Final

Site Safety and Health Plan for the 2010 Phase I Remedial Investigation Services at Compliance Restoration Sites (9 Areas of Concern) Addendum No.1

> Ravenna Army Ammunition Plant Ravenna, Ohio

> Contract No. W912QR-08-D-0008 Delivery Order No. 0019

> > **Prepared for:**



US Army Corps of Engineers<sub>®</sub>

United States Army Corps of Engineers Louisville District

**Prepared by:** 



Science Applications International Corporation 8866 Commons Boulevard Twinsburg, Ohio 44087

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# Site Safety and Health Plan for the 2010 Phase I Remedial Investigation Services at Compliance Restoration Sites (9 Areas of Concern)

Addendum No.1

Ravenna Army Ammunition Plant Ravenna, Ohio

Contract No. W912QR-08-D-0008 Delivery Order No. 0019

#### **Prepared for:**

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

#### **Prepared by:**

Science Applications International Corporation 8866 Commons Boulevard Twinsburg, Ohio 44087

September 10, 2010

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OHARNG = Ohio Army National Guard

RVAAP = Ravenna Army Ammunition Plant

USACE = United States Army Corps of Engineers

REIMS = Ravenna Environmental Information Management System

SAIC = Science Applications International Corporation

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# ACRONYMS AND ABBREVIATIONS

|              | Asherter Containing Material                           |
|--------------|--|
| ACM          | Asbestos-Containing Material                           |
| AOC          | Area of Concern  |
| AST          | Aboveground Storage Tank                               |
| bgs          | Below Ground Surface                                   |
| С            | Central  |
| Camp Ravenna | Camp Ravenna Joint Military Training Center            |
| CIH          | Certified Industrial Hygienist                         |
| CPR          | Cardiopulmonary Resuscitation                          |
| CR           | Compliance Restoration                                 |
| CSP          | Certified Safety Professional                          |
| DLA          | Defense Logistics Agency                               |
| DoD          | Department of Defense                                  |
| FWSHP        | Facility Wide Safety and Health Plan                   |
| HAZWOPER     | Hazardous Waste Site Operations and Emergency Response |
| IRP          | Installation Restoration Program                       |
| LL #2        | Load Line 2  |
| LL #6        | Load Line 6  |
| LL #12       | Load Line 12   |
| MC           | Munitions Constituent                                  |
| MD           | Munitions Debris                                       |
| MEC          | Munitions and Explosives of Concern                    |
| MRS          | Munitions Response Site                                |
| Ν            | North  |
| NE           | Northeast  |
| NGB          | National Guard Bureau                                  |
| NPDES        | National Pollutant Discharge Elimination System        |
| OHARNG       | Ohio Army National Guard                               |
| Ohio EPA     | Ohio Environmental Protection Agency                   |
| OJT          | On-the-Job Training                                    |
| PCB          | Polychlorinated Biphenyl                               |
| PH           | Powerhouse   |
|              |  |

# **ACRONYMS AND ABBREVIATIONS (CONTINUED)**

| PPE   | Personal Protective Equipment                  |
|-------|--|
| RAC   | Risk Assessment Code                           |
| RI    | Remedial Investigation                         |
| RR    | Railroad                                       |
| RVAAP | Ravenna Army Ammunition Plant                  |
| S     | South  |
| SAIC  | Science Applications International Corporation |
| SOW   | Scope of Work                                  |
| SS    | South Service                                  |
| SSHO  | Site Safety and Health Officer                 |
| SSHP  | Site Safety and Health Plan                    |
| SVOC  | Semi-Volatile Organic Compound                 |
| USACE | United States Army Corps of Engineers          |
| USAE  | USA Environmental, Inc.                        |
| UST   | Underground Storage Tank                       |
| UXO   | Unexploded Ordnance                            |
| VOC   | Volatile Organic Compound                      |
| WW    | Waterworks                                     |
|       |  |

## **1.0 INTRODUCTION**

Science Applications International Corporation's (SAIC's) formal policy, stated in the Environmental Health and Safety Program manual, is to take every reasonable precaution to protect the health and safety of our employees, the public, and the environment. To this end, the Ravenna Army Ammunition Plant (RVAAP) *Facility-Wide Safety and Health Plan* (FWSHP) (USACE 2001) and this Site Safety and Health Plan (SSHP) will collectively set forth the specific procedures required to protect SAIC and SAIC subcontractor personnel involved in the field activities. These plans are driven by requirements contained in the most current revision of the United States Army Corps of Engineers (USACE) *Safety and Health Requirements Manual, EM-385-1-1*. SAIC activities are also subject to the requirements of the SAIC Corporate Environmental Compliance and Health and Safety Program and associated procedures. All field personnel are required to comply with the requirements of these programs and plans.

The FWSHP addresses program issues, hazards, and hazard controls common to the entire facility. This SSHP will be an addendum to the FWSHP serving as a lower tier document addressing the hazards and controls for the Phase I Remedial Investigation (RI) activities, which include a property visit and perimeter survey. Both activities are non-intrusive. Copies of the FWSHP and the SSHP Addendum will be present at the work site during the property visit and perimeter survey. Neither the FWSHP nor the SSHP Addendum are stand-alone documents; therefore, one cannot be implemented without the other.

SAIC will perform a non-intrusive property visit and perimeter survey at nine (9) areas of concern (AOCs) at RVAAP, herein referred to as Compliance Restoration (CR) sites. The 9 CRs include the following:

- CC-RVAAP-68 Electric Substations (East, West, No. 3);
- CC-RVAAP-69 Building 1048 Fire Station;
- CC-RVAAP-70 East Classification Yard;
- 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; and
- CC-RVAAP-77 Building 1037 Laundry Waste Water Sump.

A description of each CR site and the potential contaminants associated with each may be found in Section 2.2 of this SSHP.

The property visit will be conducted to document and assess areas of past and current Department of Defense (DoD) use, storage, disposal, and areas of potential release. The property visit will also focus on evaluating areas where unknowns or data gaps exist. In addition, a perimeter survey will be conducted to document the surrounding areas adjacent to the CR sites. The perimeter survey will document current land uses, sensitive environments, and potential overland migration pathways. No intrusive field work will be conducted during either the property visit or perimeter survey.

The potential for chemical overexposure appears to be very low based on the nature of planned tasks. Physical hazards are associated with slips, trips, and falls during the property visit and perimeter survey. Task-specific hazard controls have been specified for these tasks. Due to the nature of the tasks, it is anticipated that Level D personal protective equipment (PPE) will be required. If site conditions should change, the work will stop and the Site Safety and Health Officer (SSHO) will re-assess site conditions and hazard mitigation steps. Further details regarding PPE are contained in Section 7.0.

At least one of the CR sites is located within the boundary of a munitions response site (MRS) and the potential exists to encounter discarded military munitions, munitions debris, and/or unexploded ordnance during the non-intrusive field activities (e.g. property visit). Therefore, USA Environmental, Inc. (USAE), SAIC's subcontractor, will provide munitions and explosives of concern (MEC) avoidance services at the sites within known MRS boundaries or suspect munitions.

### 2.1 FACILITY DESCRIPTION

When the RVAAP Installation Restoration Program (IRP) began in 1989, RVAAP was identified as a 21,419-acre installation. The property boundary was resurveyed by Ohio Army National Guard (OHARNG) over a 2-year period (2002 and 2003) and the total acreage of the property was found to be 21,683.289 acres. As of February 2006, a total of 20,403 acres of the former 21,683-acre RVAAP has been transferred to the National Guard Bureau (NGB) and subsequently licensed to OHARNG for use as a military training site.

The current RVAAP consists of 1,280 acres scattered throughout the OHARNG Camp Ravenna Joint Military Training Center, herein referred to as Camp Ravenna (Figure 1-2). Camp Ravenna is in northeastern Ohio within Portage and Trumbull Counties, approximately 3 miles (4.8 km) east-northeast of the City of Ravenna and approximately 1 mile (1.6 km) northwest of the City of Newton Falls. The RVAAP portions of the property are solely located within Portage County. RVAAP/Camp Ravenna is a parcel of property approximately 11 miles (17.7 km) long and 3.5 miles (5.6 km) 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 (Figures 1-1 and 2-1). Camp Ravenna is surrounded by several communities: Windham on the north; Garrettsville 6 miles (9.6 km) to the northwest; Newton Falls 1 mile (1.6 km) to the southeast; Charlestown to the southwest; and Wayland 3 miles (4.8 km) to the south.

When RVAAP was operational, Camp Ravenna did not exist and the entire 21,683-acre parcel was a government-owned, contractor-operated industrial facility. The RVAAP IRP encompasses investigation and cleanup of past activities over the entire 21,683 acres of the former RVAAP. References to RVAAP in this document are considered to be inclusive of the historical extent of RVAAP, which is inclusive of the combined acreages of the current Camp Ravenna and RVAAP, unless otherwise specifically stated.

The following is a description of each CR site included in the Scope of Work (SOW) for this project.

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

The east electrical substation is located in proximity to the intersection of Remalia Road and Load Line No. 2 Road at the RVAAP facility. The substation comprises an area of approximately 12,300 square feet, which includes the land surrounding Building 25-27. Building 25-27 is included as part of this AOC.

The west electrical substation is located west of Load Line 5 on Fuze & Booster Service Road at the RVAAP facility. The substation comprises an area of approximately 3,000 square feet, which includes the land surrounding Building 28-28, which was formerly used as the transformer station. Building 28-28

is not included as part of this AOC. Substation No. 3 is located in the Fuze & Booster Service area between Load Lines 10 and 11 at the RVAAP facility. The substation comprises an area of approximately 10,000 square feet. The substation and all transformer equipment have been removed from the site.

### 2.1.2 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.

### 2.1.3 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.

### 2.1.4 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 2-1 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 an

MRS and MEC avoidance procedures will be required for property visits and perimeter surveys in this area.

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

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

### 2.1.5 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;
- Load Line 4 Powerhouse;
- Load Line 12 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 required for property visits and perimeter surveys in these areas.

### 2.1.6 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 and 4 feet 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.

#### 2.1.7 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 (#3100000BD), which allowed discharge to Outfall No. 002 (to the adjacent receiving stream). The NPDES permit was maintained until 1993 when the facility ceased operations.

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.

#### 2.1.8 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 a recognized MRS.

#### 2.1.9 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 entering 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.

#### 2.2 POTENTIAL CONTAMINANTS

Table 2-2 presents the list of potential contaminants at each CR site.

| CR Site  | Potential Contaminants                    |
|--|---|
| CC-RVAAP-68 Electric Substations               | VOCs, SVOCs, PCBs                         |
| CC-RVAAP-69 Building 1048 Fire Station         | VOCs                                      |
| CC-RVAAP-70 East Classification Yard           | VOCs, SVOCs, PCBs                         |
| CC-RVAAP-72 Facility-Wide Underground          | VOCs, SVOCs                               |
| Storage Tanks                                  |   |
| CC-RVAAP-73 Facility-Wide Coal Storage         | SVOCs, metals                             |
| CC-RVAAP-74 Building 1034 Motor Pool           | SVOCs, PCBs                               |
| Hydraulic Lift                                 |   |
| CC-RVAAP-75 George Road Sewage Treatment Plant | Explosives, metals (specifically mercury) |
| CC-RVAAP-76 Depot Area                         | Explosives, VOCs, SVOCs                   |
| CC-RVAAP-77 Building 1037 Laundry Waste        | Explosives                                |
| Water Sump                                     |   |

| Table 2-2. List of Potential Contaminants at Each CR Sit | Cable 2-2.         List of Potential Cor | ntaminants at Each CR Site |  |
|--|--|----------------------------|--|
|--|--|----------------------------|--|

PCB = Polychlorinated Biphenyl

SVOC = Semi-Volatile Organic Compound

VOC = Volatile Organic Compound

## 3.0 HAZARD/RISK ANALYSIS

The purpose of the task hazard/risk analysis is to identify and assess potential hazards that may be encountered by personnel and to prescribe required controls. Table 3-1 provides a general checklist of hazards that may be posed by this project and an indication whether that hazard type is present for this project. If additional tasks or significant hazards are identified during the work, this document will be modified by addendum or field change order to include the additional information.

| Yes | No | Hazard   |  |
|-----|----|--|--|
|     | X  | Confined space entry   |  |
|     | Х  | Excavation entry (excavations may be entered)                    |  |
|     | Х  | Heavy equipment (drill rigs, backhoe)                            |  |
|     | X  | Fire and explosion (fuels)                                       |  |
|     | Х  | Electrical shock (utilities and tools)                           |  |
| X   |    | Exposure to chemicals (contaminants and chemical tools)          |  |
| X   |    | Temperature extremes   |  |
| X   |    | Biological hazards (poison ivy, Lyme disease, West Nile disease) |  |
|     | X  | Radiation or radioactive contamination                           |  |
|     | Х  | Noise (heavy equipment)  |  |
|     | Х  | Drowning   |  |
|     | Х  | ACM  |  |
| Х   |    | MEC (potential to encounter UXO)                                 |  |

| Table 3-1.  | Hazards         | Inventory |
|-------------|-----------------|-----------|
| 1 abic 5-1. | <b>Hazar</b> us | inventory |

ACM = Asbestos-Containing Material

MEC = Munitions and Explosives of Concern

UXO = Unexploded Ordnance

The specific tasks for this project include conducting a property visit and perimeter survey at each CR site.

#### 3.1 TASK-SPECIFIC HAZARD ANALYSIS

Table 3-2 presents task-specific hazards, relevant hazard controls, and required monitoring, if appropriate, for all of the planned tasks.

#### **3.2 POTENTIAL EXPOSURES**

The tasks to be conducted as part of this project include a property visit and perimeter survey at each CR site. These tasks are non-intrusive in nature. However, at least one of the CR sites is located within a known munitions response site. Therefore, potential exposures include MEC and unexploded ordnance (UXO).

#### Table 3-2. Hazards Analysis

| Date Prepared: 1 July 2010<br>Project: RVAAP 2010 Phase I Remedial Investigation Services at  |       | Risk Assessment Code (RAC):                        |   |             |            |        | Μ        |
|---|-------|--|---|-------------|------------|--------|----------|
| <ul> <li>9 Compliance Restoration Sites</li> <li>Job: Site Walk and/or Civil Survey</li> <li>Prepared By: Corey Pacer, PE</li> <li>Reviewed By: Stephen L. Davis, CIH, CSP</li> </ul> |       | Extremely High Risk                                |   | Probability |            |        |          |
|   |       | H = High Risk<br>M = Moderate Risk<br>L = Low Risk |   | Likely      | Occasional | Seldom | Unlikely |
| Recommended Protective Clothing & Equipment:  | ٦ 🗆   | Catastrophic                                       | Е | Е           | Н          | Н      | Μ        |
| Level D PPE   | i t y | Critical   | Е | Н           | Н          | М      | L        |
|   | v e r | Marginal   | Н | Н           | М          | М      | L        |
|   | S e   | Negligible   | Н | Μ           | М          | L      | L        |

| JOB<br>STEPS | HAZARDS         | ACTIONS TO ELIMINATE OR MINIMIZE HAZARDS  | EM 385-1-1<br>(PARA REF) |
|--------------|-----------------|---|--------------------------|
| General      | Biological      | Level D PPE   | EM 385-1-1               |
|              | hazards (bees,  | Insect repellant, as necessary.   | 06.D                     |
|              | ticks, Lyme     | Pant legs tucked into boots or otherwise closed to minimize tick entry and contact with harmful plants.   |                          |
|              | disease,        | Inspect for ticks during the day and at the end of each work day (See Section 9.0).                       |                          |
|              | histoplasmosis, | Avoidance of accumulations of bird or bat droppings (See Section 9.0).                                    |                          |
|              | wasps, snakes)  | Protective ointments and/or specialized cleaners if working in areas with poisonous plants.               |                          |
|              |                 | Site specific instruction in recognition and avoidance of harmful plants and/or animals.                  |                          |
|              | Temperature     | Administrative controls (see Section 8.0).  | EM 385-1-1 06.I          |
|              | extremes        | Cooled (shaded) or warmed break area depending on the season.   |                          |
|              |                 | Routine breaks in established break area and unscheduled breaks if needed (See Section 8.0)               |                          |
|              |                 | Chilled water if temperature exceeds 70°F.  |                          |
|              |                 | Monitoring – Ambient temperature measurements at least twice daily. Temperatures greater than 80°F,       |                          |
|              |                 | temperatures less than 30°F, and the use of impermeable clothing require additional controls (See Section |                          |
|              |                 | 8.0)  |                          |
|              |                 | Site and season specific instruction in weather hazards and hazard controls.                              |                          |

| Table 3-2. Hazards Analysis (continued) |                       |   |  |   |                               |
|---|-----------------------|---|--|---|-------------------------------|
| JOB<br>STEPS                            | HAZARDS               |   | ACTIONS TO ELIMINATE OR MINIMI   | EM 385-1-1<br>(PARA REF)  |                               |
| General                                 | Contact with<br>MEC   | intrusive work. W   | n ordnance recognition for all field personnel. Cle<br>Vithdrawal of all non-UXO personnel if ordnance o<br>ual surveys for ordnance. Instrument surveys by U  | EM 385-1-1<br>33.A  |                               |
|   | Exposure to chemicals |   | nds and any other exposed areas prior to taking an g and medical clearance.  | EM 385-1-1<br>06.A and B and<br>section 28  |                               |
|   | Severe weather        |   | were weather shelter/strong structure before begin<br>0 miles of site or tornado warning issued. Do not v  | EM 385-1-1 06.I   |                               |
| Vehicle<br>Operation                    | Vehicle<br>accidents  | driving, complian<br>includes the vehic<br>verifies that the for<br>brakes, speedome<br>view mirror, cab, | n (valid driver's license, seat belt use, routine vehic<br>ace with applicable laws and regulations, and defen<br>cle and any associated items such as trailers or exter<br>blowing items are present and functional: seatbelt(<br>eter, fuel gage, horn, windshield, windshield wiper,<br>non-slip surfaces on steps, and tires (approximatel<br>RVAAP facility personnel shall take necessary pre- | EM 385-1-1 06   |                               |
|   | Equipment to be       | Used  | Inspection Requirements  | Training Requiremen   | nts                           |
| Vehicles                                |                       |   | Daily safety inspections of operations. Initial<br>and at least weekly inspections of equipment.<br>Daily vehicle inspection   | HAZWOPER 40-hour training current n<br>Medical clearance<br>Properly trained personnel to operate e<br>Valid driver's licenses<br>Site-specific training including site haza<br>training<br>CPR and First Aid training for at least<br>and at least one person per field team | quipment<br>ard communication |

CELRL Form 1259, 1 November 2001

CPR = Cardiopulmonary Resuscitation HAZWOPER = Hazardous Waste Site Operations and Emergency Response

MEC = Munitions and Explosives of Concern

PPE = Personal Protective Equipment

RAC = Risk Assessment Code RVAAP = Ravenna Army Ammunition Plant UXO = Unexploded Ordnance Previous Versions are Obsolete and Should Not Be Used

## 4.0 MUNITIONS AND EXPLOSIVES OF CONCERN AVOIDANCE

Prior to conducting a property visit and/or perimeter survey at any CR site within a MRS, SAIC field personnel will adhere to the following protocol.

Prior to the start of field operations within an MRS, SAIC field crews will be provided MEC/UXO awareness, identification, safety, and avoidance briefings or training. SAIC field crews will be escorted by the UXO Technician at all times until the UXO Technician has completed visual and magnetometer survey of access routes and work areas. All cleared areas will be marked.

Escorted personnel will follow behind the UXO Technician. If anomalies or MEC/UXO are detected, the UXO Technician will halt escorted personnel in place, mark the item(s), select a course around the item, and instruct escorted personnel to follow. The anomaly will be reported to the on-site SAIC Project Manager or designee, who will initiate the appropriate response actions.

Cleared access routes will be at least twice as wide as the widest vehicle entering the MRS. At a minimum, the work area will be a square, with a side dimension equal to twice the length of the largest vehicle or piece of equipment for use on-site.

This Section presents the personnel responsible for site safety and health and emergency response. Table 5-1 identifies the SAIC and subcontractor staff that will fill key roles. Refer to Section 3.0 of the FWSHP for information on the roles and responsibilities of key positions.

| Position                              | Name                 | Phone        |
|---------------------------------------|----------------------|--------------|
| SAIC Health and Safety Manager        | Steve Davis CIH, CSP | 865-481-4755 |
| SAIC Project Manager                  | Kevin Jago           | 865-481-4614 |
| SAIC Project Engineer                 | Corey Pacer          | 330-353-6153 |
| SAIC Site Safety and Health Officer   | Heather Miller       | 330-573-8571 |
| USA Environmental, Inc. MEC Avoidance | Don Shaw             | 813-846-9138 |

CIH= Certified Industrial Hygienist

CSP = Certified Safety Professional

MEC = Munitions and Explosives of Concern

SAIC = Science Applications International Corporation

## 6.0 TRAINING

Training requirements, from Section 4.0 of the FWSHP, are summarized in Table 6-1 and in Table 3-2.

| Training   | Worker       | Supervisor   | Site Visitor<br>(exclusion zone) |
|--|--------------|--------------|----------------------------------|
| HAZWOPER (40-hr, 3-day OJT)  |              | $\checkmark$ |                                  |
| HAZWOPER Annual Refresher (8 hr)                                     |              | $\checkmark$ |                                  |
| HAZWOPER Supervisors Training (8 hr)                                 |              | $\checkmark$ |                                  |
| Pre-entry Briefing   |              |              |                                  |
| Site-Specific Hazard Communication (contained in pre-entry briefing) | $\checkmark$ | $\checkmark$ | $\checkmark$                     |
| Safety Briefing (daily and whenever conditions or tasks change)      | $\checkmark$ | $\checkmark$ | $\checkmark$                     |
| CPR and First Aid Training   | $\checkmark$ |              |                                  |

 Table 6-1. Training Requirements

 $\sqrt{1}$  = required

HAZWOPER = Hazardous Waste Site Operations and Emergency Response

OJT = On-the-Job Training

CPR = Cardiopulmonary Resuscitation

General guidelines for selection and use of PPE are presented in Section 5.0 of the FWSHP. Specific PPE requirements for this work are presented in the hazard/risk analysis section (Section 3.0).

## 8.0 MEDICAL SURVEILLANCE

Medical surveillance requirements, as presented in Section 6.0 of the FWSHP, are summarized in Table 8-1.

| Baseline   | Routine                         | Overexposure             | Termination             |
|------------|---------------------------------|--------------------------|-------------------------|
| Prior to   | Every 12 months, unless greater | Upon developing symptoms | Upon termination or re- |
| work       | frequency is deemed             | or where exposure limits | assignment.             |
| assessment | appropriate by attending        | have been exceeded or    |                         |
|            | physician. Not to exceed 2-year | suspected to have been   |                         |
|            | interval.                       | exceeded.                |                         |

All medical exams shall include (see Section 6.2 of the Facility Wide Safety and Health Plan):

- Medical/work history;
- Physical exam by physician;
- Audiometry;
- Blood screening and blood count;
- Chest x-ray, as specified by physician;
- Electrocardiogram, as specified by physician;
- Spirometry; and
- Urinalysis.

The Phase I RI activities are not expected to pose airborne exposure hazards given that the work to be performed is non-intrusive and will not generate airborne hazards. Therefore, an exposure monitoring/air sampling program is not applicable.

General requirements for heat/cold stress monitoring are contained in Section 8.0 of the FWSHP.

Standard operating safety procedures are described in Section 9.0 of the FWSHP.

Site control measures are described in Section 10.0 of the FWSHP. No formal site control is expected to be necessary for this project, as the work to be performed is non-intrusive. In addition, the RVAAP facility is not open to the public, and only authorized personnel are allowed entry.

Personal hygiene and decontamination requirements are described in Section 11.0 of the FWSHP and in Section 3.0 of this addendum.

Emergency contacts, telephone numbers, directions to the nearest medical facility, and general procedures can be found in the FWSHP (Section 12.0). All emergencies on-site will be coordinated first through **Guard Post 1** [(330) 358-2017] who will coordinate the response. The SAIC Field Operations Manager will remain in charge of all SAIC and subcontractor personnel during emergency activities. The SAIC field office will serve as the assembly point if it becomes necessary to evacuate one or more remedial locations. During mobilization, the SSHO will verify that the emergency information in Section 12.0 of the FWSHP is correct.

Each field team shall have a 2-way radio capable of contacting Guard Post 1 for communications purposes.

During field operations all on-site personnel shall have Cardiopulmonary Resuscitation (CPR)/first aid training.

| Position   | Phone                                       |  |
|--|---|--|
| RVAAP Guard Post 1                                       |   |  |
| (Police, Fire, Emergency Medical)                        | (330) 358-2017                              |  |
| Hospital (Robinson Memorial, Ravenna)                    | (330) 297-2449/0811                         |  |
| RVAAP Facility Manager                                   |   |  |
| Mark Patterson   | (330) 358-7311                              |  |
| RVAAP Operation and Maintenance Contractor               |   |  |
| Jim McGee, Vista Sciences                                | (330) 358-3005                              |  |
| USACE  |   |  |
| Mark W. Nichter  | (502) 315-6375                              |  |
| Ohio EPA, Eileen Mohr                                    | Office: (330) 963-1221                      |  |
| SAIC Project Manager,                                    |   |  |
| Kevin Jago   | Office: (865) 481-4614 Cell: (330) 617-3146 |  |
| Corey Pacer  | Office: (330) 405-5811 Cell: (330) 353-6153 |  |
| SAIC Health and Safety Personnel,                        | (865) 481-4755                              |  |
| Steve Davis CIH, CSP (Program Health and Safety Manager) | Office: (330) 405-5814 Cell: (330) 573-8571 |  |
| Heather Miller (Project Health and Safety Officer)       |   |  |

## Table 14-1. Emergency Contract Phone Number

CIH= Certified Industrial Hygienist

CSP = Certified Safety Professional

Ohio EPA = Ohio Environmental Protection Agency

RVAAP = Ravenna Army Ammunition Plant

SAIC = Science Applications International Corporation

USACE = U.S. Army Corps of Engineers

Logs, reports, and record keeping requirements are described in Section 13.0 of the FWSHP.

USACE (U.S. Army Corps of Engineers) 2001. Facility Wide Safety and Health Plan for Environmental Investigations at the Ravenna Army Ammunition Plant, Ravenna, Ohio, DACA62-00-D-0001, D.O. CY02, March 2001.

USACE 2003. Safety and Health Manual, EM-385-1-1.

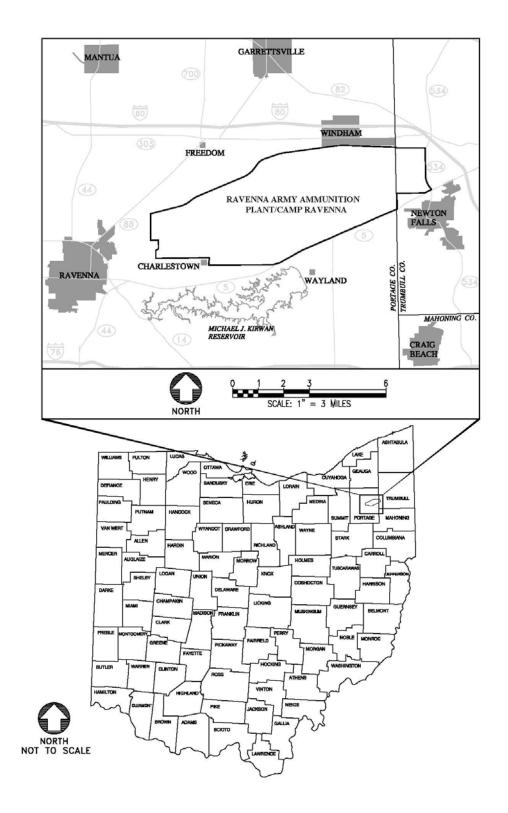


Figure 17-1. General Location and Orientation of RVAAP/Camp Ravenna

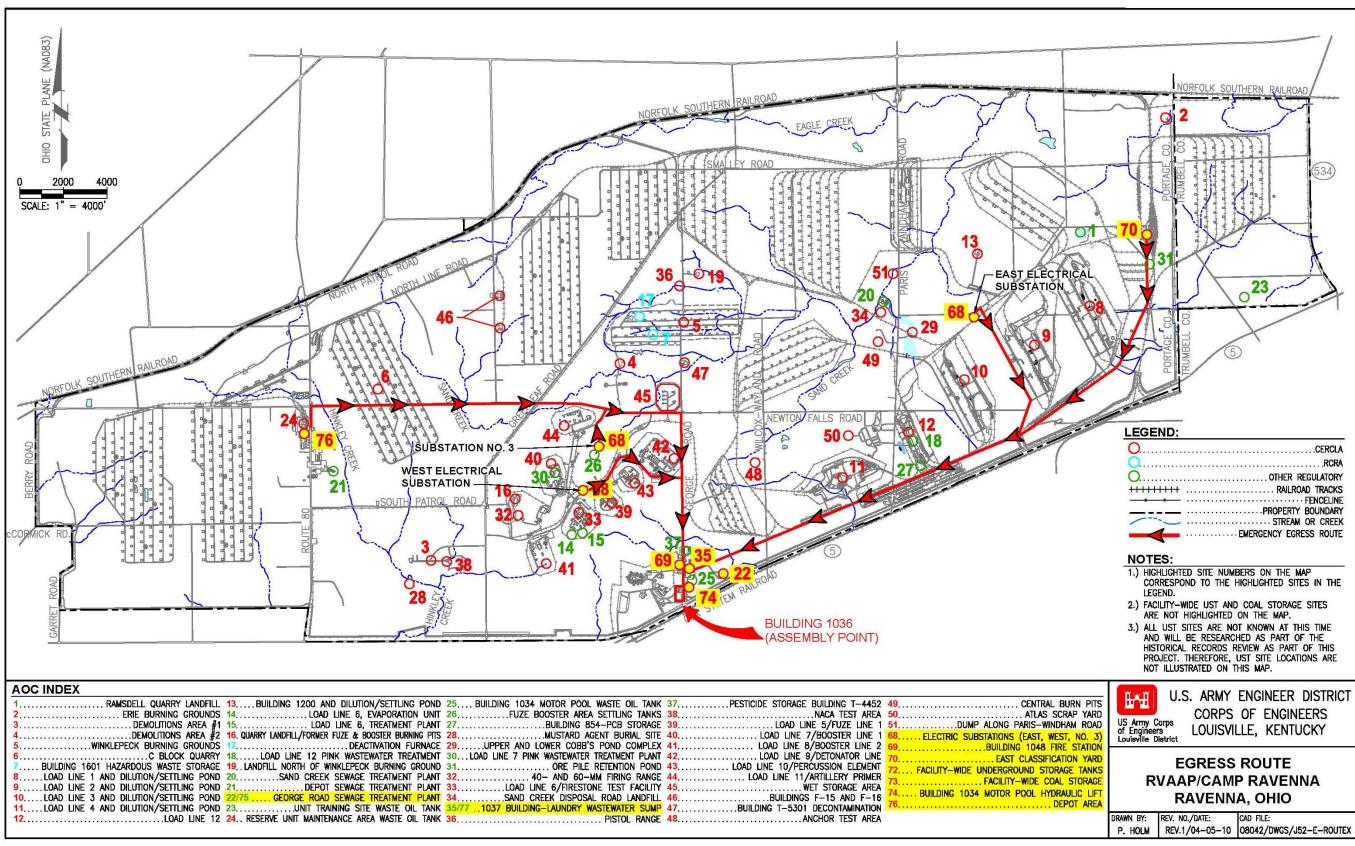


Figure 17-2. Egress Route

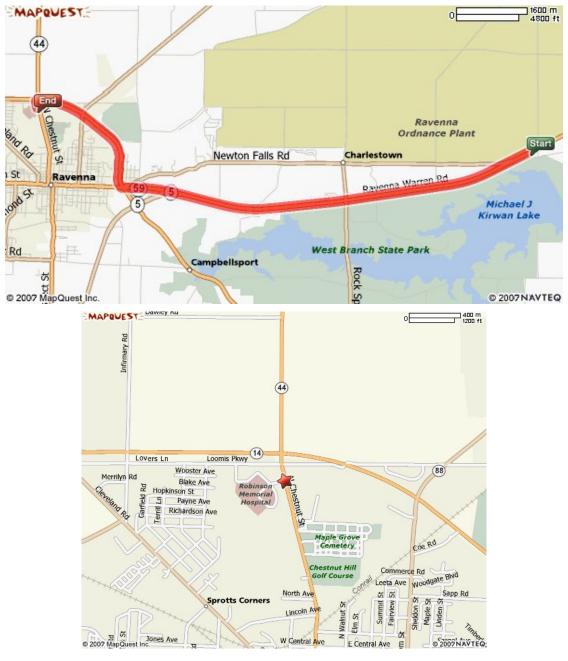


Figure 17-3. Route Map to Pre-Notified Medical Facility Robinson Memorial Hospital 6847 N. Chestnut Street Ravenna, Ohio (330) 297-0811

Directions: West on State Route 5. Stay straight onto OH-59 West. Turn Right onto OH-14/OH-44. Turn Left onto North Chestnut St.

## DRAFT SITE SAFETY AND HEALTH PLAN FOR THE 2010 PHASE I REMEDIAL INVESTIGATION SERVICES AT COMPLIANCE RESTORATION SITES (9 AREAS OF CONCERN), ADDENDUM NO. 1 RAVENNA ARMY AMMUNITION PLANT, RAVENNA, OHIO COMMENT RESPONSE TABLE

Rev. 1 September 1, 2010

|                                  | Page 1 of 1   |   |   |                |   |  |
|----------------------------------|---|---|---|----------------|---|--|
| Comment<br>Number                | Page or<br>Sheet &<br>Line No.                                    | New Page<br>or Sheet  | Comment   | Recommendation | Response  |  |
| OHARNG Camp Ravenna (Katie Tait) |   |   |   |                |   |  |
| CR-1                             | Pg 2-3,<br>Table 2-1  | Pg 2-3,<br>Table 2-1  | UTES area only had 2 former USTs<br>(one with fuel oil and one with waste<br>oil). These tanks were owned and<br>operated by the OHARNG. The<br>waste oil UST is listed as RVAAP-<br>23. Therefore, I am tracking on 1<br>UST but not the other 2 that are<br>listed. Not sure what USTs are being<br>referenced. Please clarify. |                | Clarification. Table 2-1 was derived from the RVAAP Environmental Baseline Survey. We currently do not have additional information on the subject USTs pending research of historical information. Per comment A-1 to the Draft Project Management, USTs RV-91, RV-92, and RV-95 listed for the UTES area have been deleted from the table, as they are not included in the scope of CC-RVAAP-72. However, SAIC will provide any additional data relating to location and purpose of the USTs as historical data research is conducted.   |  |
| CR-2                             | Pg. 2-4,<br>Section 2.2.7<br>George<br>Road<br>Treatment<br>Plant | Pg. 2-5,<br>Section 2.2.7<br>George<br>Road<br>Treatment<br>Plant | Again, this CC site is related to a<br>mercury spill. The sewage treatment<br>plant itself was addressed under the<br>NPDES permit closure. This site is<br>related to addressing the mercury<br>spill. This is not clear in the text.<br>Please clarify.   |                | Agree. The following text has been inserted on<br>Page 2-5, after Line 9, describing potential<br>historical releases of mercury at the George Road<br>Sewage Treatment Plant:<br>"Available information indicates approximately one<br>quart of mercury was released to the floor drain at<br>the plant (date unknown). It is anticipated the<br>mercury may have remained in the receiving piping<br>and/or traps located below the floor drain in the<br>pipe galley. If the mercury escaped the pipe galley,<br>then it may have impacted the receiving (down-<br>gradient) trickling filters and/or the down-gradient<br>drying beds." |  |

Page 1 of 1