wide Coal Storage - Remaining Sites	
		CC-RVAAP-74 Building 1034 Motor Pool Hydraulic Lift	
		CC-RVAAP-78 Quarry Pond Surface Dump	
		CC-RVAAP-79 DLA Storage Sites - Remaining Sites	
	00018.AA	Draft Non-Time Critical Removal Action Work Plan	Resolution of Army Comments on Draft
		s	Resolution of Army Comments on Draft
		CC-RVAAP-73 Facility Wide Coal Storage - Remaining Site	Resolution of Army Comments on Draft
		CC-RVAAP-74 Building 1034 Motor Pool Hydraulic Lift	Resolution of Army Comments on Draft
		CC-RVAAP-78 Quarry Pond Surface Dum	Resolution of Army Comments on Draft
	00018.AB	Final Non-Time Critical Removal Action Work Plan	Regulatory Approval
		s	Regulatory Approval
		CC-RVAAP-73 Facility Wide Coal Storage - Remaining Site	Regulatory Approval
		CC-RVAAP-74 Building 1034 Motor Pool Hydraulic Lift	Regulatory Approval
		CC-RVAAP-78 Quarry Pond Surface Dum	Regulatory Approval
	00018.AC	Field Completion Report	Army Acceptance of Data Submittal
		s	Army Acceptance of Data Submittal
		CC-RVAAP-73 Facility Wide Coal Storage - Remaining Site	Army Acceptance of Data Submittal
		CC-RVAAP-74 Building 1034 Motor Pool Hydraulic Lift	Army Acceptance of Data Submittal
		CC-RVAAP-78 Quarry Pond Surface Dum	Army Acceptance of Data Submittal
	00018.AD	Draft Non-Time Critical Removal Action Report	Resolution of Army Comments on Draft
		s	Resolution of Army Comments on Draft
		CC-RVAAP-73 Facility Wide Coal Storage - Remaining Site	Resolution of Army Comments on Draft
		CC-RVAAP-74 Building 1034 Motor Pool Hydraulic Lift	Resolution of Army Comments on Draft
		CC-RVAAP-78 Quarry Pond Surface Dum	Resolution of Army Comments on Draft
	00018.AE	Final Non-Time Critical Removal Action Report	Regulatory Approval
		s	Regulatory Approval
		CC-RVAAP-73 Facility Wide Coal Storage - Remaining Site	Regulatory Approval
		CC-RVAAP-74 Building 1034 Motor Pool Hydraulic Lift	Regulatory Approval
		CC-RVAAP-78 Quarry Pond Surface Dum	Regulatory Approval
		CC-RVAAP-79 DLA Storage Sites - Remaining Sites	
0019		(OPTIONAL) Non-Time Critical Removal Action CC-RVAAP-72	
		Facility Wide Underground Storage Tanks	
	00019.AA	Draft Non-Time Critical Removal Action Work Plan	Resolution of Army Comments on Draft
	00019.AB	Final Non-Time Critical Removal Action Work Plan	Regulatory Approval
	00019.AC	Field Completion Report	Army Acceptance of Data Submittal
	00019.AD	Draft Non-Time Critical Removal Action Report	Resolution of Army Comments on Draft
	00019.AE	Final Non-Time Critical Removal Action Report	Regulatory Approval
0020		(OPTIONAL) Non-Time Critical Removal Action CC-RVAAP-75	
		George Road Sewerage Treatment Plant	
	00020.AA	Draft Non-Time Critical Removal Action Work Plan	Resolution of Army Comments on Draft
	00020.AB	Final Non-Time Critical Removal Action Work Plan	Regulatory Approval
	00020.AC	Field Completion Report	Army Acceptance of Data Submittal
	00020.AD	Draft Non-Time Critical Removal Action Report	Resolution of Army Comments on Draft
	00020.AE	Final Non-Time Critical Removal Action Report	Regulatory Approval
0021	00021.AA	For all remedies, optimize capital, and long-term costs	

APPENDIX C

COMMUNICATION PLAN

APPENDIX D

COMMENT RESPONSE TABLE

(to be included in the Final version)