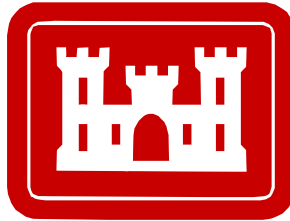


**FINAL  
REMOVAL ACTION WORK PLAN**

**REMOVAL ACTION  
AT CC RVAAP-70 – EAST CLASSIFICATION YARD  
RAVENNA ARMY AMMUNITION PLANT RESTORATION  
PROGRAM**

**CAMP JAMES A. GARFIELD  
PORTAGE AND TRUMBULL COUNTIES, OHIO**

Prepared for



**U.S. Army Corps of Engineers  
Louisville District  
P.O. Box 59  
Louisville, KY 40201-0059**

**Contract No.: W912QR19D0056  
Delivery Order No.: W912QR23F0015**

**Prepared by  
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**August 2024**

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## CONTRACTOR STATEMENT OF INDEPENDENT TECHNICAL REVIEW

PIKA-Insight, JV, has completed the preparation of this Removal Action Work Plan as part of the Removal Action at CC RVAAP-70 – East Classification Yard at the Former Ravenna Army Ammunition Plant (RVAAP)/Camp James A. Garfield. Notice is hereby given that an independent technical review has been conducted that is appropriate to the level of risk and complexity inherent in the project. During the independent technical review, compliance with established policy principles and procedures, utilizing justified and valid assumptions, was verified. This independent technical review included evaluation of data quality objectives; technical assumptions; methods, procedures, and material to be used in analyses; the appropriateness of data used and level of data obtained; and reasonableness of the results, including whether the product meets the customer's needs consistent with law and existing USACE policy.



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Marco Mendoza  
Project Manager

8/14/24

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Date



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Signature  
Independent Technical Reviewer

8/14/24

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Date

**FINAL  
REMOVAL ACTION WORK PLAN**

**REMOVAL ACTION  
AT CC RVAAP-70 – EAST CLASSIFICATION YARD  
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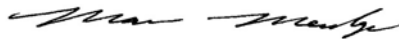
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Louisville, KY 40201-0059**

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Stafford, TX 7747**

**Contract No.: W912QR19D0056  
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**August 2024**

**PREPARED UNDER THE SUPERVISION OF  
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 Removal Action at CC RVAAP-70 – East Classification Yard  
 Camp James A. Garfield, Portage and Trumbull Counties, Ohio  
 August 2024

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 SWDO            Southwest District Office  
 USACE            United States Army Corps of Engineers

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Abbreviations and Acronyms

|              |   |
|--------------|---|
| AOC          | Area of Concern   |
| APP          | Accident Prevention Plan  |
| ARNG         | Army National Guard   |
| bgs          | Below Ground Surface  |
| CERCLA       | Comprehensive Environmental Response, Compensation, and Liability Act |
| CJAG         | Camp James A. Garfield  |
| DU           | Decision Unit   |
| EE/CA        | Engineering Evaluation/Cost Analysis                                  |
| EFS          | Environmental Field Services, Inc.                                    |
| ft           | foot/feet   |
| ft amsl      | feet above mean sea level   |
| HRR          | Historical Records Review   |
| OHARNG       | Ohio Army National Guard  |
| Ohio EPA     | Ohio Environmental Protection Agency                                  |
| PCB          | Polychlorinated biphenyl  |
| PIKA-Insight | PIKA-Insight Joint Venture, LLC                                       |
| PM           | Project Manager   |
| PWS          | Performance Work Statement  |
| RACR         | Removal or Remedial Action Completion Report                          |
| RAWP         | Removal Action Work Plan  |
| RVAAP        | Ravenna Army Ammunition Plant   |
| SI           | Site Inspection   |
| SSHO         | Site Safety and Health Officer  |
| SSHP         | Site Safety and Health Plan   |
| Tetra Tech   | Tetra Tech, Inc.  |
| U.S.         | United States   |
| USACE        | United States Army Corps of Engineers                                 |
| USEPA        | U.S. Environmental Protection Agency                                  |

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## **1.0 INTRODUCTION**

### **1.1 PURPOSE**

PIKA-Insight Joint Venture, LLC (PIKA-Insight), has been contracted by the United States Army Corps of Engineers (USACE) to provide Environmental Remediation Services for Camp James A. Garfield (CJAG) Joint Military Training Center, formerly known as the Ravenna Army Ammunition Plant (RVAAP). This Removal Action Work Plan (RAWP) describes the activities to implement the approved soil removal action for CC RVAAP-70 East Classification Yard described in the Final Action Memorandum (Parsons, 2021). PIKA-Insight has developed this RAWP to comply with the Performance Work Statement, dated August 5, 2022, and revised September 7, 2022, for the removal action at CC RVAAP-70 East Classification Yard. This work is being performed in accordance with USACE Contract W912QR19D0056, Delivery Order W912QR23F0015.

CC RVAAP-70 is the designated Area of Concern (AOC) for this report and is located within the former RVAAP now known as CJAG. The removal action described in the Final Action Memorandum and discussed in this RAWP is being implemented to achieve Unrestricted (Residential) Land Use.

The specific objectives of this RAWP include:

- Identify project administrative responsibilities.
- Present planning activities to be completed prior to removal action.
- Describe procedures and performance criteria to implement the removal action.
- Provide a schedule for the removal action implementation.
- Describe reporting requirements after removal action implementation.

### **1.2 SCOPE**

Based upon the Chemical Evaluation of Soil of the Decision Units (DUs) in the Engineering Evaluation/Cost Analysis (EE/CA) (Parsons, 2021), benzo(a)pyrene detected in the surface soil of DU03 requires removal to achieve the removal action objective to reduce risk from contaminants

of concern. DU03 is a 15-foot step out surrounding the exterior perimeter of Building 47-40. The removal of benzo(a)pyrene in surface soil at DU03 would eliminate the potential risks to future users of the site and would achieve Unrestricted (Residential) Land Use. The approved removal action described in this RAWP includes brush removal, waste characterization sampling, soil excavation and off-site disposal at DU03 (0 to 1 foot [ft] below ground surface [bgs]), confirmation soil sampling, surveying, and restoration.

## **2.0 FACILITY AND SITE DESCRIPTION**

The following sections provide a description of the facility and site characteristics.

### **2.1 FACILITY DESCRIPTION AND HISTORY**

The former RVAAP, now known as CJAG Joint Military Training Center, is located in northeastern Ohio within Portage and Trumbull counties. CJAG is approximately three (3) miles east/northeast of the City of Ravenna and one (1) mile north/northwest of the City of Newton Falls (**FIGURE 2-1**). CJAG is federally owned and is approximately 11 miles long and 3.5 miles wide. CJAG is bounded by State Route 5, the Michael J. Kirwan Reservoir, and the CSX System Railroad to the south; Garret, McCormick, and Berry Roads to the west; the Norfolk Southern Railroad to the north; and State Route 534 to the east. In addition, CJAG is surrounded by the communities of Windham, Garrettsville, Charlestown, and Wayland.

The former RVAAP was a load, assembly, and pack facility built to produce large caliber artillery projectiles and bombs. Administrative control of the facility (21,683 acres) has been transferred to the United States (U.S.) Property and Fiscal Officer for Ohio and subsequently licensed to the Ohio Army National Guard (OHARNG) for use as a military training site. The RVAAP Installation Restoration Program, managed by the Army National Guard (ARNG) and the OHARNG, administers investigation and cleanup of past activities over the entire 21,683 acres of the former RVAAP. The Ohio Environmental Protection Agency (Ohio EPA) is the regulatory agency for the RVAAP restoration program.

### **2.2 SITE DESCRIPTION**

The following sections present the site description and history and discuss previous activities at CC RVAAP-70 East Classification Yard.

#### **2.2.1 Site Name, Location, and Description**

The former RVAAP was originally equipped with east and west classification yards during the facility's early operational years. CC RVAAP-70 East Classification Yard is located east of Load Line 1 and the Defense Logistics Agency former Main Ore Storage Area, and near the intersection of Ramsdell Road and Irons Road (**FIGURE 2-2** and **FIGURE 2-3**). No documentation was found

during the Historical Records Review (HRR) (SAIC, 2011) to define the specific years of operation of the AOC. The CC RVAAP-70 East Classification Yard AOC consists of Building 47-40 (the Round House still exists, but is not actively used), the former herbicide storage shed (former Building 47-60), the containment area for a former aboveground storage tank (documented spill of No. 5 fuel oil occurred within the containment area in 1986), and an outdoor open wash rack south of Building 47-40 (north of Butts-Kistler Road). A railroad track complex is located east of the AOC and is currently used by the OHARNG. Most of the other rail lines in the area have been removed. Two former 15,000-gallon diesel fuel underground storage tanks, RV-11 and RV-22 were located west of the wash rack, but were removed in February 1990 and received No Further Action determinations in April 1992 (SAIC, 2011). A site map displaying the locations of existing and former structures is provided on [FIGURE 2-3](#).

The CC RVAAP-70 East Classification Yard was used for switching and maintaining railroad cars. Building 47-40 (Round House) was used for locomotive engine repairs and other maintenance activities (SAIC, 2011). The former herbicide storage shed was used to store a track-mounted herbicide sprayer and the herbicides used to control vegetation along the railroads at the former RVAAP. Interviewees for the HRR noted that an outdoor open wash rack was located to the south of Building 47-40 which was used to wash box cars. The wash rack was also reportedly used to wash train engines.

### **2.2.2 Site History**

The following paragraphs summarize details for CC RVAAP-70 East Classification Yard presented in the *Final Historical Records Review Report for the 2010 Phase I Remedial Investigation Services at Compliance Restoration Sites (9 Areas of Concern), Ravenna Army Ammunition Plant, Ravenna, Ohio* (SAIC, 2011). Representative historical aerial photographs from 1952 and 2006 are included in Appendix R of the HRR.

Building 47-40 (Round House) was used as a locomotive maintenance and repair building. Building 47-40 still exists but is no longer used for any purpose. Building 47-40 is a red brick building approximately 55 feet by 143.5 feet by 36 feet. The interior of the building contains a floor pit that was used by personnel to access the undersides of the engines for repair. No

documented evidence related to spills or releases were found for the Round House building. Building 47-40 also contained at least two polychlorinated biphenyl (PCB) transformers. Service to the transformers is unknown. Interviewees indicated the transformer oil was tested for PCBs; however, no records of testing were discovered during the HRR evaluation. Staining from past operations was visible on the concrete floor within the building. No other visible evidence of impacts was noted during the property visit/perimeter survey.

### **2.2.3 Topography**

The topography of CJAG is gently undulating with an overall decrease in ground elevation from a topographic high of approximately 1,220 feet above mean sea level (ft amsl) in the far western portion of CJAG to low areas at approximately 930 ft amsl in the far eastern portion of CJAG.

Local topography is relatively flat at CC RVAAP-70 East Classification Yard. The ground surface elevation is between 950 and 960 ft amsl and slopes gently to the east.

### **2.2.4 Geology**

The surficial soil unit at CC RVAAP-70 East Classification Yard is Mahoning silt loam or Fitchville silt loam. These soils are Hiram Till glacial deposits. The bedrock underlying the AOC is Sharon Sandstone. The elevation of bedrock at CC RVAAP-70 East Classification Yard is approximately 950 ft amsl or less than 10 ft bgs.

### **2.2.5 Hydrogeology**

Groundwater flow across CJAG is generally to the east. Most wells yield 5 to 20 gallons per minute from sandstone units of the Pottsville Group, of which the Sharon Sandstone is a member (Winslow and White, 1966). Wells may yield as much as 800 gallons per minute where the sandstone units are of large thickness, areal extent, and permeability.

The potentiometric surface for CJAG aquifers is mapped annually from groundwater elevation measurements in monitoring wells, most recently in the Facility-Wide Groundwater Monitoring Program, RVAAP-66 Facility-Wide Groundwater Annual Report for 2015 (TEC-WESTON Joint Venture, 2016). The groundwater flow direction in the unconsolidated aquifer is generally to the east. Groundwater and/or saturated conditions were not observed in soil borings. Therefore, it has

been determined that groundwater does not exist in unconsolidated soils at CC RVAAP-70 East Classification Yard.

### **2.3 PREVIOUS INVESTIGATIONS**

The HRR recommended that surface soil and dry sediment samples around doors and service bay entrances and in drainage ditches leading from the building to the storm sewer inlets located around the building be analyzed for target analyte list metals, semi-volatile organic compounds, and PCBs (Note, the HRR term “dry sediment” referred to soil that is only intermittently covered with surface water [i.e., surface soil]).

The HRR recommended that areas around the other features within CC RVAAP-70, including an aboveground storage tank, a storage shed, and an outdoor wash rack be analyzed for contaminants including semi-volatile organic compounds, volatile organic compounds, and PCBs.

Site Inspection (SI) sampling and analysis plans were designed based on specific recommendations for each of the potential release areas within the AOC as outlined in the HRR (SAIC, 2011). Initial SI field work was detailed in a work plan (Environmental Chemical Corporation, 2012) and sampling was conducted in November, December 2012, and April 2013. A follow-on work plan was developed for additional sampling (Parsons, 2017), which was conducted at CC RVAAP-70 East Classification Yard in January and February 2018.

An SI Report (Parsons, 2018) was completed to document the results of the field activities performed for CC RVAAP-70 East Classification Yard. As part of the SI, surface soil (0-1 ft bgs) and subsurface soil (greater than 1 ft bgs) were sampled to determine the presence of site-related chemicals and identify potential contaminants within the AOC. Surface water and sediment are not present at the AOC.

The AOC was divided into DUs based on potential release areas for investigation. The only DU that was recommended for further evaluation in a Remedial Investigation was DU03 Building 47-40 Round House – Exterior, a 15-foot step out along the perimeter of Building 47-40, due to potential contaminants within the surface soil (0-1 ft bgs). No further investigation was recommended for subsurface soil at DU03 as no potential contaminants were identified.



Data generated during the CC RVAAP-70 East Classification Yard SI were screened to identify site-related chemicals and included incremental sampling methodology surface soil, discrete surface soil, and subsurface soil samples.

After the SI Report was finalized, the Army prepared a Draft Remedial Investigation Work Plan (Parsons, 2019). The draft work plan proposed additional soil sampling or contaminant delineation and risk assessment.

Ohio EPA reviewed the draft work plan (Ohio EPA, 2019) and noted that the screening values used in the SI and the draft Remedial Investigation work plan were one-tenth of the acceptable unrestricted (residential) cleanup goal, and that contaminant concentrations for many of the DUs within the AOC were sufficiently low as to not require remedial action. Ohio EPA further noted that the standard remedial approach of the U.S. Environmental Protection Agency (USEPA) and National Contingency Plan is to accomplish a Remedial Investigation/Feasibility Study only if remedial action is warranted. Ohio EPA questioned whether the SI recommendation of a Remedial Investigation/Feasibility Study was justified or if the AOC could be resolved using another mechanism such as a limited removal action.

Ohio EPA (Ohio EPA, 2019) also included an assessment of each potential contaminant at each DU as identified in the SI and indicated that DU03 was the only DU that has notable contamination as shown in **FIGURE 2-4**.

Upon review of the Ohio EPA (Ohio EPA, 2019) evaluation, the ARNG decided to move forward into a non-time-critical removal action for the CC RVAAP-70 East Classification Yard, and to pursue a removal action for surface soil contaminants at DU03. The Army determined that it would be more efficient and cost-effective to proceed with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) process with an EE/CA to address CC RVAAP-70 contamination.

## **2.4 FUTURE LAND USE**

CC RVAAP-70 East Classification Yard will have future military use with the representative use of Unrestricted (Residential) Land. The removal of polycyclic aromatic hydrocarbons in surface soil at DU03 would eliminate the potential risks to future users of the site and would achieve this use.

### **3.0 PROJECT ORGANIZATION AND COORDINATION**

The following section describes the authority and responsibility of the project team for PIKA-Insight Joint Venture, LLC (PIKA-Insight) and Tetra Tech, Inc's (Tetra Tech) operations at CJAG. Personnel from PIKA-Insight and Tetra Tech were selected based on qualifications, previous experience, and training. The project team will provide the specific technical and management capabilities and qualifications to perform the contract work.

On behalf of PIKA-Insight, Tetra Tech will prepare deliverables, oversee field activities, and assist in coordinating subcontractors. Deliverables will be reviewed by Tetra Tech prior to undergoing independent technical review by PIKA-Insight. The status of field activities will be communicated to PIKA-Insight at regular intervals to aid with scheduling and avoid miscommunications. Documentation standards will be agreed upon by both Tetra Tech and PIKA-Insight prior to implementation during field activities.

Project staff members will be qualified to perform their assigned tasks in accordance with terms outlined in the Performance Work Statement. Verification of personnel qualifications will be documented.

#### **3.1 USACE CONTRACTING OFFICER'S REPRESENTATIVE**

Nathaniel Peters II will serve as the USACE Contracting Officer's Representative. Duties include overseeing PIKA-Insight to ensure work is completed in accordance with approved plans. The USACE Contracting Officer's Representative also coordinates responses for unexpected materials encountered.

#### **3.2 OHARNG AND ARNG RESTORATION REPRESENTATIVES**

National Guard representatives include Katie Tait (OHARNG Restoration Representative), and Kevin Sedlak (ARNG Restoration Representative). Ms. Tait will be responsible for signing waste profiles and manifests, waste management, assisting with project coordination and access, and document review. Mr. Sedlak will provide overall coordination support, review of field activities, and document review.

### **3.3 OHIO ENVIRONMENTAL PROTECTION AGENCY**

The Ohio EPA is the regulatory agency for this project. The Ohio EPA will review project documents and ensure that the field activities are completed in accordance with this RAWP and regulatory requirements.

### **3.4 CONTRACTOR PROJECT MANAGER**

Marco Mendoza, PG, will serve as the Project Manager (PM) and is the person in charge of the overall project and has full authority for coordination and direction of the project. The PM will be assisted by the onsite personnel. The PM will communicate with the USACE and ARNG. Specific responsibilities of the PM are as follows:

- Manage and execute overall scope, budget, and schedule.
- Interpret and plan overall work effort.
- Oversee preparation and planning of documents for the work.
- Respond to resource requirements by defining resource needs and securing the commitments for staff and equipment.
- Communicate with the Field Superintendent regarding day-to-day activities and alert the appropriate personnel to potential problems.
- Monitor subcontractor performance, schedules, budgets, and invoices.
- Develop, review, and meet work schedule and budget objectives.
- Ensure technical adequacy of field, laboratory, data management, and construction activities.
- Manage and coordinate group interfaces.
- Document the need for contract modifications, if needed.

The PM may delegate portions of the responsibilities to the Field Superintendent who is assigned to be on-site for the duration of the project.

### **3.5 CONTRACTOR FIELD SUPERINTENDENT**

The Field Superintendent will be provided by Tetra Tech and is responsible for assuring the resources of the project team are dedicated to executing the field phases of the project, overseeing removal action and site restoration activities. The Field Superintendent is responsible for on-site

client coordination relating the details of the project and activities of the project team. He/she will assist the PM in maintaining sufficient resource allocations to meet the project schedule and budget and provides daily reports to the PM on progress of the project. The Field Superintendent will be responsible for documenting activities and directly communicating with subcontractors performing the field work. He/she will not make decisions that deviate from established plans without first receiving approval from PIKA-Insight and, if necessary, the Army stakeholders. The Field Superintendent will have knowledge of specific construction practices relating to earthwork, regulations, observation and testing procedures, and documentation procedures.

The responsibilities of the Field Superintendent include:

- Regularly reviewing the project RAWP for CC RVAAP-70,
- Monitoring work progress and adherence to project requirements for task completion,
- Conducting or delegating inspections to verify spill equipment is maintained and no spills have occurred (daily), dust generation is minimized, and storm water pollution prevention and environmental protection controls are in place and operating properly (weekly and after storm events),
- Administering the Quality Assurance/Quality Control program, reporting inspection and certifications to the Project QC Manager,
- Providing logistical support for field operations,
- Interfacing with the subcontractors,
- Conducting onsite status meetings on a weekly basis,
- Assisting in preparing required submittals,
- Providing integration of subcontractor services to provide optimum support,
- Liaison with project staff and subcontractors as well as the onsite client representative; and
- Preparation of daily reports,
- Conduct stormwater management inspections and equipment and truck inspections, and
- Notifying the PM if conflicts arise with the proposed schedule.

### **3.6 CONTRACTOR HEALTH AND SAFETY MANAGER**

The Project Health and Safety Manager, Maureen Sassoon, CIH, will be responsible for:

- Preparing the Site Safety and Health Plan (SSHP) and Accident Prevention Plan (APP) (**APPENDIX A**) in compliance with USACE EM 385-1-1, Occupational Safety and Health Administration standards 29 CFR 1910.120 and 1926.65, and Engineering Regulations for Hazardous Toxic and Radiological Waste Sites, ER 385-1-92. The SSHP will also comply with the Facility-wide Safety and Health Plan for Environmental Investigations.
- Implementing the Corporate Health and Safety Program and SSHP/APP,
- Reviewing project-specific health and safety plans,
- Implementing corrective measures for health and safety deficiencies, and
- Ensuring required training and medical monitoring of personnel.

The Project Health and Safety Manager has the authority to require corrective measures related to health and safety issues and to stop work if required, to ensure a safe working environment.

### **3.7 SITE SAFETY AND HEALTH OFFICER**

The Site Safety and Health Officer (SSHO) will be responsible for the implementation of and adherence to the SSHP/APP. The SSHO will verify and approve that specified health and safety procedures outlined in the SSHP/APP adequately protect on-site personnel during field activities. The SSHO will make sure that health and safety procedures are modified to meet changing needs, if required, and monitor project compliance with project-specific health and safety plans. The SSHO will also make sure that personnel working onsite during remedial actions are trained in the handling of hazardous materials. The SSHO will also ensure that all on-site personnel (including visitors) strictly adhere to the SSHP/APP throughout field activities conducted for the duration of the project. The SSHO will report to the PM and will inform the Field Superintendent of all information and decisions reported.

### **3.8 SUBCONTRACTOR CONSTRUCTION SUPERVISOR**

The Subcontractor Construction Supervisor, if a subcontractor is used, will implement specific contracted components of this RAWP. The Subcontractor Construction Supervisor will be responsible for properly performing specified removal activities in accordance with this RAWP, adhering to quality assurance/quality control field procedures and the QC Plan, implementing the

SSHP, coordinating field personnel activities, and documenting field activities. Each Subcontractor Construction Supervisor will report directly to the Contractor Field Superintendent.

### **3.9 SUBCONTRACTORS**

PIKA-Insight will be subcontracting service providers for excavation, surveying, laboratory analytical services, and treatment and disposal. The following sections provide the names of the subcontractors and a brief description of their responsibilities.

#### **3.9.1 Excavation**

Environmental Field Services, Inc. (EFS) will be providing materials, equipment, and labor personnel to support the removal action. Materials will include erosion and sediment controls, containment supplies, decontamination tools, seed mixes, and backfill. Equipment will include a hydraulic excavator, a skid-steer (as necessary), and any other equipment necessary to facilitate the removal action.

#### **3.9.2 Surveyor**

Campbell & Associates will provide surveying services including the location of excavation boundaries at DU03, confirmation of excavation depth and calculation of total quantity removed, and verification of restoration to original grade.

#### **3.9.3 Laboratory Services**

ALS – Middletown in Middletown, PA, will provide fixed-base laboratory analytical services for the removal action including analysis of characterization and confirmation samples. ALS possesses Department of Defense Environmental Laboratory Accreditation Program certification as provided in [APPENDIX B](#).

#### **3.9.4 Waste Transportation and Disposal Services**

Waste derived from excavation activities will be loaded into lined haul trucks and will have the required labeling and licensing accordance with applicable federal, state, and local rules, laws, and regulations. Before transport off-site, haul trucks will be manifested and inspected for proper marking and labeling information. A returned signed copy of each manifest provided by the disposal facility will be retained by the generator and the Contractor for record keeping purposes.

Federal DOT regulations will be followed during transport activities. Waste characterization sampling will be conducted in accordance with Table 5-1. The DOT labeling requirements will be followed; and all appropriate placards, bill of lading, and letter of approval requirements to transport contaminated soil from CJAG will be in place. Soil at CC RVAAP-70 is not anticipated to be hazardous.

American Waste Management will be provisioning haul trucks and coordinating disposal with the landfill. The haul trucks will be from US Bulk and/or Berner Trucking. Soil will be transported to Waste Management American Landfill at 7916 Chapel St., Waynesburg, Ohio 44688 (see Table 3-1).

**Table 3-1. Non-Hazardous Waste Disposal Facility Details**

| <b>Permits To Install</b> | <b>Facility Name</b>                  | <b>Address</b>  | <b>City</b> | <b>State</b> | <b>Zip</b> |
|---------------------------|---------------------------------------|-----------------|-------------|--------------|------------|
| <b>02-5875, 02-12954</b>  | Waste Management<br>American Landfill | 7916 Chapel St. | Waynesburg  | OH           | 44688      |

Wastes and recyclables will be tracked on the waste inspection and disposal forms included in [APPENDIX C](#).



## **4.0 PROJECT APPROACH**

### **4.1 OBJECTIVES**

The overall objective of this project is to implement the removal action at CC RVAAP-70 East Classification Yard. The removal action objectives are to remove the soil from locations identified in the EE/CA's Chemical Evaluation of Soil to the extent that the AOC meets the Unrestricted (Residential) Land Use requirements as presented in the Action Memo (Parsons, 2021). The removal action will prevent residential receptors from contacting unsafe concentrations of benzo(a)pyrene at DU03.

The following project objectives will be applied:

- Preparation of the removal action supplements as described in the Performance Work Statement including this RAWP and SSHP/APP.

- Site preparation activities including brush removal, tree removal, and establishment of erosion and sediment controls.

- Sampling activities including waste characterization and confirmation sampling.

- Excavation, disposal, and backfilling at CC RVAAP-70 East Classification Yard.

- Site Restoration Activities including grading and revegetating.

- Preparation of Removal Action Completion Report (RACR).

The goal of the removal action at CC RVAAP-70 is to remove surface soil where the concentrations of contaminants are greater than the selected criteria, in this case, the USEPA's Residential Receptor Regional Screening Levels for polycyclic aromatic hydrocarbons. One contaminant (benzo(a)pyrene) was identified in the surface soil at DU03. The removal action cleanup goal for benzo(a)pyrene is 1.1 mg/kg (November 2020 USEPA Residential Regional Screening Levels of 1.1 mg/kg at risk =  $1 \times 10^{-5}$  and Hazard Quotient = 1.0).

### **4.2 OVERVIEW OF FIELD EFFORT**

Work will be conducted in accordance with the project plans. The soil removal base quantity is 308 in-situ cubic yards or approximately 370 loose cubic yards of benzo(a)pyrene-contaminated

soil excavated to 1 ft bgs. Wastes and recyclables will be monitored throughout the duration of the project.

In order to accomplish the removal action described above, the following additional activities will be performed:

Confirmation of underground utilities in the excavation area will be performed by a third party locate service.

Establishment of initial grades (prior to excavation), final excavation depths, and horizontal extents by an Ohio-licensed surveyor.

Identification and avoidance of wetlands and streams, if applicable.

Removal of trees in the excavation area in accordance with the Tree Removal Plan ([APPENDIX D](#)).

Characterization sampling of the excavation area and the borrow material prior to excavation.

As necessary, prepare and maintain the CC RVAAP-70 East Classification Yard site access roads to support on-road dump truck traffic during transport of excavated soil.

Installation of erosion and sediment controls.

Excavation and transportation of the non-hazardous benzo(a)pyrene-contaminated soil (estimated 308 cubic yards in-situ [370 cubic yards ex-situ]) to an approved landfill.

Waste tracking and disposal of contaminated soil and debris.

Confirmation sampling of the excavation.

Backfilling with clean borrow-site material.

Restoration of impacted areas via reseeding or repaving as appropriate.

Equipment decontamination and demobilization.

CC RVAAP-70 was not a designated munitions response site, but if munitions and explosives of concern are encountered, it will not be disturbed, and best effort will be made to note its location before immediately leaving the site. The “3R’s” of explosives safety” shall be followed. The “3R’s” include:

1. Recognize: when something may be a munition and the dangers involved,
2. Retreat: do not touch the potential munition and carefully leave the area and,
3. Report: immediately report the finding to local Range Control (614-336-6041).

## **5.0 DESCRIPTION OF ACTIVITIES**

### **5.1 PREMOBILIZATION**

Prior to mobilization, the following plans will be submitted for approval:

Tree Removal Plan ([APPENDIX D](#))

RAWP

APP/SSHP ([APPENDIX A](#))

Preconstruction photographs will be obtained to document site conditions prior to work, including the excavation location, support facility locations, vegetation, roadways, and general conditions for comparison to post-restoration conditions.

#### **5.1.1 Permits/Notifications**

PIKA-Insight and Tetra Tech will verify the proper communications protocol and points of contact with the USACE COR and CJAG personnel prior to mobilization for the remedial action activities. PIKA-Insight and Tetra Tech will communicate with the CJAG personnel and Range Control (614-336-6041) to coordinate construction activities and access to the CC RVAAP-70 East Classification Yard daily prior to arriving at the site. CJAG is typically accessible from 0700 to 1600 Eastern Time. Contractors are generally not allowed through the main gate until 0700 and are expected to have all personnel off the installation (i.e., back out the main gate) by 1600.

A 15-day notice will be provided to Ohio EPA, by the OHARNG, prior to mobilization. The OHARNG will review and approve any correspondence before they are sent to a regulatory agency. Notifications will be in place before mobilization for work. Any notifications required for Range Control will be coordinated through OHARNG.

#### **5.1.2 Tree Removal**

Removal of trees greater than 3 inches in diameter at breast height must be conducted between October 1 and March 31, outside of the Northern Long-Eared Bat rooting season. A separate vegetation removal plan was submitted to describe this activity and approved by the USACE,

ARNG, and OHARNG ([APPENDIX D](#)). PIKA-Insight identified trees that were removed and notified the OHARNG Environmental Office two weeks in advance of tree removal.

### **5.1.3 Utility Locate**

There are no utilities, such as potable water and electricity, at the project sites on CJAG. However, a commercial utility locating company will be used to confirm that there are no active utilities in the project areas that could be impacted by project work.

### **5.1.4 Pre-Construction Survey**

Planned excavation areas will be surveyed by a surveyor licensed in the State of Ohio in advance of excavation activities so that complete excavation boundaries are accurately identified prior to starting work. The surveyor will stake out the horizontal (northing and easting) coordinates for each excavation site to the nearest 0.05 foot and elevation to the nearest 0.01 foot to accurately depict existing conditions. The horizontal datum will be the North American Datum of 1983, Ohio State Plane Coordinate System 83 in U.S. survey feet. The vertical datum will be the North American Vertical Datum of 1988. Measurements will be reported and recorded in U.S. survey feet. The corners and any inflection point along the perimeter of the planned excavation areas will be located using either global positioning system or traditional land surveying methods to a horizontal accuracy of +/- 0.5 feet and marked.

## **5.2 MOBILIZATION AND SITE PREPARATION**

Once the work plans have been approved, PIKA-Insight, Tetra Tech, and EFS will mobilize resources necessary to perform this work efficiently and completely within the timeframe. [FIGURE 5-1](#) shows the site layout at CC RVAAP-70 East Classification Yard.

After providing the required notifications, EFS will:

- supply support facilities including sanitation and temporary utilities.
- install a laydown area for crew use.
- maintain hydration/drinking water during the work.
- demarcate work zones.

Project field forms and quality control forms for activities performed during the removal action are provided in [APPENDIX E](#).

### **5.2.1 Sanitary Facilities**

Portable sanitary facilities will be installed within the CC RVAAP-70 laydown area during excavation activities.

### **5.2.2 Heavy Equipment**

Trees were removed mechanically using a feller-buncher as discussed in the tree removal plan ([APPENDIX D](#)).

Earthmoving equipment to be used by EFS will consist of a Cat 320/326 Excavator, a Cat 239/279 tracked skid steer, and a Cat 938 loader. In addition, the following equipment may be utilized on this project for mobilization, excavation, backfill/restoration, and/or demobilization:

- Cat D3/D4 dozer
- Cat CP54 pad foot compactor
- Hydro seeder
- Pressure washer

### **5.2.3 Support Equipment**

EFS's support equipment will consist of the following:

- Pickup trucks (1-4)
- Tracked skid steer w/broom (1)
- Office trailer (1) \*\*Location of office trailer to be pre-approved by OHARNG
- Water buffalo (1)
- Traffic control signs (as needed)
- Storage unit/Conex box (1)
- Sanitary facilities (1-2)
- Handwash facilities (1-2)

A minimal volume of water will be needed for excavation. Any water that is needed will be obtained from the City of Newton Falls, OH municipal water supply and will be brought onsite by EFS.

#### **5.2.4 Site Preparation**

Site preparation will include clearing obstacles, surface structures, or vegetation that could interfere with excavation activities, identifying utilities, and setting up temporary decontamination facilities. All removed obstacles and surface structures will be properly disposed off-site along with the excavated material. Additional brush clearing may be necessary due to regrowth and any cleared brush will either be shredded and broadcasted on-site or disposed along with the excavated soil. In addition, sediment and erosion control measures will be installed as needed to control runoff from the work area as discussed in [SECTION 7.1](#). Dust generation will be minimized during excavation activities by keeping equipment movement areas and excavation areas misted with water as discussed in [SECTION 7.2](#) as needed.

There is an overhead wire at CC RVAAP-70 East Classification Yard attached to Building 47-40 that is not active or energized. The wire may be removed in order to operate equipment in the area. Additionally, the fence near the end of Building 47-40 may be demolished during the removal action, if needed. The fence will not be replaced if demolished.

#### **5.2.5 Traffic Plan**

Signs will be posted to provide traffic directions to key locations to CC RVAAP-70. These signs will be in visible locations and be updated and maintained as necessary. Transportation routes for incoming and outgoing vehicles and heavy equipment will be established to minimize the impact on CJAG and surrounding community. The proposed truck routes will reflect the shortest egress from CC RVAAP-70 to the primary roadway (State Route 5). Traffic control devices used on the project will conform to Department of Transportation (DOT) applicable standards. [FIGURE 5-2](#) outlines the haul route. The plan is to make sure that adequate consideration is given to the safety of workers during the RA.

### **5.3 EXCAVATION**

Excavation activities at CC RVAAP-70 East Classification Yard will only occur at DU-03. The base quantity of soil removed will be 308 in-situ cubic yards or approximately 370 loose cubic yards of benzo(a)pyrene-contaminated soil down to 1 ft bgs. Prior to ground disturbance, each excavation area will be surveyed and demarcated by stakes. Erosion control material will be installed to minimize sediment run-off as shown on [FIGURE 5-1](#). Dust generation will be minimized as discussed in Section 7.2. The health and safety of workers will be covered in the SSHP/APP.

Soil removal will be accomplished using conventional construction equipment, such as excavators, bulldozers, and front-end loaders. EFS will use an excavator to remove soil and will excavate vertically at the perimeter of DU03. Oversize debris will be crushed or otherwise processed to meet disposal facility requirements. The majority of excavated soil will be directly loaded onto trucks and taken to an approved landfill for disposal. Residual solid waste (if any) will be managed under the waste management plan and solid waste identified during excavation will be removed and properly disposed of.

At the end of each day, any open excavation areas will either be back-filled or covered with heavy plastic sheeting to prohibit rainwater from entering the excavation. If water does accumulate in an excavated area, it will be pumped into a holding tank pending analytical analyses. Dependent on the analytical results, the water may be discharged to the ground surface upon approval received from USACE, ARNG/OHARNG, and Ohio EPA); otherwise, the water will require proper off-site disposal. Ground surface discharges are subject to strict state and federal discharge conditions as well as specific guidelines set under the CC RVAAP Restoration Program and the CJAG Environmental Office Procedures presented in [APPENDIX C](#).

### **5.4 SAMPLING AND ANALYSIS**

The sections below summarize the sampling and analysis requirements. A summary of the quantities and analyses is provided in [TABLE 5-1](#). CC RVAAP-70 sampling activities will be conducted in accordance with the Facility-Wide Sampling and Analysis Plan. Sample nomenclature will follow the Facility-Wide Sampling and Analysis Plan. Characterization and



confirmation sampling results will be conveyed to the ARNG, USACE, and OHARNG through Tetra Tech – PIKA-Insight project personnel by e-mail. Composite sampling will be completed to characterize the soils within the excavation area. Discrete confirmation samples will be collected post-excavation near the locations shown on **FIGURE 2-4**.

**Table 5-1  
Sampling and Analysis Plan**

| Sample Type/Location                                    | Sampling Method | Depth of Sample | Number of Samples | Number of Replicates | Start Sample ID | End Sample ID | Field Duplicate | TCL VOCs, TCL SVOCs, TCL Pesticides, PCBs, Explosives, Nitroglycerin, Nitroguanidine, Nitrocellulose, TAL Metals, pH | TCLP VOCs, TCLP SVOCs, Pesticides, Herbicides, PCBs, TCLP Metals, pH, Flashpoint, Reactivity, Ignitability | BaP         |
|---|-----------------|-----------------|-------------------|----------------------|-----------------|---------------|-----------------|--|--|-------------|
| United States Environmental Protection Agency Method(s) |                 |                 |                   |                      |                 |               |                 | 8260B, 8270C, 8081A, 8082, 6010, 6020, 7471, 8330B   | 1311, 8260B, 8270C, 8081A, 8082, 6010, 6020, 7471  | 8270C, 8310 |

**Characterization**

|                 |           |           |   |   |                   |  |  |   |   |  |
|-----------------|-----------|-----------|---|---|-------------------|--|--|---|---|--|
| Off-Site Borrow | Composite | N/A       | 1 | 0 | OFFbo-001-0001-SO |  |  | X |   |  |
| Excavation Area | Composite | 0 to 1 ft | 1 | 0 | 070IDW-xxxxxx-WS  |  |  |   | X |  |

**Confirmation**

|                 |          |      |    |                             |                   |                   |   |  |  |   |
|-----------------|----------|------|----|-----------------------------|-------------------|-------------------|---|--|--|---|
| Excavation Area | Discrete | 1 ft | 20 | 1 per 10 (Field Duplicates) | 070cs-111-0001-SO | 070cs-130-0001-SO | 070cs-xxx-0001-SO and 070cs-xxx-0001-SO |  |  | X |
|                 |          |      |    | 1 per 20 (MS/MSD)           | 070cs-xxx-0001-SO |                   |   |  |  | X |

|        |                                |      |  |
|--------|--------------------------------|------|--|
| BaP    | Benzo(a)pyrene                 | TCL  | Target Compound List                       |
| IDW    | Investigation-Derived Waste    | TCLP | Toxicity Characteristic Leaching Procedure |
| PCB    | Polychlorinated biphenyl       | VOCs | Volatile organic compound                  |
| SVOC   | Semi-volatile organic compound | xxx  | Location number of the primary sample      |
| xxxxxx | Sample Year, Month, Date       |      |  |

#### **5.4.1 Waste Characterization Sampling**

A composite waste characterization soil sample will be collected from the excavation area to facilitate off-site disposal prior to initiation of the removal action so that the soil for disposal is properly managed and disposed at a permitted landfill. Ten subsamples will be used for the composite sample. The subsamples will be collected at a depth of 0 to 1 foot below ground surface on each side of the building. Each of the subsamples will be combined into a one-gallon plastic bag and thoroughly homogenized. The composite sample material will then be transferred to the appropriate sample container and shipped to the analytical laboratory for analyses. All data results will be presented electronically to the OHARNG for approval prior to off-site disposal of the excavated material. The waste characterization subsamples will be collected using either a clean stainless steel hand trowel or a plastic disposable hand trowel. The characterization sample will be collected at the frequency shown in [TABLE 5-1](#).

#### **5.4.2 Excavation Confirmation Sampling**

The removal action involves the excavation of soil containing benzo(a)pyrene at concentrations that exceed the site cleanup goal of 1.1 mg/kg. Confirmation sampling will demonstrate that the remaining benzo(a)pyrene in soil at DU03 does not present a risk to future users of the site and would achieve Unrestricted (Residential) Land Use. Confirmation soil samples will be collected from the excavation site to confirm that soil remaining on the site has concentrations of benzo(a)pyrene below 1.1 mg/kg. Confirmation sample results will be presented to and approved by the USACE, ARNG, OHARNG, and Ohio EPA prior to initiating backfill at the site.

A total of 20 discrete confirmation soil samples will be collected from the floors and sidewalls of the excavation area to confirm that soil remaining on site has concentrations of COCs below CUGs. Six discrete soil samples will be collected from the excavation floors and 14 discrete soil samples will be collected from the excavation side walls at a rate of one sample per approximately 30 linear feet (see [FIGURE 2-4](#)). Each of the confirmation soil samples will be collected using either a clean stainless steel hand trowel or a plastic disposable hand trowel. A summary of sample quantities and analyses is provided in [TABLE 5-1](#).

### 5.4.3 Borrow Characterization Sampling

One composite soil sample will be collected from the off-site borrow area (Freedom Materials, Ravenna, Ohio) that will be used as backfill to restore the excavation. One sample will be collected for every 4,000 cubic yards of earth fill. Ten subsamples will be used for the composite sample. The subsamples will be collected in-situ within the area of the borrow source that will be used. The borrow area soil analytical results will be screened against the USEPA’s Residential Regional Screening Levels for soil, or from site-specific background concentrations for metals. Metals results will be compared to facility-specific background values in **TABLE 5-2** from the *Final Phase II Remedial Investigation Report for Winklepeck Burning Grounds* (SAIC, 2001). The earth fill data will be submitted electronically upon receipt to the ARNG for approval. Analytical results will be included in the RACR. The borrow material will be free of invasive vegetation species and must be compactible. The material will receive ARMY approval before using as backfill. **TABLE 5-1** provides additional details about the sampling types, frequency, and analyses associated with the borrow material.

**Table 5-2. Facility Wide Background Criteria for Surface Soils (metals)**

| Parameter | Background Criteria (mg/kg) | Parameter | Background Criteria (mg/kg) | Parameter | Background Criteria (mg/kg) |
|-----------|-----------------------------|-----------|-----------------------------|-----------|-----------------------------|
| Aluminum  | 17.70                       | Cobalt    | 10.40                       | Nickel    | 21.10                       |
| Antimony  | 0.96                        | Copper    | 17.70                       | Potassium | 927                         |
| Arsenic   | 15.40                       | Cyanide   | 0                           | Selenium  | 104                         |
| Barium    | 88.40                       | Iron      | 23,100                      | Silver    | 0                           |
| Beryllium | 0.88                        | Lead      | 26.10                       | Sodium    | 123                         |
| Cadmium   | 0                           | Magnesium | 3.03                        | Thallium  | 0                           |
| Calcium   | 15,800                      | Manganese | 1,450                       | Vanadium  | 31.10                       |
| Chromium  | 17.40                       | Mercury   | 0.036                       | Zinc      | 61.80                       |

\*Background concentrations for 0-1 feet bgs from final facility-wide background concentrations, published in the *Phase II Remedial Investigation Report for Winklepeck Burning Grounds* (USACE 2001).  
mg/kg = milligram per kilogram

### 5.4.4 Sample Handling

Following the sample preparation activities, the sample containers will be labeled, sealed, and managed under a chain of custody. Samples will be shipped same day via laboratory courier service to ALS Middletown in Middletown, Pennsylvania.

#### **5.4.5 Laboratory Analysis**

Laboratory analyses will be performed by the identified fixed-base laboratory in accordance with **TABLE 5-1**. Borrow characterization and confirmation sampling results will be provided to the ARNG and OHARNG prior to commencing backfilling operations.

#### **5.4.6 Equipment Decontamination**

Dry decontamination methods (i.e., brushing) will be the primary means of removing soil from excavation equipment. Cleaning agents (Liquinox or similar) will be utilized for decontamination procedures, as necessary. As required, equipment will be wiped/brushed clean, water rinsed, or washed with detergent and rinsed with tap water. As necessary, the decontamination of equipment and tools will be completed within the decontamination pad. Equipment will be cleaned and decontaminated when it will no longer be needed on-site or if it will be decommissioned for an extended period of time. Cleaned equipment will be moved away from the work area to be kept clean until future use.

If decontamination pads are required:

The pad will be placed in a location that is known or believed to be free of surface contamination.

If possible, the pad will be constructed with one end elevated to facilitate the removal of wastewater.

The pads will utilize a water impermeable material designed to not leak.

Splashing will be minimized.

### **5.5 WASTE MANAGEMENT**

Waste materials expected to be generated include vegetation, surface structures, soil containing benzo(a)pyrene-impacted soil, municipal waste, and minimal contaminated water. The majority of solid waste to be generated as part of this removal action will consist of contaminated soil. It is anticipated that the contaminated soil will be characterized as non-hazardous solid waste. Waste materials will be managed as described in the CJAG Waste Management Guidelines attached in

**APPENDIX C.** A third-party solid waste bin will be located at the excavation areas for municipal waste which will be properly disposed off-site.

Liquid waste is not expected in large quantities as the majority of water expected for handling will be decontamination water. The decontamination water cannot be discharged on-site; therefore, it will be collected and pumped directly into labeled, DOT-approved 55-gallon drums or polyethylene tanks and will be stored on secondary containment. Additionally, any rainwater that accumulates in an excavation will need to be pumped from the excavation and temporarily stored in polyethylene tanks that will also be stored on secondary containment. The water will be managed according to OHARNG Environmental Procedures. Liquid waste will be characterized per the requirements of the disposal facility, or to discharge the water onsite with approval from USACE and Ohio EPA. Liquid waste will not be discharged to the land surface, surface water, storm drain/ditch, or a sanitary sewer unless properly characterized and done in accordance with applicable laws and in accordance with the OHARNG Environmental Procedures and CJAG Waste Management Guidelines (both attached in **APPENDIX C**). Prior to demobilization from the site, all remaining drums will be transported to Building 1036 while awaiting laboratory analyses for determination on proper disposal.

Municipal waste (trash) will be removed. Subcontractors will not use CJAG municipal waste dumpsters.

The temporary storage areas for the liquid wastes, contaminated soil and their associated stockpiles, and municipal trash will be inspected at required intervals (weekly) in accordance with CJAG Waste Management Guidelines in **APPENDIX C**.

Soil containing benzo(a)pyrene and identified for off-site disposal will be characterized as described in **TABLE 5-1**. If the land disposal facility requires additional testing, then required testing will be performed. Stockpiling of excavated soil will be limited to the greatest extent possible; however, if stockpiling of excavated soil is necessary while waiting on analytical results, the soil will be placed on thick poly plastic and covered to prevent wind damage to the stockpile and contact of precipitation with the contaminated soil. No long-term stockpiling of excavated soil is planned.

Off-site disposal facilities will be selected based on waste characterization data collected from the contaminated soil and liquid waste. It is anticipated that the contaminated soil does not exceed Toxicity Characteristic Leaching Procedure limits and, therefore, will be profiled as non-hazardous waste for disposal at Waste Management’s American Landfill at 7916 Chapel St., Waynesburg, Ohio 44688.

The management, transportation, and disposal of the waste streams will be coordinated with the OHARNG Restoration Representative. The OHARNG Restoration Representative will sign waste profiles and waste manifests for the disposal of project wastes at an approved disposal facility that are prepared by the Contractor Project Manager or Field Superintendent. Transportation paperwork (manifests or shipping papers) and on-road haul truck placards must be in accordance with federal, state, and local regulatory requirements, and disposal facility requirements. A draft of the transportation paperwork containing “base” information will be submitted to the OHARNG Restoration Representative for review and approval a minimum of one week prior to shipment of any material. The approved transportation paperwork will then be completed as appropriate by the Contractor Project Manager or Field Superintendent together with the OHARNG Restoration Representative in the field during removal activities. The OHARNG Restoration Representative will sign waste profiles and waste manifests for the disposal of project wastes. Waste will be transported by licensed waste haulers to OHARNG-approved licensed off-site disposal facility. Manifests, shipping documents, and disposal facility approval letters will be incorporated into the RACR.

## **5.6 BACKFILL AND SITE RESTORATION**

After the excavation is complete, the volume and depth of removed soil will be documented by performing a survey of the excavated surface. The post-excavation survey will be consistent with the requirements of the pre-excavation survey. Upon demonstration that the excavation area confirmation soil sample results meet the cleanup goal for benzo(a)pyrene (1.1 mg/kg), approved borrow material will be brought onsite to backfill the excavation. Site restoration will also be performed to return the disturbed areas to prior conditions. There are no anticipated changes to site elevation or drainage features associated with this removal action. Once the excavation is backfilled, it will be graded and seeded as described below. Seeding of the permanent vegetation

will occur at the disturbed areas within 14 days of cessation of excavation activities. Permanent vegetative cover will be placed with consideration of establishment requirements, adaptability to site conditions, aesthetics and natural resource values, maintenance requirements.

Revegetation of disturbed areas, including equipment staging areas, will be conducted in accordance with the requirements of the CJAG OHARNG Environmental Procedures Restoration Program. The following seed mixture is approved for establishment of permanent cover for use in open areas that receive good sunlight: 23.5% Nodding Wild Rye (*Elymus canadensis*), 25% Virginia wild rye (*Elymus virginicus*), 22% Little Bluestem (*Schizachyrium scoparium*), 18.75% Partridge Pea (*Chamaecrista fasciculata*), 7.75% Thin-leaved Coneflower (*Rudbeckia triloba*), 1.5% Brown fox sedge (*Carex vulpinoidea*), 1.5% Black-eyed Susan (*Rudbeckia hirta*), broadcast @ 18 lbs/acre, drilled at 12 lbs/acre, mulch with a minimum of 3 bales of straw per 1000 square feet. Add 20 lbs/acre of Annual Rye Grass (*Lolium multiflorum*) to the broadcast mix and 15 lbs/acre to the drilled mix. Substitution with similar species is permitted but must be approved by the OHARNG Environmental Office.

The seed mix selected will be provided to the OHARNG for approval. Only native species, as identified above, will be used. Annual rye may be placed to provide a quick temporary cover. The annual rye may be mixed with other more permanent species to provide long-term cover once the annual rye dies off. Non-native species will not be introduced. PIKA-Insight will coordinate the seed mixes with the OHARNG Restoration Representative prior to mobilizing.

Site restoration will also include removal of erosion and sediment controls and excess sediment that has been collected. These controls will be removed when vegetation establishment meets or exceeds 70% ground cover.

Damaged roadways will be repaired in accordance with contractual requirements and prior conditions. Roads, parking areas, or lay-down areas will be repaired after the removal action. Unpaved roads that are used to access the project areas are little more than partial gravel driveways. These driveways will be left with no ruts nor areas subject to ponding water and that they be passable with a light duty pickup truck. Where necessary, ruts and depressions along equipment movement areas and construction support areas will be backfilled with clean fill, regraded, seeded,



and mulched. Where roads have been modified, restoration of these areas and/or areas of travel damage will be completed as removal activities are completed. The final grade of areas disturbed during removal activities will be approved by the Field Superintendent and the USACE Contracting Officer's Representative, with input from ARNG and OHARNG representatives.

## **6.0 CONSTRUCTION SEQUENCE AND SCHEDULE**

The following sections provide a tentative sequence of activities and schedule.

### **6.1 CONSTRUCTION SEQUENCE**

The proposed sequence of construction activities is presented below. Erosion and sediment controls will be constructed, stabilized, and determined to be functional before general site disturbance. The construction sequence for this project will generally commence as follows:

Tree removal occurred in March of 2023 in accordance with the Tree Removal Plan ([APPENDIX D](#)); however, additional brush clearing may be necessary due to regrowth. Any cleared brush will either be shredded and broadcasted on-site or disposed along with the excavated soil.

Collect samples for characterization of contaminated soil for disposal prior to disposal.

As necessary, prepare and maintain the CC RVAAP-70 East Classification Yard site access roads to support on-road dump truck traffic during transport of excavated soil.

Provide erosion and sediment control measures as necessary, such as filter logs or silt fencing, to prevent soil erosion on roadways edges, roadside ditches, and around excavation areas, and to prevent sediment from travelling on-site. Erosion controls to be inspected weekly and within 24 hours of a 0.5-inch or more rainfall.

Excavate soil at DU03 and directly load it into on-road dump trucks for disposal.

Conduct confirmation sampling and analysis.

Remove any water that accumulates in open excavation(s) by pumping and storage in 55-gallon drums or a temporary water-tight storage tank.

Maintain dewatering processes and erosion and sediment control practices throughout work period.

Backfill the excavation upon receipt of acceptable confirmation sampling results.

Restore disturbed areas by seeding or repaving upon receipt of clean confirmation sample results.

Remove remaining erosion and sediment controls after final stabilization has been achieved.

Prepare and deliver RACR.

## 6.2 SCHEDULE

The project schedule is based on an excavation volume of 308 in-situ cubic yards or approximately 370 loose cubic yards. The current anticipated project schedule takes into account potential hazards, impedances, and current contaminants of concern. Changes in any of these conditions have the potential to affect the project schedule. Adherence to review periods is a key element in maintaining the proposed schedule. The schedule will be impacted (plus or minus) by changes to the turnaround times for document reviews.

A preliminary mobilization occurred in March 2023 to cut trees larger than 3 inches in diameter at breast height in accordance with the Tree Removal Plan ([APPENDIX D](#)). The primary removal mobilization will occur after required approvals are obtained in accordance with this RAWP and is currently anticipated to occur in March/April 2024.

Removal milestones are presented in [TABLE 6-1](#).

Backfilling and grading will occur within 7 days of the last excavation and/or confirmation sampling event. The time from the beginning of primary removal mobilization to site regrading and restoration (with the exception of vegetation establishment) will not exceed 180 days.

Adherence to review periods is a key element in maintaining the proposed schedule. The schedule will be impacted (plus or minus) by changes to the turnaround times for document reviews. Standard Army and Ohio EPA reviews for documents are 30 and 45 days, respectfully. The Army and Ohio EPA will request additional review time if it is required.

Final Removal Action Work Plan  
Removal Action at CC RVAAP-70 – East Classification Yard  
Camp James A. Garfield, Portage and Trumbull Counties, Ohio  
August 2024

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**Table 6-1 Removal Action Schedule**

| <b>Task</b>   | <b>Start Date</b> | <b>Duration</b> | <b>End Date</b>   |
|---|-------------------|-----------------|-------------------|
| Preliminary Mobilization for Tree Removal and Land Survey | March 20, 2024    | 3 days          | March 22, 2023    |
| Mobilization and Site Preparation                         | October 22, 2024  | 2 days          | October 23, 2024  |
| Excavation and Disposal                                   | October 23, 2024  | 5 days          | October 27, 2024  |
| Confirmation Sampling                                     | October 28, 2024  | 1 day           | October 28, 2024  |
| Site Restoration  | November 11, 2024 | 2 days          | November 12, 2024 |
| Demobilization  | November 13, 2024 | 2 days          | November 14, 2024 |

## **7.0 ENVIRONMENTAL PROTECTION**

The environmental resources within the project boundaries and those affected outside the limits of work will be protected during this removal action. PIKA-Insight will confine its activities to areas defined by this RAWP. Environmental protection will be as stated in the following subsections.

### **7.1 EROSION AND SEDIMENT CONTROLS**

There are three basic methods that will be used to control soil movement at the site: run-off control, soil stabilization, and sediment control. In general, erosion and sediment control will be accomplished by controlling run-off and using sediment controls. Controlling erosion will be the first line of defense and will be implemented using run-off controls. Sediment controls will be necessary for larger disturbed areas at CC RVAAP-70 where it is harder or impractical to control erosion or where sediment particles are relatively large. Erosion controls will be adjusted in the field and will need to be used and moved wherever site topography and water flow go.

Soil intended for disposal may be stockpiled within the excavation areas prior to direct loading into on-road trucks. Any stockpiled soil will be covered to prevent wind damage to the stockpile and contact of precipitation with the contaminated soil. Clean borrow soil may be temporarily stockpiled during backfilling activities. Additionally, paved roads will be free of track-out from the project site through proper implementation of erosion and sediment controls. During excavation activities EFS will utilize the following erosion controls:

A construction entrance where necessary.

Filter sock, silt fence, or straw bale barriers at locations for the exterior excavation and staging areas. Erosion controls will also be installed around the construction entrance and laydown area.

Erosion and sediment controls will be established as shown in **FIGURE 5-1**.

The maintenance of erosion and sediment controls and the construction site will include weekly inspections until vegetation is re-established (70% coverage is reached) after the site is restored. Sediment and erosion controls will also be inspected within 24 hours of a rainfall event of 0.5

inches or more. A corrective action log will be kept and include a description of maintenance and repair activities conducted on any erosion and sediment controls. Although no stormwater permit is required (as disturbance for the removal action is under an acre), erosion and sediment control activities and inspections will be in compliance with the Ohio EPA General Stormwater Permit for Construction Activities.

As a best management practice, excavation and other construction operations will be conducted in a manner to prevent muddy water, eroded materials, and other undesirable constituents of project construction waters from being discharged through storm water run-off.

### **7.1.1 Run-off/Run-on Control**

Run-off controls will be used to prevent storm water or other overland flow sources at disturbed areas from entering or leaving a work area and to control the occurrence of gully, channel, and stream erosion. With the small size of the work areas and limited time work will be performed, it is not anticipated that run-off from the work areas will be an issue. To mitigate stormwater run-on into the disturbed and excavation areas, potential overland drainage routes will be identified. Run-on controls will primarily consist of diversion structures and interception to enclose disturbed drainage areas. The implementation of these methods will depend on the location of the work and the potential for the release of contaminants. Appropriate run-on control measures will be selected based on the construction sequence.

Diversion structures consisting of temporary earthen dikes, sandbags, filter socks, and/or drainage swales will be formed upgradient of construction areas where the volume of overland flow is such that it is necessary to divert flow around excavation areas. As a general best management practice, earthwork and other construction operations will be conducted in a manner to prevent muddy water, eroded materials, and other undesirable constituents of project construction waters from being discharged through storm water run-off.

Run-off that occurs in work areas will be collected by diversion structures that are directed to enclosed drainage systems and pumped into 55-gallon drums or temporary storage tanks. The collected run-off will be analyzed for disposal options. If analytical results are acceptable, the Contractor will discharge the collected run-off to a location specified by the OHARNG following

approval by Ohio EPA, USACE, and OHARNG in accordance with local, state, and federal regulations and CC RVAAP-specific discharge parameters.

### **7.1.2 Sediment Controls**

Sediment control, consisting primarily of sediment barriers, will be implemented to protect areas down-gradient of construction areas and off-site locations. The purpose of sediment control is to retain sediments, which are generated as a result of soil erosion, on site. Typically, sediment controls will include filter sock, silt fence, and straw bale barriers that will be necessary for disturbed areas.

Soil-disturbing activities will be minimized and will proceed in a manner to prevent erosion and control sedimentation. Earthwork, grading, movement of equipment, and other operations likely to cause siltation and tracking of sediments will be planned and performed in a sequence to avoid or reduce pollution in adjacent waters. Clearing and grubbing activities will be performed in a way that minimizes erosion and controls sedimentation.

To protect nearby waterways, filter sock, silt fence, or straw bale barriers will be installed along the down-gradient perimeter at work areas as shown in **FIGURE 5-1**. Where appropriate, straw bale barriers or rock check dams will be used as sediment traps in small storm water conveyances. If used, silt fences will be constructed using filter fabric that will be staked to provide a barrier to silts, fines, and debris, yet provides passage of run-off. Selection and type of grade of fabric will be made to allow adequate passage of water. Filter fabric will be installed at least 6 inches deep at the bottom of the fence to make sure water cannot flow under the barrier. Stakes used to construct silt fences will be of wood with squared, butt ends and tapered driving points. Filter fabric will be stapled or tied with jute twine to stakes. Straw bale barriers, if used, will be keyed-in at least six inches below grade to make sure water cannot flow under the barrier.

Following completion of the removal action, the site will be restored using a mixture approved by the OHARNG. Erosion and sediment controls will be maintained until 70 percent of disturbed

areas have been revegetated, and removal will be coordinated through the OHARNG Environmental Office.

### **7.1.3 Soil Stabilization**

The purpose of soil stabilization is to protect surface areas and strengthen subsurface areas to minimize or prevent soil erosion. Soil stabilization methods will primarily consist of vegetative soil cover, non-vegetative cover, and structural cover. The preferred method of soil stabilization is the placement of vegetative cover; however, non-vegetative and/or structural erosion control practices may be necessary when disturbed areas cannot be promptly stabilized with vegetation. Vegetative soil cover will include the placement of temporary or permanent seed or the protection of existing vegetation from construction activities. Structural soil stabilization options will include land grading to provide erosion and run-off control.

## **7.2 DUST CONTROLS**

Dust may be generated during activities such as excavation and transportation. Onsite personnel, including the Site Supervisor, will monitor working conditions and fugitive dust throughout daily operations. Real time conditions will be communicated to the Site Supervisor and work stoppage related to mitigating fugitive dust will be at the Site Supervisor's discretion.

Dust control will be maintained by keeping traffic on improved roads wherever possible, maintaining the posted speed limit, and applying water for dust suppression as required. Water applied for dust suppression will be applied in such a way as to not cause run-off from the project site. During instances of high winds resulting in excessive dust, additional dust control measures or work stoppage may be implemented. At a minimum, visual monitoring of fugitive dust emissions on a daily basis will be performed during representatively normal operating conditions and implement mitigations measures as needed.

## **7.3 STORMWATER POLLUTION PREVENTION**

Although no stormwater permit is required (as disturbance for the removal action is under an acre), erosion and sediment control activities and inspections must be in compliance with the Ohio EPA General Stormwater Permit for Construction Activities. The field superintendent that will conduct



the stormwater inspections will be qualified and have experience in stormwater management and inspections.

Removal activities will be performed under and are relieved from permitting requirements as stipulated by CERCLA Law, Chapter 103, Subchapter I, Section 9621(e). Under CERCLA, air or water permits are not required; however, substantive requirements of applicable regulations must be satisfied. The federal based exemptions under Ohio Administrative Code Section 3745-31-03 (B)(2) exempt “Cleanup activities associated with the removal action conducted entirely on site, where such removal action is selected and carried out in compliance with the CERCLA Section 121(e) and where such action meets all applicable air pollution emission limits and policies.”

At a minimum, the project will comply with the substantive requirements of the Ohio EPA Authorization for Stormwater Discharges Associated with Construction Activity under the National Pollution Discharge Elimination System per the Ohio Administrative Code Rule 3745-38-02 and will implement Proposed Stormwater Pollution Prevention best management practices in accordance with the rules.

If an excavation fills with rainwater prior to being deemed clean by the excavation confirmation samples, a water sample will be sent to the fixed-base laboratory for characterization and excess water will be managed as discussed in [SECTION 5.5](#). If the excavation has been confirmed clean by the excavation confirmation samples, water may be disposed of onsite with prior approval from the Ohio EPA and OHARNG at designated areas and pumped into vegetated areas at low velocities that does not create erosion. Clean water release from an excavation area will be conducted in accordance with Ohio Administrative Code 3745-42-13 (C) and (J). This includes, but is not limited to, certain requirements such as the ground cannot be frozen, the discharge must be into a vegetated area and not into wetlands or streams, there cannot be snow on the ground, and the discharge water must be properly filtered.

Storm water that is analyzed and determined to be contaminated will be contained, characterized, and disposed in accordance with local, state, and federal rules, laws, and regulations. In general, stormwater will be managed in accordance with the best management practices for construction activities and the OHARNG Environmental Procedures. The storm water will be collected and

pumped directly into labeled, DOT-approved 55-gallon drums or polyethylene tanks and will be stored on secondary containment.

#### **7.4 EQUIPMENT MAINTENANCE**

Daily equipment checklists will be completed for heavy equipment and vehicles. Preventive maintenance will be performed on equipment to make sure proper operation, detect potential leaks before they occur, and make sure manufacturer’s maintenance schedules are followed. Good housekeeping practices will be maintained during construction activities.

Fueling activities will be conducted at the equipment laydown area away from stormwater conveyances. Drip trays will be utilized during equipment refueling operations. Operators will not leave equipment refueling operations unattended and spill kits will be staged near refueling areas in the equipment laydown area.

#### **7.5 TREE REMOVAL**

As discussed in [SECTION 5.1.2](#), due to the Northern Long-Eared Bat, tree and vegetation clearing, brush cutting, tree felling/cutting (height equal to or greater than 24” above ground) and tree trimming of any branches and any other part of the tree that is at least 3 inches in diameter, will only occur between 1 October and 31 March, outside of the Northern Long-Eared Bat roosting season. [APPENDIX D](#) provides the work plan for the tree removal activities conducted in March 2023.

## **8.0 DELIVERABLES**

When the removal action task for the site has been completed and the final inspection shows that the punch list items have been resolved, a final RACR will be prepared and submitted. The final report contents will document the following items:

Historical background and scope of work,  
Description of the preparatory activities and plans,  
Detail of the removal action activities,  
Sampling and testing performed and reference to the results files,  
Waste management and disposal activities including manifests,  
Site restoration activities, and

Attachments including:

- Weekly Progress Reports,
- Nonconformance Reports and Corrective Action Requests,
- Field Test Results,
- Laboratory Analytical Results including Chain of Custody Forms,
- Design Assumptions and Calculations,
- Stormwater Inspection Forms,
- Corrective Action Log,
- Photographic Log, and
- Design Changes.

A schedule outlining the order and timeframe of deliverables is included in the Project Management Plan (PIKA-Insight, 2023). The RACR will be prepared as a preliminary draft, draft, and final with 45-day comment period by Ohio EPA for the draft and final reports. The preliminary draft will be submitted to the Army only, while the draft deliverables will be submitted to the Army and Ohio EPA for review and comments. The final deliverables will be submitted to the ARNG, OHARNG, USACE, the Ohio EPA, and Chenega Services for their records.

PIKA-Insight will also prepare responses to Ohio EPA comments on the draft RACR and facilitate a conference call to discuss the comment responses. If the Ohio EPA has comments on the final RACR, PIKA-Insight will also prepare responses to those comments and a revised final RACR.

## 9.0 REFERENCES

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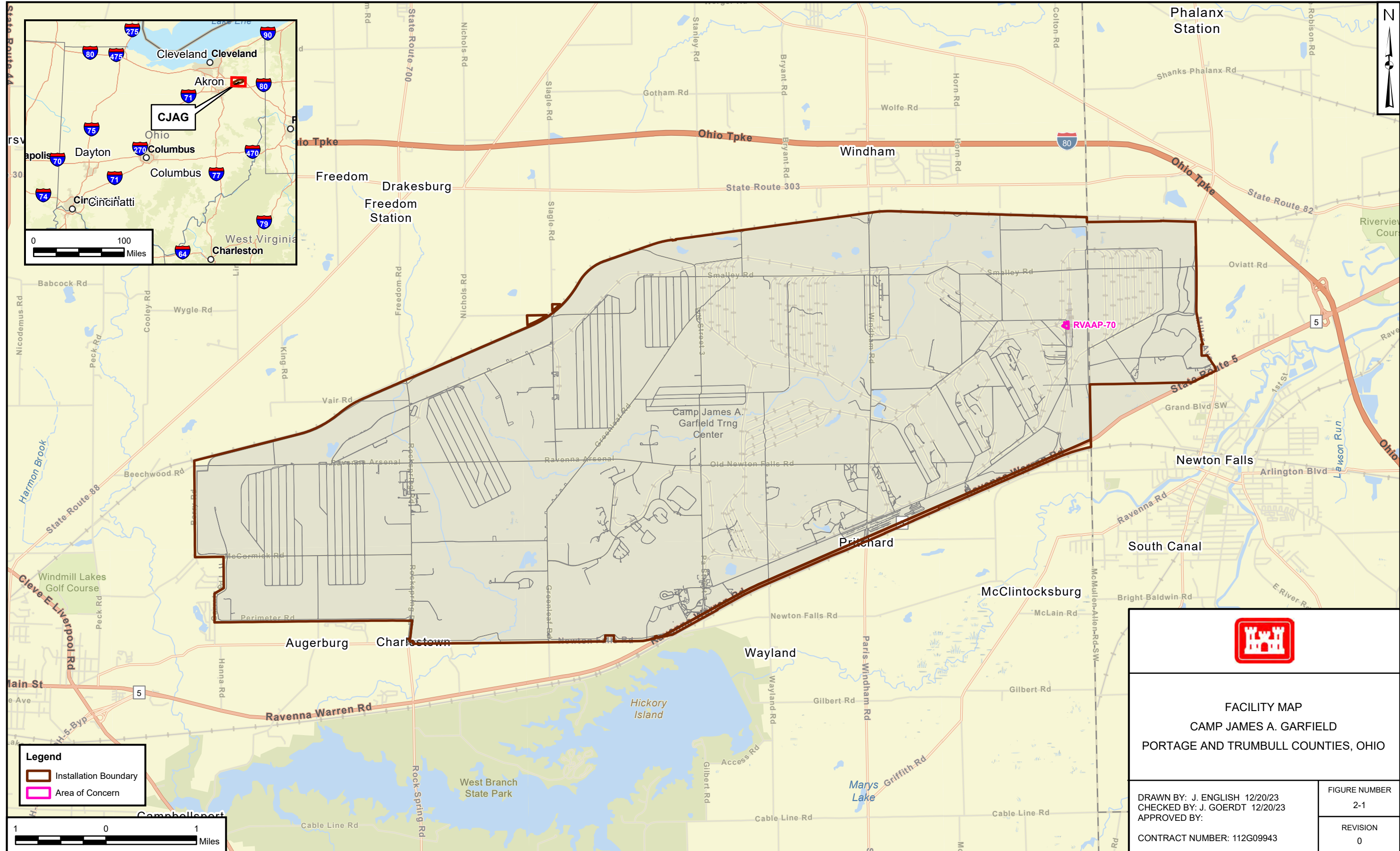
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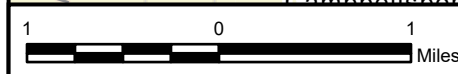
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## **FIGURES**



**Legend**

- Installation Boundary
- Area of Concern



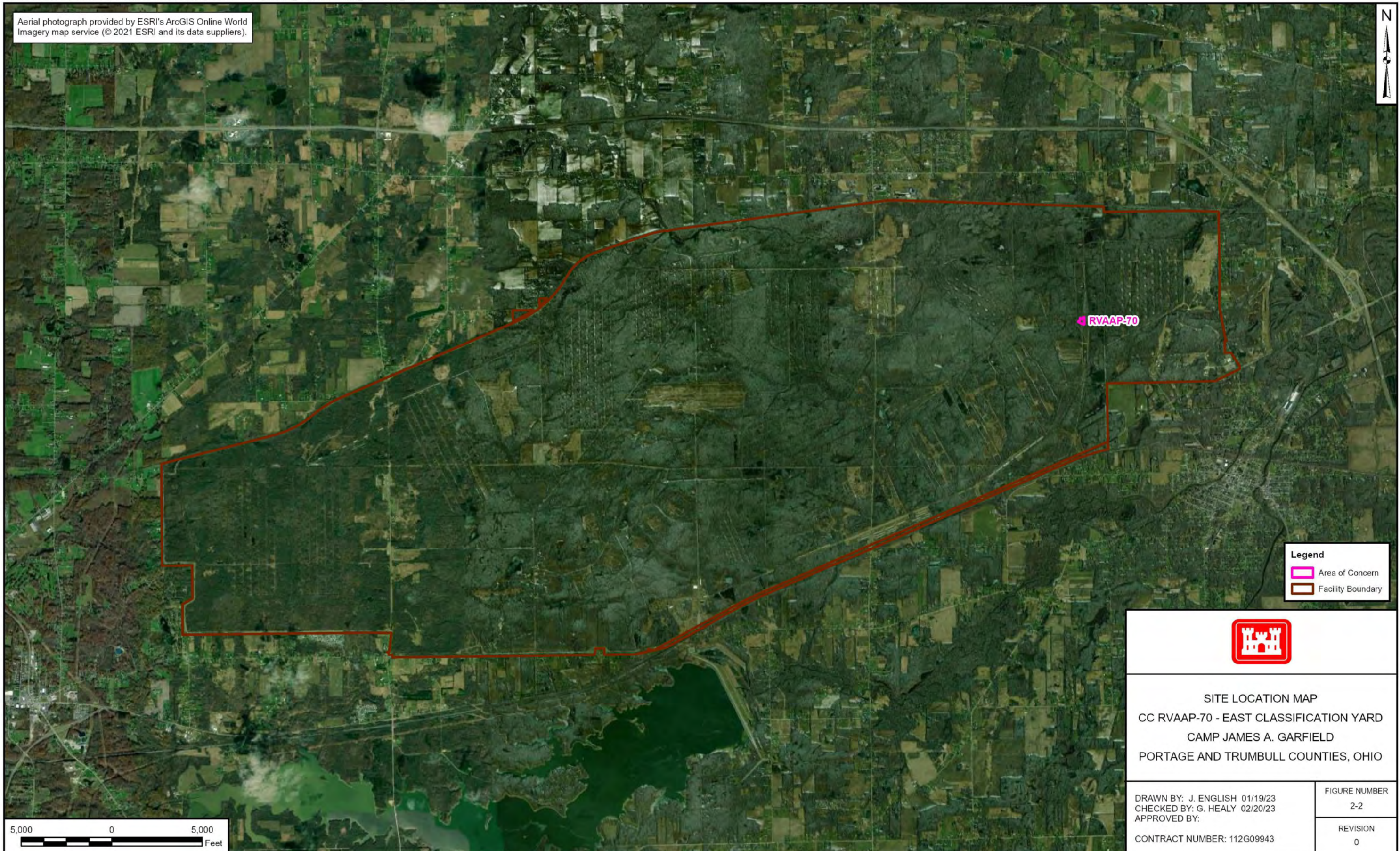


**FACILITY MAP**  
**CAMP JAMES A. GARFIELD**  
**PORTAGE AND TRUMBULL COUNTIES, OHIO**



|   |                      |
|---|----------------------|
| DRAWN BY: J. ENGLISH 12/20/23<br>CHECKED BY: J. GOERDT 12/20/23<br>APPROVED BY: | FIGURE NUMBER<br>2-1 |
| CONTRACT NUMBER: 112G09943  | REVISION<br>0        |



Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2021 ESRI and its data suppliers).



**Legend**

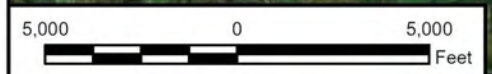
-  Area of Concern
-  Facility Boundary



SITE LOCATION MAP  
CC RVAAP-70 - EAST CLASSIFICATION YARD  
CAMP JAMES A. GARFIELD  
PORTAGE AND TRUMBULL COUNTIES, OHIO

DRAWN BY: J. ENGLISH 01/19/23  
CHECKED BY: G. HEALY 02/20/23  
APPROVED BY:  
CONTRACT NUMBER: 112G09943

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| 2-2           |
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| 0             |



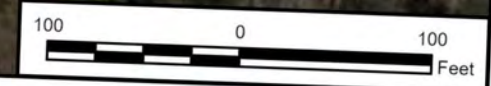
Aerial photograph provided by ESRI's ArcGIS Online World Imagery (Clarity) map service.



South Service Road

Building 47-40

CC RVAAP-70










SITE MAP  
CC RVAAP-70 - EAST CLASSIFICATION YARD  
CAMP JAMES A. GARFIELD  
PORTAGE AND TRUMBULL COUNTIES, OHIO

DRAWN BY: J. ENGLISH 01/19/23  
CHECKED BY: G. HEALY 02/20/23  
APPROVED BY:

CONTRACT NUMBER: 112G09943

FIGURE NUMBER  
2-3

REVISION  
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- Legend**
-  Area of Concern
  -  Building
  -  Demolished Building
  -  Former UST
  -  Railroad
  -  Site Specific Wetlands
  -  Stream/Creek



Aerial photograph provided by ESRI's ArcGIS Online World Imagery (Clarity) map service.

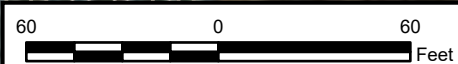


**Legend**

- Excavation Wall Confirmation Sample
- Excavation Floor Confirmation Sample
- Area of Concern
- Soil Surface Stations
- Decision Unit 3
- Building
- Demolished Building
- Former UST
- Railroad
- Site Specific Wetlands
- Stream/Creek

All results shown in milligrams per kilogram (mg/kg).  
[R] = Exceeds residential criteria.

| Chemical of Concern | Residential Receptor |
|---------------------|----------------------|
| Benzo(a)pyrene      | 1.1                  |



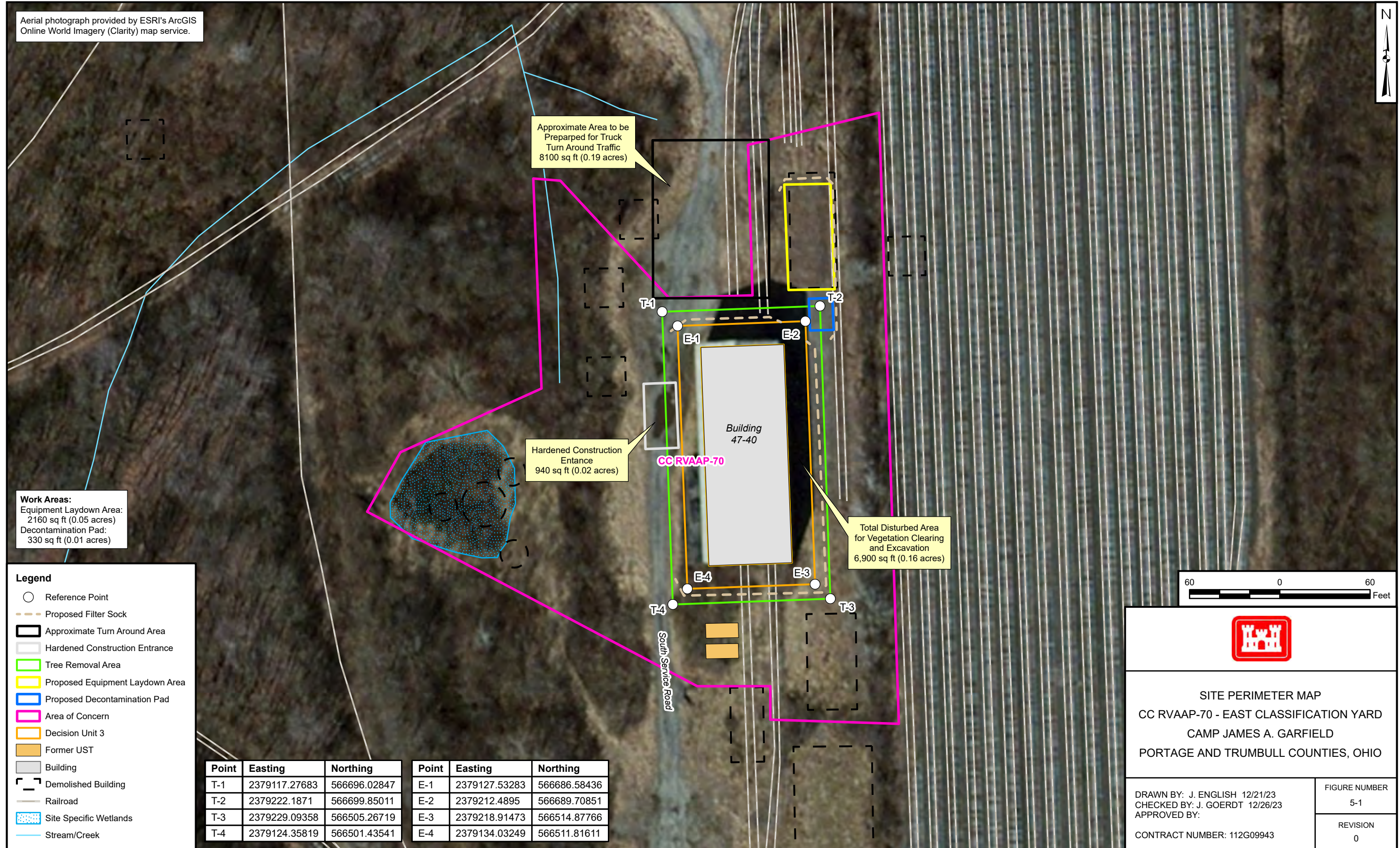
PAH SAMPLE RESULTS AND  
POST-EXCAVATION SAMPLE LOCATIONS  
CC RVAAP-70 - EAST CLASSIFICATION YARD  
CAMP JAMES A. GARFIELD  
PORTAGE AND TRUMBULL COUNTIES, OHIO

DRAWN BY: J. ENGLISH 12/20/23  
CHECKED BY: J. GOERDT 12/20/23  
APPROVED BY:

CONTRACT NUMBER: 112G09943

|               |     |
|---------------|-----|
| FIGURE NUMBER | 2-4 |
| REVISION      | 0   |

Aerial photograph provided by ESRI's ArcGIS Online World Imagery (Clarity) map service.



**Work Areas:**  
 Equipment Laydown Area:  
 2160 sq ft (0.05 acres)  
 Decontamination Pad:  
 330 sq ft (0.01 acres)

Approximate Area to be Prepared for Truck Turn Around Traffic  
 8100 sq ft (0.19 acres)

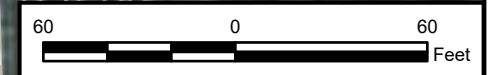
Hardened Construction Entrance  
 940 sq ft (0.02 acres)

Total Disturbed Area for Vegetation Clearing and Excavation  
 6,900 sq ft (0.16 acres)

**Legend**

- Reference Point
- - - Proposed Filter Sock
- ▭ Approximate Turn Around Area
- ▭ Hardened Construction Entrance
- ▭ Tree Removal Area
- ▭ Proposed Equipment Laydown Area
- ▭ Proposed Decontamination Pad
- ▭ Area of Concern
- ▭ Decision Unit 3
- ▭ Former UST
- ▭ Building
- - - Demolished Building
- ▭ Railroad
- ▭ Site Specific Wetlands
- ▭ Stream/Creek

| Point | Easting       | Northing     | Point | Easting       | Northing     |
|-------|---------------|--------------|-------|---------------|--------------|
| T-1   | 2379117.27683 | 566696.02847 | E-1   | 2379127.53283 | 566686.58436 |
| T-2   | 2379222.1871  | 566699.85011 | E-2   | 2379212.4895  | 566689.70851 |
| T-3   | 2379229.09358 | 566505.26719 | E-3   | 2379218.91473 | 566514.87766 |
| T-4   | 2379124.35819 | 566501.43541 | E-4   | 2379134.03249 | 566511.81611 |



**SITE PERIMETER MAP**  
 CC RVAAP-70 - EAST CLASSIFICATION YARD  
 CAMP JAMES A. GARFIELD  
 PORTAGE AND TRUMBULL COUNTIES, OHIO

DRAWN BY: J. ENGLISH 12/21/23  
 CHECKED BY: J. GOERDT 12/26/23  
 APPROVED BY:  
 CONTRACT NUMBER: 112G09943

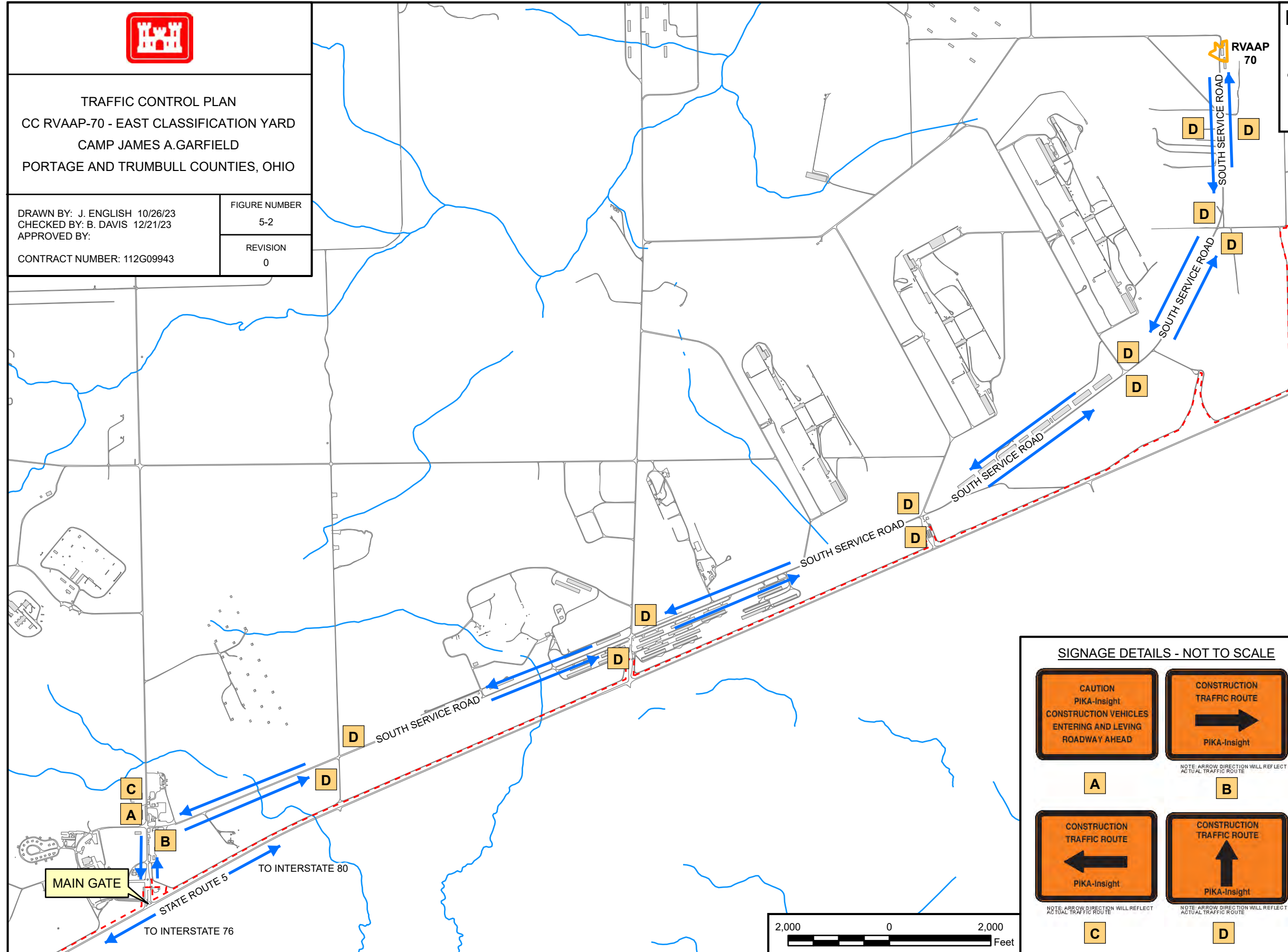
|               |     |
|---------------|-----|
| FIGURE NUMBER | 5-1 |
| REVISION      | 0   |



**TRAFFIC CONTROL PLAN**  
 CC RVAAP-70 - EAST CLASSIFICATION YARD  
 CAMP JAMES A. GARFIELD  
 PORTAGE AND TRUMBULL COUNTIES, OHIO

DRAWN BY: J. ENGLISH 10/26/23  
 CHECKED BY: B. DAVIS 12/21/23  
 APPROVED BY:  
 CONTRACT NUMBER: 112G09943

FIGURE NUMBER  
 5-2  
 REVISION  
 0



**LEGEND**

- TRUCK TRAFFIC ARROW
- BUILDING
- ROAD
- FENCE
- STREAM

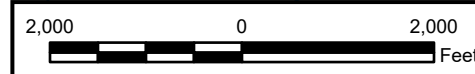
Projection: NAD 1983 SPCS Ohio North (Feet).

**NOTES:**

1. ALL VEHICLES MUST ENTER CJAG THROUGH THE MAIN GATE (8451 STATE ROUTE 5, RAVENNA, OHIO).
2. ALL VEHICLES AND CONTENTS ARE SUBJECT TO SEARCH AND INSPECTION.
3. NO WEAPONS, LIGHTERS OR SIMILAR FIRE STARTERS, OR ALCOHOL ARE PERMITTED ONSITE. PROHIBITED ITEMS MAY BE LEFT WITH SECURITY WHILE ONSITE. SECURITY WILL CONFISCATE ANY PROHIBITED ITEMS DISCOVERED DURING INSPECTIONS.
4. ALL PERSONNEL ENTERING CJAG MUST COMPLETE THE OHARNG SECURITY ACCESS FORM AND SUBMIT IT TO TETRA TECH/INSIGHT ENVIRONMENTAL FOR COORDINATION FOR ACCESS TO THE FACILITY TO COORDINATE WITH THE OHARNG WHO WILL APPROVE ALL ACCESS TO THE FACILITY. ACCESS MUST BE COORDINATED AT LEAST 48 HOURS IN ADVANCE. ALL WEEKEND AND HOLIDAY WORK MUST BE APPROVED BY THE OHARNG.
5. ALL ON-ROAD HAUL TRUCKS WILL ADHERE TO ODOT TRANSPORTATION GUIDELINES. THE SUBCONTRACTOR IS RESPONSIBLE FOR ENSURING AND VERIFYING TRUCKS DO NOT EXCEED 80,000 POUNDS GROSS WEIGHT.
6. ALL HAUL TRUCKS WILL HAVE OPERATIONAL LOAD COVERS IN GOOD CONDITION (I.E., FREE OF HOLES, TEARS). LOADS WILL BE COVERED PRIOR TO DEPARTING THE PROJECT AREAS AND WILL STAY IN PLACE UNTIL UNLOADING AT THE APPROVED DISPOSAL SITE.
7. ON-ROAD HAUL TRUCKS HAULING WASTE SHALL BE LINED IN ACCORDANCE WITH THE APPROVED DISPOSAL FACILITY REQUIREMENTS.
8. ROADS SHALL NOT BE BLOCKED. TRAFFIC SHALL BE MAINTAINED ON AT LEAST ONE HALF OF THE ROADWAY WIDTH AT ALL TIMES.
9. SUBCONTRACTOR SHALL CONFIRM NO OVERHEAD HAZARDS (I.E., POWER LINES), MANHOLES, AND WATER VALVES WILL IMPEDE REMEDIAL ACTIVITIES.
10. THE SUBCONTRACTOR SHALL BE RESPONSIBLE TO REPAIR ANY DAMAGES TO ROADS AS A RESULT OF HIS OR HER SUBCONTRACTORS' ACTIONS.

**SIGNAGE DETAILS - NOT TO SCALE**

|  |  |
|--|--|
| <br><b>A</b>   | <br><small>NOTE: ARROW DIRECTION WILL REFLECT ACTUAL TRAFFIC ROUTE</small><br><b>B</b> |
| <br><small>NOTE: ARROW DIRECTION WILL REFLECT ACTUAL TRAFFIC ROUTE</small><br><b>C</b> | <br><small>NOTE: ARROW DIRECTION WILL REFLECT ACTUAL TRAFFIC ROUTE</small><br><b>D</b> |



**APPENDIX A**

**SITE SAFETY AND HEALTH PLAN / ACCIDENT PREVENTION PLAN**

**(UNDER SEPARATE COVER)**

**APPENDIX B**  
**LABORATORY CERTIFICATIONS**



# PERRY JOHNSON LABORATORY ACCREDITATION, INC.

## *Certificate of Accreditation*

*Perry Johnson Laboratory Accreditation, Inc. has assessed the Laboratory of:*

***ALS - Middletown***  
***301 Fulling Mill Road, Middletown, PA 17057***

*(Hereinafter called the Organization) and hereby declares that Organization has met the requirements of ISO/IEC 17025:2017) General Requirements for the competence of Testing and Calibration Laboratories and the United States Department of Defense Environmental Laboratory Accreditation Program (DoD-ELAP) requirements identified within the DoD/DOE Quality Systems Manual (DoD/DOE QSM) Version 5.3 May 2019 and is accredited in accordance with the*

### **United States Department of Defense Environmental Laboratory Accreditation Program (DoD-ELAP)**

***This accreditation demonstrates technical competence for the defined scope:  
Environmental Testing  
(As detailed in the supplement)***

Accreditation claims for such testing and/or calibration services shall only be made from addresses referenced within this certificate. This Accreditation is granted subject to the system rules governing the Accreditation referred to above, and the Organization hereby covenants with the Accreditation body's duty to observe and comply with the said rules.

For PJLA:

Tracy Szerszen  
President

*Initial Accreditation Date:*

August 22, 2017

*Issue Date:*

December 17, 2021

*Expiration Date:*

February 29, 2024

*Accreditation No.:*

74618

*Certificate No.:*

L21-781

Perry Johnson Laboratory  
Accreditation, Inc. (PJLA)  
755 W. Big Beaver, Suite 1325  
Troy, Michigan 48084

*The validity of this certificate is maintained through ongoing assessments based on a continuous accreditation cycle. The validity of this certificate should be confirmed through the PJLA website: [www.pjilabs.com](http://www.pjilabs.com)*





# Certificate of Accreditation: Supplement

## ISO/IEC 17025:2017 and DoD-ELAP

### ALS-Middletown

301 Fulling Mill Road, Middletown, PA 17057  
Contact Name: Susan Magness Phone: 717-944-5541

*Accreditation is granted to the facility to perform the following testing:*

| Matrix  | Standard/Method         | Technology         | Analyte   |
|---------|-------------------------|--------------------|---|
| Aqueous | EPA 218.6               | IC                 | Hexavalent Chromium                             |
| Aqueous | EPA 410.4               | Colorimetric       | Chemical Oxygen Demand (COD)                    |
| Aqueous | EPA 5540C               | Spectrophotometric | MBAS (Surfactants)                              |
| Aqueous | EPA 245.1               | CVAA               | Mercury   |
| Aqueous | EPA 1631E               | CVAFS              | Mercury   |
| Aqueous | Kelada-01               | Spectrophotometric | Amenable Cyanide                                |
| Aqueous | Kelada-01               | Spectrophotometric | Total Cyanide                                   |
| Aqueous | SM2130B                 | Turbidimetric      | Turbidity                                       |
| Aqueous | EPA 7470A               | CVAA               | Mercury   |
| Aqueous | EPA 8011                | GC-ECD             | 1,2-Dibromo-3-Chloropropane (DBCP)              |
| Aqueous | EPA 8011                | GC-ECD             | 1,2-Dibromoethane (EDB)                         |
| Aqueous | EPA 8011                | GC-ECD             | 1,2,3-Trichloropropane                          |
| Aqueous | EPA 8015C, EPA 8015D    | GC/FID             | Ethanol   |
| Aqueous | EPA 8015C, EPA 8015D    | GC/FID             | Ethyl Acetate                                   |
| Aqueous | EPA 8015C, EPA 8015D    | GC/FID             | Ethylene Glycol                                 |
| Aqueous | EPA 8015C, EPA 8015D    | GC/FID             | Isoamyl Alcohol                                 |
| Aqueous | EPA 8015C, EPA 8015D    | GC/FID             | Isobutyl Alcohol (2 methyl-1-propanol)          |
| Aqueous | EPA 8015C, EPA 8015D    | GC/FID             | Isopropyl Alcohol (2-propanol)<br>(Isopropanol) |
| Aqueous | EPA 8015C, EPA 8015D    | GC/FID             | Methanol  |
| Aqueous | EPA 8015C, EPA 8015D    | GC/FID             | Methyl Ethyl Ketone (2-butanone)                |
| Aqueous | EPA 8015C, EPA 8015D    | GC/FID             | Methyl Isobutyl Ketone (MIBK)                   |
| Aqueous | EPA 8015C, EPA 8015D    | GC/FID             | n-Butanol                                       |
| Aqueous | EPA 8015C, EPA 8015D    | GC/FID             | n-Propanol                                      |
| Aqueous | EPA 8015C, EPA 8015D    | GC/FID             | Propylene Glycol                                |
| Aqueous | EPA 8015C, EPA 8015D    | GC/FID             | tert-Butyl Alcohol                              |
| Aqueous | EPA 8260C, EPA 8260D    | GC/MS              | 2-Chloroethylvinylether                         |
| Aqueous | EPA 9040C               | Electrode          | pH, Corrosivity, Hydrogen Ion                   |
| Aqueous | EPA 9050A               | Probe              | Specific Conductance                            |
| Aqueous | EPA 9060A, SM5310B-2000 | Combustion         | Total Organic Carbon                            |
| Aqueous | RSK 175                 | GC-FID             | Methane, Ethane, and Ethene                     |
| Aqueous | SM 2320B                | Titrimetric        | Alkalinity                                      |
| Aqueous | SM 2540C                | Gravimetric        | Total Dissolved Solids                          |
| Aqueous | SM 2540D                | Gravimetric        | Total Suspended Solids                          |
| Aqueous | SM 3500 Fe B            | Colorimetric       | Ferrous Iron                                    |
| Aqueous | SM 4500-S2 F            | Titrimetric        | Sulfide   |
| Aqueous | SM 5210B                | Probe              | Biochemical Oxygen Demand (BOD)                 |



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| Matrix  | Standard/Method      | Technology  | Analyte                    |
|---------|----------------------|-------------|----------------------------|
| Aqueous | SM 5210B             | Probe       | Carbonaceous BOD (CBOD)    |
| Aqueous | EPA 200.7, EPA 200.8 | ICP/ ICP-MS | Aluminum                   |
| Aqueous | EPA 200.7, EPA 200.8 | ICP/ ICP-MS | Antimony                   |
| Aqueous | EPA 200.7, EPA 200.8 | ICP/ ICP-MS | Arsenic                    |
| Aqueous | EPA 200.7, EPA 200.8 | ICP/ ICP-MS | Barium                     |
| Aqueous | EPA 200.7, EPA 200.8 | ICP/ ICP-MS | Beryllium                  |
| Aqueous | EPA 200.7, EPA 200.8 | ICP/ ICP-MS | Cadmium                    |
| Aqueous | EPA 200.7, EPA 200.8 | ICP/ ICP-MS | Calcium                    |
| Aqueous | EPA 200.7, EPA 200.8 | ICP/ ICP-MS | Chromium                   |
| Aqueous | EPA 200.7, EPA 200.8 | ICP/ ICP-MS | Cobalt                     |
| Aqueous | EPA 200.7, EPA 200.8 | ICP/ ICP-MS | Copper                     |
| Aqueous | EPA 200.7, EPA 200.8 | ICP/ ICP-MS | Iron                       |
| Aqueous | EPA 200.7, EPA 200.8 | ICP/ ICP-MS | Lead                       |
| Aqueous | EPA 200.7, EPA 200.8 | ICP/ ICP-MS | Magnesium                  |
| Aqueous | EPA 200.7, EPA 200.8 | ICP/ ICP-MS | Manganese                  |
| Aqueous | EPA 200.7, EPA 200.8 | ICP/ ICP-MS | Molybdenum                 |
| Aqueous | EPA 200.7, EPA 200.8 | ICP/ ICP-MS | Nickel                     |
| Aqueous | EPA 200.7, EPA 200.8 | ICP/ ICP-MS | Potassium                  |
| Aqueous | EPA 200.7, EPA 200.8 | ICP/ ICP-MS | Selenium                   |
| Aqueous | EPA 200.7            | ICP/ ICP-MS | Silica as SiO <sub>2</sub> |
| Aqueous | EPA 200.7, EPA 200.8 | ICP/ ICP-MS | Silver                     |
| Aqueous | EPA 200.7, EPA 200.8 | ICP/ ICP-MS | Sodium                     |
| Aqueous | EPA 200.7, EPA 200.8 | ICP/ ICP-MS | Strontium                  |
| Aqueous | EPA 200.7, EPA 200.8 | ICP/ ICP-MS | Thallium                   |
| Aqueous | EPA 200.7, EPA 200.8 | ICP/ ICP-MS | Tin                        |
| Aqueous | EPA 200.7, EPA 200.8 | ICP/ ICP-MS | Titanium                   |
| Aqueous | EPA 200.7, EPA 200.8 | ICP/ ICP-MS | Vanadium                   |
| Aqueous | EPA 200.7, EPA 200.8 | ICP/ ICP-MS | Zinc                       |
| Aqueous | EPA 522              | GC/MS       | 1,4-Dioxane                |
| Aqueous | EPA 608.3            | GC/ECD      | Aldrin                     |
| Aqueous | EPA 608.3            | GC/ECD      | Alpha-BHC                  |
| Aqueous | EPA 608.3            | GC/ECD      | Beta-BHC                   |
| Aqueous | EPA 608.3            | GC/ECD      | Delta-BHC                  |
| Aqueous | EPA 608.3            | GC/ECD      | Gamma-BHC (Lindane)        |
| Aqueous | EPA 608.3            | GC/ECD      | Chlordane                  |
| Aqueous | EPA 608.3            | GC/ECD      | Alpha-Chlordane            |



# Certificate of Accreditation: Supplement

## ISO/IEC 17025:2017 and DoD-ELAP

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*Accreditation is granted to the facility to perform the following testing:*

| Matrix  | Standard/Method | Technology | Analyte              |
|---------|-----------------|------------|----------------------|
| Aqueous | EPA 608.3       | GC/ECD     | Gamma-Chlordane      |
| Aqueous | EPA 608.3       | GC/ECD     | 4-4'-DDD             |
| Aqueous | EPA 608.3       | GC/ECD     | 4-4'-DDE             |
| Aqueous | EPA 608.3       | GC/ECD     | 4-4'-DDT             |
| Aqueous | EPA 608.3       | GC/ECD     | Dieldrin             |
| Aqueous | EPA 608.3       | GC/ECD     | Endosulfan I         |
| Aqueous | EPA 608.3       | GC/ECD     | Endosulfan II        |
| Aqueous | EPA 608.3       | GC/ECD     | Endosulfan Sulfate   |
| Aqueous | EPA 608.3       | GC/ECD     | Endrin               |
| Aqueous | EPA 608.3       | GC/ECD     | Endrin Aldehyde      |
| Aqueous | EPA 608.3       | GC/ECD     | Endrin Ketone        |
| Aqueous | EPA 608.3       | GC/ECD     | Heptachlor           |
| Aqueous | EPA 608.3       | GC/ECD     | Heptachlor Epoxide   |
| Aqueous | EPA 608.3       | GC/ECD     | Methoxychlor         |
| Aqueous | EPA 608.3       | GC/ECD     | Mirex                |
| Aqueous | EPA 608.3       | GC/ECD     | Toxaphene            |
| Aqueous | EPA 608.3       | GC/ECD     | PCB-1016             |
| Aqueous | EPA 608.3       | GC/ECD     | PCB-1221             |
| Aqueous | EPA 608.3       | GC/ECD     | PCB-1232             |
| Aqueous | EPA 608.3       | GC/ECD     | PCB-1242             |
| Aqueous | EPA 608.3       | GC/ECD     | PCB-1248             |
| Aqueous | EPA 608.3       | GC/ECD     | PCB-1254             |
| Aqueous | EPA 608.3       | GC/ECD     | PCB-1260             |
| Aqueous | EPA 608.3       | GC/ECD     | PCB-1262             |
| Aqueous | EPA 608.3       | GC/ECD     | PCB-1268             |
| Aqueous | EPA 624.1       | GC/MS      | Benzene              |
| Aqueous | EPA 624.1       | GC/MS      | Bromobenzene         |
| Aqueous | EPA 624.1       | GC/MS      | Bromochloromethane   |
| Aqueous | EPA 624.1       | GC/MS      | Bromodichloromethane |
| Aqueous | EPA 624.1       | GC/MS      | Bromoform            |
| Aqueous | EPA 624.1       | GC/MS      | n-Butylbenzene       |
| Aqueous | EPA 624.1       | GC/MS      | Sec-Butylbenzene     |
| Aqueous | EPA 624.1       | GC/MS      | Tert-Butylbenzene    |
| Aqueous | EPA 624.1       | GC/MS      | Carbon tetrachloride |
| Aqueous | EPA 624.1       | GC/MS      | Chlorobenzene        |
| Aqueous | EPA 624.1       | GC/MS      | Chloroform           |



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ISO/IEC 17025:2017 and DoD-ELAP

## ALS-Middletown

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Accreditation is granted to the facility to perform the following testing:

| Matrix  | Standard/Method | Technology | Analyte                     |
|---------|-----------------|------------|-----------------------------|
| Aqueous | EPA 624.1       | GC/MS      | 2-Chlorotoluene (o)         |
| Aqueous | EPA 624.1       | GC/MS      | 4-Chlorotoluene (p)         |
| Aqueous | EPA 624.1       | GC/MS      | Dibromochloromethane        |
| Aqueous | EPA 624.1       | GC/MS      | 1,2-Dibromo-3-chloropropane |
| Aqueous | EPA 624.1       | GC/MS      | 1,2-Dibromoethane (EDB)     |
| Aqueous | EPA 624.1       | GC/MS      | Dibromomethane              |
| Aqueous | EPA 624.1       | GC/MS      | 1,2-Dichlorobenzene         |
| Aqueous | EPA 624.1       | GC/MS      | 1,3-Dichlorobenzene         |
| Aqueous | EPA 624.1       | GC/MS      | 1,4-Dichlorobenzene         |
| Aqueous | EPA 624.1       | GC/MS      | 1,1-Dichloroethene          |
| Aqueous | EPA 624.1       | GC/MS      | Cis-1,2-Dichloroethene      |
| Aqueous | EPA 624.1       | GC/MS      | Trans-1,2-Dichloroethene    |
| Aqueous | EPA 624.1       | GC/MS      | 1,2-Dichloropropane         |
| Aqueous | EPA 624.1       | GC/MS      | 1,3-Dichloropropane         |
| Aqueous | EPA 624.1       | GC/MS      | 2,2-Dichloropropane         |
| Aqueous | EPA 624.1       | GC/MS      | 1,1-Dichloropropene         |
| Aqueous | EPA 624.1       | GC/MS      | Cis-1,3-Dichloropropene     |
| Aqueous | EPA 624.1       | GC/MS      | Trans-1,3-Dichloropropene   |
| Aqueous | EPA 624.1       | GC/MS      | Ethylbenzene                |
| Aqueous | EPA 624.1       | GC/MS      | Hexachlorobutadiene         |
| Aqueous | EPA 624.1       | GC/MS      | Isopropylbenzene (Cumene)   |
| Aqueous | EPA 624.1       | GC/MS      | p-Isopropyltoluene          |
| Aqueous | EPA 624.1       | GC/MS      | Methylene Chloride          |
| Aqueous | EPA 624.1       | GC/MS      | Naphthalene                 |
| Aqueous | EPA 624.1       | GC/MS      | n-Propylbenzene             |
| Aqueous | EPA 624.1       | GC/MS      | Styrene                     |
| Aqueous | EPA 624.1       | GC/MS      | 1,1,1,2-Tetrachloroethane   |
| Aqueous | EPA 624.1       | GC/MS      | 1,1,2,2-Tetrachloroethane   |
| Aqueous | EPA 624.1       | GC/MS      | Tetrachloroethene           |
| Aqueous | EPA 624.1       | GC/MS      | Toluene                     |
| Aqueous | EPA 624.1       | GC/MS      | 1,2,3-Trichlorobenzene      |
| Aqueous | EPA 624.1       | GC/MS      | 1,2,4-Trimethylbenzene      |
| Aqueous | EPA 624.1       | GC/MS      | 1,3,5-Trimethylbenzene      |
| Aqueous | EPA 624.1       | GC/MS      | m-xylene                    |
| Aqueous | EPA 624.1       | GC/MS      | p-xylene                    |
| Aqueous | EPA 624.1       | GC/MS      | o-xylene                    |



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| Matrix  | Standard/Method | Technology | Analyte                        |
|---------|-----------------|------------|--------------------------------|
| Aqueous | EPA 624.1       | GC/MS      | 1,1-Dichloroethane             |
| Aqueous | EPA 624.1       | GC/MS      | 1,1,1-Trichloroethane          |
| Aqueous | EPA 624.1       | GC/MS      | 1,2-Dichloroethane             |
| Aqueous | EPA 624.1       | GC/MS      | 1,2,3-Trichloropropane         |
| Aqueous | EPA 624.1       | GC/MS      | 1,2,4-Trichlorobenzene         |
| Aqueous | EPA 624.1       | GC/MS      | 1,1,2-Trichloroethane          |
| Aqueous | EPA 624.1       | GC/MS      | Trichloroethene                |
| Aqueous | EPA 624.1       | GC/MS      | Vinyl Acetate                  |
| Aqueous | EPA 624.1       | GC/MS      | Methyl acetate                 |
| Aqueous | EPA 624.1       | GC/MS      | Ethyl acetate                  |
| Aqueous | EPA 624.1       | GC/MS      | Acetone                        |
| Aqueous | EPA 624.1       | GC/MS      | 2-Butanone                     |
| Aqueous | EPA 624.1       | GC/MS      | 4-Methyl-2-pentanone           |
| Aqueous | EPA 624.1       | GC/MS      | 2-Hexanone                     |
| Aqueous | EPA 624.1       | GC/MS      | 1,1-Dichloro-2-propanone       |
| Aqueous | EPA 624.1       | GC/MS      | Pentane                        |
| Aqueous | EPA 624.1       | GC/MS      | 3-Chloroprene (allyl chloride) |
| Aqueous | EPA 624.1       | GC/MS      | Di-isobutylene                 |
| Aqueous | EPA 624.1       | GC/MS      | 1-Chlorohexane                 |
| Aqueous | EPA 624.1       | GC/MS      | Methyl-tert-butyl ether        |
| Aqueous | EPA 624.1       | GC/MS      | Ethyl ether                    |
| Aqueous | EPA 624.1       | GC/MS      | Freon 113 (1,1,2-TCTFE)        |
| Aqueous | EPA 624.1       | GC/MS      | Hexane                         |
| Aqueous | EPA 624.1       | GC/MS      | Heptane                        |
| Aqueous | EPA 624.1       | GC/MS      | Cyclohexane                    |
| Aqueous | EPA 624.1       | GC/MS      | Benzyl chloride                |
| Aqueous | EPA 624.1       | GC/MS      | Iodomethane                    |
| Aqueous | EPA 624.1       | GC/MS      | Carbon Disulfide               |
| Aqueous | EPA 624.1       | GC/MS      | Chloroprene                    |
| Aqueous | EPA 624.1       | GC/MS      | Octane                         |
| Aqueous | EPA 624.1       | GC/MS      | Acrylonitrile                  |
| Aqueous | EPA 624.1       | GC/MS      | 2-Nitropropane                 |
| Aqueous | EPA 624.1       | GC/MS      | Tetrahydrofuran                |
| Aqueous | EPA 624.1       | GC/MS      | Tert-Butyl alcohol             |
| Aqueous | EPA 624.1       | GC/MS      | Trans-1,4-Dichloro-2-butene    |
| Aqueous | EPA 624.1       | GC/MS      | Methyl methacrylate            |



# Certificate of Accreditation: Supplement

ISO/IEC 17025:2017 and DoD-ELAP

## ALS-Middletown

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 Contact Name: Susan Magness Phone: 717-944-5541

Accreditation is granted to the facility to perform the following testing:

| Matrix  | Standard/Method | Technology | Analyte                    |
|---------|-----------------|------------|----------------------------|
| Aqueous | EPA 624.1       | GC/MS      | Isobutyl alcohol           |
| Aqueous | EPA 624.1       | GC/MS      | Hexachloroethane           |
| Aqueous | EPA 624.1       | GC/MS      | Ethyl methacrylate         |
| Aqueous | EPA 624.1       | GC/MS      | 2-Propanol                 |
| Aqueous | EPA 624.1       | GC/MS      | 1-Propanol                 |
| Aqueous | EPA 624.1       | GC/MS      | Propionitrile              |
| Aqueous | EPA 624.1       | GC/MS      | Methacrylonitrile          |
| Aqueous | EPA 624.1       | GC/MS      | Pentachloroethane          |
| Aqueous | EPA 624.1       | GC/MS      | Nitrobenzene               |
| Aqueous | EPA 624.1       | GC/MS      | Methyl acrylate            |
| Aqueous | EPA 624.1       | GC/MS      | Chloroacetonitrile         |
| Aqueous | EPA 624.1       | GC/MS      | 1-Chlorobutane             |
| Aqueous | EPA 624.1       | GC/MS      | tert-amyl methyl ether     |
| Aqueous | EPA 624.1       | GC/MS      | Ethyl tert-butyl ether     |
| Aqueous | EPA 624.1       | GC/MS      | Di-isopropyl ether         |
| Aqueous | EPA 624.1       | GC/MS      | Methyl cyclohexane         |
| Aqueous | EPA 624.1       | GC/MS      | Acetonitrile               |
| Aqueous | EPA 624.1       | GC/MS      | Acrolein                   |
| Aqueous | EPA 624.1       | GC/MS      | 2-Chloroethyl vinyl ether  |
| Aqueous | EPA 624.1       | GC/MS      | Bromomethane               |
| Aqueous | EPA 624.1       | GC/MS      | Chloroethane               |
| Aqueous | EPA 624.1       | GC/MS      | Chloromethane              |
| Aqueous | EPA 624.1       | GC/MS      | Dichlorodifluoromethane    |
| Aqueous | EPA 624.1       | GC/MS      | Trichlorofluoromethane     |
| Aqueous | EPA 624.1       | GC/MS      | Vinyl Chloride             |
| Aqueous | EPA 624.1       | GC/MS      | N-propyl bromide           |
| Aqueous | EPA 624.1       | GC/MS      | Dichlorofluoromethane      |
| Aqueous | EPA 625.1       | GC/MS      | 1,1'-Biphenyl              |
| Aqueous | EPA 625.1       | GC/MS      | 1,2,4,5-Tetrachlorobenzene |
| Aqueous | EPA 625.1       | GC/MS      | 1,2,4-Trichlorobenzene     |
| Aqueous | EPA 625.1       | GC/MS      | 1,2-Dichlorobenzene        |
| Aqueous | EPA 625.1       | GC/MS      | 1,2-Dinitrobenzene         |
| Aqueous | EPA 625.1       | GC/MS      | 1,2-Diphenylhydrazine      |
| Aqueous | EPA 625.1       | GC/MS      | 1,3-Dichlorobenzene        |
| Aqueous | EPA 625.1       | GC/MS      | 1,3-Dinitrobenzene         |
| Aqueous | EPA 625.1       | GC/MS      | 1,4-Dichlorobenzene        |



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## ALS-Middletown

301 Fulling Mill Road, Middletown, PA 17057  
 Contact Name: Susan Magness Phone: 717-944-5541

*Accreditation is granted to the facility to perform the following testing:*

| Matrix  | Standard/Method | Technology | Analyte                    |
|---------|-----------------|------------|----------------------------|
| Aqueous | EPA 625.1       | GC/MS      | 1,4-Dinitrobenzene         |
| Aqueous | EPA 625.1       | GC/MS      | 1,4-Dioxane                |
| Aqueous | EPA 625.1       | GC/MS      | 1-Methylnaphthalene        |
| Aqueous | EPA 625.1       | GC/MS      | 2,3,4,6-Tetrachlorophenol  |
| Aqueous | EPA 625.1       | GC/MS      | 2,3,5,6-Tetrachlorophenol  |
| Aqueous | EPA 625.1       | GC/MS      | 2,3-Dichloroaniline        |
| Aqueous | EPA 625.1       | GC/MS      | 2,4,5-Trichlorophenol      |
| Aqueous | EPA 625.1       | GC/MS      | 2,4,6-Trichlorophenol      |
| Aqueous | EPA 625.1       | GC/MS      | 2,4-Dichlorophenol         |
| Aqueous | EPA 625.1       | GC/MS      | 2,4-Dimethylphenol         |
| Aqueous | EPA 625.1       | GC/MS      | 2,4-Dinitrophenol          |
| Aqueous | EPA 625.1       | GC/MS      | 2,4-Dinitrotoluene         |
| Aqueous | EPA 625.1       | GC/MS      | 2,6-Dichlorophenol         |
| Aqueous | EPA 625.1       | GC/MS      | 2,6-Dinitrotoluene         |
| Aqueous | EPA 625.1       | GC/MS      | 2-Chloronaphthalene        |
| Aqueous | EPA 625.1       | GC/MS      | 2-Chlorophenol             |
| Aqueous | EPA 625.1       | GC/MS      | 2-Methylnaphthalene        |
| Aqueous | EPA 625.1       | GC/MS      | 2-Methylphenol             |
| Aqueous | EPA 625.1       | GC/MS      | 2-Naphthylamine            |
| Aqueous | EPA 625.1       | GC/MS      | 2-Nitroaniline             |
| Aqueous | EPA 625.1       | GC/MS      | 2-Nitrophenol              |
| Aqueous | EPA 625.1       | GC/MS      | 3 & 4-Methylphenols        |
| Aqueous | EPA 625.1       | GC/MS      | 3,3'-Dichlorobenzidine     |
| Aqueous | EPA 625.1       | GC/MS      | 3-Nitroaniline             |
| Aqueous | EPA 625.1       | GC/MS      | 4,6-Dinitro-2-methylphenol |
| Aqueous | EPA 625.1       | GC/MS      | 4-Bromophenyl-Phenylether  |
| Aqueous | EPA 625.1       | GC/MS      | 4-Chloro-3-Methylphenol    |
| Aqueous | EPA 625.1       | GC/MS      | 4-Chloroaniline            |
| Aqueous | EPA 625.1       | GC/MS      | 4-Chlorophenyl-phenylether |
| Aqueous | EPA 625.1       | GC/MS      | 4-Nitroaniline             |
| Aqueous | EPA 625.1       | GC/MS      | 4-Nitrophenol              |
| Aqueous | EPA 625.1       | GC/MS      | Acenaphthene               |
| Aqueous | EPA 625.1       | GC/MS      | Acenaphthylene             |
| Aqueous | EPA 625.1       | GC/MS      | Acetophenone               |
| Aqueous | EPA 625.1       | GC/MS      | alpha-Terpineol            |
| Aqueous | EPA 625.1       | GC/MS      | Aniline                    |



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| Matrix  | Standard/Method | Technology | Analyte                     |
|---------|-----------------|------------|-----------------------------|
| Aqueous | EPA 625.1       | GC/MS      | Anthracene                  |
| Aqueous | EPA 625.1       | GC/MS      | Atrazine                    |
| Aqueous | EPA 625.1       | GC/MS      | Azobenzene                  |
| Aqueous | EPA 625.1       | GC/MS      | Benzaldehyde                |
| Aqueous | EPA 625.1       | GC/MS      | Benzidine                   |
| Aqueous | EPA 625.1       | GC/MS      | Benzo(a)Anthracene          |
| Aqueous | EPA 625.1       | GC/MS      | Benzo(a)Pyrene              |
| Aqueous | EPA 625.1       | GC/MS      | Benzo(b)Fluoranthene        |
| Aqueous | EPA 625.1       | GC/MS      | Benzo(g,h,i)Perylene        |
| Aqueous | EPA 625.1       | GC/MS      | Benzo(k)Fluoranthene        |
| Aqueous | EPA 625.1       | GC/MS      | Benzyl Alcohol              |
| Aqueous | EPA 625.1       | GC/MS      | bis (2-ethylhexyl)adipate   |
| Aqueous | EPA 625.1       | GC/MS      | Bis(2-Chloroethoxy)Methane  |
| Aqueous | EPA 625.1       | GC/MS      | Bis(2-Chloroethyl)Ether     |
| Aqueous | EPA 625.1       | GC/MS      | bis(2-Chloroisopropyl)ether |
| Aqueous | EPA 625.1       | GC/MS      | bis(2-ethylhexyl)Phthalate  |
| Aqueous | EPA 625.1       | GC/MS      | Butylbenzylphthalate        |
| Aqueous | EPA 625.1       | GC/MS      | Caprolactam                 |
| Aqueous | EPA 625.1       | GC/MS      | Carbazole                   |
| Aqueous | EPA 625.1       | GC/MS      | Chrysene                    |
| Aqueous | EPA 625.1       | GC/MS      | Dibenzo(a,h)anthracene      |
| Aqueous | EPA 625.1       | GC/MS      | Dibenzofuran                |
| Aqueous | EPA 625.1       | GC/MS      | Diethylphthalate            |
| Aqueous | EPA 625.1       | GC/MS      | Dimethoate                  |
| Aqueous | EPA 625.1       | GC/MS      | Dimethylphthalate           |
| Aqueous | EPA 625.1       | GC/MS      | Di-n-Butylphthalate         |
| Aqueous | EPA 625.1       | GC/MS      | Di-n-Octylphthalate         |
| Aqueous | EPA 625.1       | GC/MS      | Diphenylamine               |
| Aqueous | EPA 625.1       | GC/MS      | Fluoranthene                |
| Aqueous | EPA 625.1       | GC/MS      | Fluorene                    |
| Aqueous | EPA 625.1       | GC/MS      | Hexachlorobenzene           |
| Aqueous | EPA 625.1       | GC/MS      | Hexachlorobutadiene         |
| Aqueous | EPA 625.1       | GC/MS      | Hexachlorocyclopentadiene   |
| Aqueous | EPA 625.1       | GC/MS      | Hexachloroethane            |
| Aqueous | EPA 625.1       | GC/MS      | Indeno(1,2,3-cd)Pyrene      |
| Aqueous | EPA 625.1       | GC/MS      | Isophorone                  |





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Accreditation is granted to the facility to perform the following testing:

| Matrix        | Standard/Method      | Technology         | Analyte                            |
|---------------|----------------------|--------------------|------------------------------------|
| Aqueous       | EPA 625.1            | GC/MS              | Naphthalene                        |
| Aqueous       | EPA 625.1            | GC/MS              | n-Decane                           |
| Aqueous       | EPA 625.1            | GC/MS              | n-Heptadecane                      |
| Aqueous       | EPA 625.1            | GC/MS              | Nitrobenzene                       |
| Aqueous       | EPA 625.1            | GC/MS              | N-Nitrosodiethylamine              |
| Aqueous       | EPA 625.1            | GC/MS              | N-Nitrosodimethylamine             |
| Aqueous       | EPA 625.1            | GC/MS              | N-Nitroso-di-n-butylamine          |
| Aqueous       | EPA 625.1            | GC/MS              | N-Nitrosodipropylamine             |
| Aqueous       | EPA 625.1            | GC/MS              | N-Nitrosodiphenylamine             |
| Aqueous       | EPA 625.1            | GC/MS              | N-Nitrosopyrrolidine               |
| Aqueous       | EPA 625.1            | GC/MS              | n-Octadecane                       |
| Aqueous       | EPA 625.1            | GC/MS              | Pentachlorobenzene                 |
| Aqueous       | EPA 625.1            | GC/MS              | Pentachlorophenol                  |
| Aqueous       | EPA 625.1            | GC/MS              | Phenanthrene                       |
| Aqueous       | EPA 625.1            | GC/MS              | Phenol                             |
| Aqueous       | EPA 625.1            | GC/MS              | Pyrene                             |
| Aqueous       | EPA 625.1            | GC/MS              | Pyridine                           |
| Aqueous       | SM4500P E            | Spectrophotometric | Orthophosphate                     |
| Solid         | EPA 7471B            | CVAA/CVAF          | Mercury                            |
| Solid         | EPA 8270D, EPA 8270E | GC/MS              | Resorcinol                         |
| Solid         | EPA 9045D            | Electrode          | pH, Corrosivity, Hydrogen Ion      |
| Solid         | EPA 9030B/9034       | Titrimetric        | Sulfide                            |
| Solid         | EPA 9060A            | Combustion         | Total Organic Carbon (TOC)         |
| Solid         | EPA 9071B            | Gravimetric        | Hexane Extractable Materials (HEM) |
| Solid         | EPA 9071B            | Gravimetric        | Total Petroleum Hydrocarbons (TPH) |
| Solid         | EPA 9095B            | Gravimetric        | Paint Filter Test                  |
| Solid         | SM 2320B             | Titrimetric        | Alkalinity                         |
| Solid         | SM 2540G             | Gravimetric        | Total Solids                       |
| Aqueous/Solid | EPA 314.0            | IC                 | Perchlorate                        |
| Aqueous/Solid | EPA 365.1            | Spectrophotometric | Phosphorus                         |
| Aqueous/Solid | SM4500NH3 G (TKN)    | Spectrophotometric | Total Kjeldahl Nitrogen (TKN)      |
| Aqueous/Solid | ASTM D6919-09        | IC                 | Ammonia                            |
| Aqueous       | EPA 1664B            | Gravimetric        | Hexane Extractable Materials (HEM) |
| Aqueous/Solid | EPA 1664B            | Gravimetric        | Total Petroleum Hydrocarbons (TPH) |
| Aqueous/Solid | NJEPH (C8-C44)       | GC/FID             | EPH                                |
| Aqueous/Solid | EPA 300.0, EPA 9056A | IC                 | Bromide                            |



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*Accreditation is granted to the facility to perform the following testing:*

| Matrix        | Standard/Method      | Technology | Analyte                               |
|---------------|----------------------|------------|---------------------------------------|
| Aqueous/Solid | EPA 300.0, EPA 9056A | IC         | Chloride                              |
| Aqueous/Solid | EPA 300.0, EPA 9056A | IC         | Fluoride                              |
| Aqueous/Solid | EPA 300.0, EPA 9056A | IC         | Nitrate                               |
| Aqueous/Solid | EPA 300.0, EPA 9056A | IC         | Nitrite                               |
| Aqueous/Solid | EPA 300.0, EPA 9056A | IC         | Sulfate                               |
| Aqueous/Solid | EPA 6010D, EPA 6010C | ICP        | Bismuth                               |
| Aqueous/Solid | EPA 6010D, EPA 6010C | ICP        | Boron                                 |
| Aqueous/Solid | EPA 6010D, EPA 6010C | ICP        | Calcium Hardness (CaCO <sub>3</sub> ) |
| Aqueous/Solid | EPA 6010D, EPA 6010C | ICP        | Hardness-Total as CaCO <sub>3</sub>   |
| Aqueous/Solid | EPA 6010D, EPA 6010C | ICP        | Lithium                               |
| Aqueous/Solid | EPA 6010D, EPA 6010C | ICP        | Sulfur                                |
| Aqueous/Solid | EPA 6010D, EPA 6010C | ICP        | Aluminum                              |
| Aqueous/Solid | EPA 6010D, EPA 6010C | ICP        | Antimony                              |
| Aqueous/Solid | EPA 6010D, EPA 6010C | ICP        | Arsenic                               |
| Aqueous/Solid | EPA 6010D, EPA 6010C | ICP        | Barium                                |
| Aqueous/Solid | EPA 6010D, EPA 6010C | ICP        | Beryllium                             |
| Aqueous/Solid | EPA 6010D, EPA 6010C | ICP        | Cadmium                               |
| Aqueous/Solid | EPA 6010D, EPA 6010C | ICP        | Calcium                               |
| Aqueous/Solid | EPA 6010D, EPA 6010C | ICP        | Chromium                              |
| Aqueous/Solid | EPA 6010D, EPA 6010C | ICP        | Cobalt                                |
| Aqueous/Solid | EPA 6010D, EPA 6010C | ICP        | Copper                                |
| Aqueous/Solid | EPA 6010D, EPA 6010C | ICP        | Iron                                  |
| Aqueous/Solid | EPA 6010D, EPA 6010C | ICP        | Lead                                  |
| Aqueous/Solid | EPA 6010D, EPA 6010C | ICP        | Magnesium                             |
| Aqueous/Solid | EPA 6010D, EPA 6010C | ICP        | Manganese                             |
| Aqueous/Solid | EPA 6010D, EPA 6010C | ICP        | Molybdenum                            |
| Aqueous/Solid | EPA 6010D, EPA 6010C | ICP        | Nickel                                |
| Aqueous/Solid | EPA 6010D, EPA 6010C | ICP        | Potassium                             |
| Aqueous/Solid | EPA 6010D, EPA 6010C | ICP        | Selenium                              |
| Aqueous/Solid | EPA 6010D, EPA 6010C | ICP        | Silica as SiO <sub>2</sub>            |
| Aqueous/Solid | EPA 6010D, EPA 6010C | ICP        | Silver                                |
| Aqueous/Solid | EPA 6010D, EPA 6010C | ICP        | Sodium                                |
| Aqueous/Solid | EPA 6010D, EPA 6010C | ICP        | Strontium                             |
| Aqueous/Solid | EPA 6010D, EPA 6010C | ICP        | Thallium                              |
| Aqueous/Solid | EPA 6010D, EPA 6010C | ICP        | Tin                                   |
| Aqueous/Solid | EPA 6010D, EPA 6010C | ICP        | Titanium                              |



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### ALS-Middletown

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*Accreditation is granted to the facility to perform the following testing:*

| <b>Matrix</b> | <b>Standard/Method</b> | <b>Technology</b>  | <b>Analyte</b>                         |
|---------------|------------------------|--------------------|--|
| Aqueous/Solid | EPA 6010D, EPA 6010C   | ICP                | Vanadium                               |
| Aqueous/Solid | EPA 6010D, EPA 6010C   | ICP                | Zinc                                   |
| Aqueous/Solid | EPA 6020B, EPA 6020A   | ICP-MS             | Aluminum                               |
| Aqueous/Solid | EPA 6020B, EPA 6020A   | ICP-MS             | Antimony                               |
| Aqueous/Solid | EPA 6020B, EPA 6020A   | ICP-MS             | Arsenic                                |
| Aqueous/Solid | EPA 6020B, EPA 6020A   | ICP-MS             | Barium                                 |
| Aqueous/Solid | EPA 6020B, EPA 6020A   | ICP-MS             | Beryllium                              |
| Aqueous/Solid | EPA 6020B, EPA 6020A   | ICP-MS             | Cadmium                                |
| Aqueous/Solid | EPA 6020B, EPA 6020A   | ICP-MS             | Calcium                                |
| Aqueous/Solid | EPA 6020B, EPA 6020A   | ICP-MS             | Calcium Hardness (calculation Ca)      |
| Aqueous/Solid | EPA 6020B, EPA 6020A   | ICP-MS             | Chromium                               |
| Aqueous/Solid | EPA 6020B, EPA 6020A   | ICP-MS             | Cobalt                                 |
| Aqueous/Solid | EPA 6020B, EPA 6020A   | ICP-MS             | Copper                                 |
| Aqueous/Solid | EPA 6020B, EPA 6020A   | ICP-MS             | Iron                                   |
| Aqueous/Solid | EPA 6020B, EPA 6020A   | ICP-MS             | Lead                                   |
| Aqueous/Solid | EPA 6020B, EPA 6020A   | ICP-MS             | Magnesium                              |
| Aqueous/Solid | EPA 6020B, EPA 6020A   | ICP-MS             | Manganese                              |
| Aqueous/Solid | EPA 6020B, EPA 6020A   | ICP-MS             | Molybdenum                             |
| Aqueous/Solid | EPA 6020B, EPA 6020A   | ICP-MS             | Mercury                                |
| Aqueous/Solid | EPA 6020B, EPA 6020A   | ICP-MS             | Nickel                                 |
| Aqueous/Solid | EPA 6020B, EPA 6020A   | ICP-MS             | Potassium                              |
| Aqueous/Solid | EPA 6020B, EPA 6020A   | ICP-MS             | Selenium                               |
| Aqueous/Solid | EPA 6020B, EPA 6020A   | ICP-MS             | Silver                                 |
| Aqueous/Solid | EPA 6020B, EPA 6020A   | ICP-MS             | Sodium                                 |
| Aqueous/Solid | EPA 6020B, EPA 6020A   | ICP-MS             | Strontium                              |
| Aqueous/Solid | EPA 6020B, EPA 6020A   | ICP-MS             | Thallium                               |
| Aqueous/Solid | EPA 6020B, EPA 6020A   | ICP-MS             | Tin                                    |
| Aqueous/Solid | EPA 6020B, EPA 6020A   | ICP-MS             | Titanium                               |
| Aqueous/Solid | EPA 6020B, EPA 6020A   | ICP-MS             | Total Hardness (calculation Ca and Mg) |
| Aqueous/Solid | EPA 6020B, EPA 6020A   | ICP-MS             | Uranium                                |
| Aqueous/Solid | EPA 6020B, EPA 6020A   | ICP-MS             | Vanadium                               |
| Aqueous/Solid | EPA 6020B, EPA 6020A   | ICP-MS             | Zinc                                   |
| Aqueous/Solid | EPA 7.3.3.2, EPA 9012B | Colorimetric       | Reactive Cyanide                       |
| Aqueous/Solid | EPA 7196A              | Spectrophotometric | Hexavalent Chromium                    |
| Aqueous/Solid | EPA 8015D              | GC/FID             | Oil Range Organics (ORO)               |
| Aqueous/Solid | EPA 8015D              | GC/FID             | TPH Diesel (DRO)                       |



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| Matrix        | Standard/Method | Technology | Analyte                          |
|---------------|-----------------|------------|----------------------------------|
| Aqueous/Solid | EPA 8015D       | GC/FID     | TPH Gasoline (GRO)               |
| Aqueous/Solid | EPA 8081B       | GC-ECD     | 4,4'-DDD                         |
| Aqueous/Solid | EPA 8081B       | GC-ECD     | 4,4'DDE                          |
| Aqueous/Solid | EPA 8081B       | GC-ECD     | 4,4'-DDT                         |
| Aqueous/Solid | EPA 8081B       | GC-ECD     | Aldrin (HHDN)                    |
| Aqueous/Solid | EPA 8081B       | GC-ECD     | alpha-BHC                        |
| Aqueous/Solid | EPA 8081B       | GC-ECD     | alpha-Chlordane                  |
| Aqueous/Solid | EPA 8081B       | GC-ECD     | beta-BHC                         |
| Aqueous/Solid | EPA 8081B       | GC-ECD     | Chlordane (tech.)                |
| Aqueous/Solid | EPA 8081B       | GC-ECD     | delta-BHC                        |
| Aqueous/Solid | EPA 8081B       | GC-ECD     | Dieldrin                         |
| Aqueous/Solid | EPA 8081B       | GC-ECD     | Endosulfan I                     |
| Aqueous/Solid | EPA 8081B       | GC-ECD     | Endosulfan II                    |
| Aqueous/Solid | EPA 8081B       | GC-ECD     | Endosulfan Sulfate               |
| Aqueous/Solid | EPA 8081B       | GC-ECD     | Endrin                           |
| Aqueous/Solid | EPA 8081B       | GC-ECD     | Endrin Aldehyde                  |
| Aqueous/Solid | EPA 8081B       | GC-ECD     | Endrin Ketone                    |
| Aqueous/Solid | EPA 8081B       | GC-ECD     | gamma-BHC (Lindane)              |
| Aqueous/Solid | EPA 8081B       | GC-ECD     | gamma-Chlordane                  |
| Aqueous/Solid | EPA 8081B       | GC-ECD     | Heptachlor                       |
| Aqueous/Solid | EPA 8081B       | GC-ECD     | Heptachlor Epoxide               |
| Aqueous/Solid | EPA 8081B       | GC-ECD     | Methoxychlor                     |
| Aqueous/Solid | EPA 8081B       | GC-ECD     | Mirex                            |
| Aqueous/Solid | EPA 8081B       | GC-ECD     | Toxaphene (Chlorinated Camphene) |
| Aqueous/Solid | EPA 8082A       | GC-ECD     | Aroclor-1016 (PCB-1016)          |
| Aqueous/Solid | EPA 8082A       | GC-ECD     | Aroclor-1221 (PCB-1221)          |
| Aqueous/Solid | EPA 8082A       | GC-ECD     | Aroclor-1232 (PCB-1232)          |
| Aqueous/Solid | EPA 8082A       | GC-ECD     | Aroclor-1242 (PCB-1242)          |
| Aqueous/Solid | EPA 8082A       | GC-ECD     | Aroclor-1248 (PCB-1248)          |
| Aqueous/Solid | EPA 8082A       | GC-ECD     | Aroclor-1254 (PCB-1254)          |
| Aqueous/Solid | EPA 8082A       | GC-ECD     | Aroclor-1260 (PCB-1260)          |
| Aqueous/Solid | EPA 8082A       | GC-ECD     | Aroclor-1262 (PCB-1262)          |
| Aqueous/Solid | EPA 8082A       | GC-ECD     | Aroclor-1268 (PCB-1268)          |
| Aqueous/Solid | EPA 8151A       | GC-ECD     | 2,4,5,-TP (Silvex)               |
| Aqueous/Solid | EPA 8151A       | GC-ECD     | 2,4,5-T                          |
| Aqueous/Solid | EPA 8151A       | GC-ECD     | 2,4-D                            |



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*Accreditation is granted to the facility to perform the following testing:*

| <b>Matrix</b> | <b>Standard/Method</b> | <b>Technology</b> | <b>Analyte</b>                            |
|---------------|------------------------|-------------------|---|
| Aqueous/Solid | EPA 8151A              | GC-ECD            | 2,4-DB                                    |
| Aqueous/Solid | EPA 8151A              | GC-ECD            | Dalapon                                   |
| Aqueous/Solid | EPA 8151A              | GC-ECD            | Dicamba                                   |
| Aqueous/Solid | EPA 8151A              | GC-ECD            | Dichloroprop                              |
| Aqueous/Solid | EPA 8151A              | GC-ECD            | Pentachlorophenol                         |
| Aqueous/Solid | EPA 8151A              | GC-ECD            | 4-Nitrophenol                             |
| Aqueous/Solid | EPA 8151A              | GC-ECD            | Dinoseb                                   |
| Aqueous/Solid | EPA 8151A              | GC-ECD            | MCPA                                      |
| Aqueous/Solid | EPA 8151A              | GC-ECD            | MCPP                                      |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | 1,1,1,2-Tetrachloroethane                 |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | 1,1,1-Trichloroethane                     |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | 1,1,2,2-Tetrachloroethane                 |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | 1,1,2-Trichloro-1,2,2-Trifluoroethane     |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | 1,1,2-Trichloroethane                     |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | 1,1-Dichloro-2-Propanone                  |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | 1,1-Dichloroethane                        |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | 1,1-Dichloroethene (1,1-Dichloroethylene) |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | 1,1-Dichloropropene                       |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | 1,2,3-Trichlorobenzene                    |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | 1,2,4-Trichlorobenzene                    |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | 1,2,4-Trimethylbenzene                    |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | 1,2-Dibromo-3-Chloropropane (DBCP)        |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | 1,2-Dichlorobenzene                       |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | 1,2-Dichloroethane                        |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | 1,2-Dichloroethene                        |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | 1,2-Dichloropropane                       |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | 1,3,5-Trimethylbenzene                    |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | 1,3-Dichlorobenzene                       |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | 1,3-Dichloropropane                       |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | 1,3-Dichloropropene                       |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | 1,4-Dichlorobenzene                       |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | 1-Chlorobutane                            |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | 1-Chlorohexane                            |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | 1-Propanol                                |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | 2,2-Dichloropropane                       |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | 2-Butanone (MEK)                          |



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## ISO/IEC 17025:2017 and DoD-ELAP

### ALS-Middletown

301 Fulling Mill Road, Middletown, PA 17057  
Contact Name: Susan Magness Phone: 717-944-5541

*Accreditation is granted to the facility to perform the following testing:*

| <b>Matrix</b> | <b>Standard/Method</b> | <b>Technology</b> | <b>Analyte</b>   |
|---------------|------------------------|-------------------|--|
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | 2-Chlorotoluene  |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | 2-Hexanone (MBK)   |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | 2-Nitropropane   |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | 2-Propanol (Isopropyl Alcohol)                           |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | 4-Isopropyltoluene                                       |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | 4-Methyl-2-Pentanone (MIBK)                              |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | Acetone  |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | Acetonitrile   |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | Acrolein   |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | Acrylonitrile  |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | Allyl Chloride (3-Chloropropene)                         |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | Benzene  |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | Benzyl Chloride  |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | Bromobenzene   |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | Bromochloromethane                                       |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | Bromodichloromethane                                     |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | Bromoform  |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | Bromomethane   |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | Carbon Disulfide   |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | Carbon Tetrachloride                                     |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | Chloroacetonitrile                                       |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | Chlorobenzene  |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | Chloroethane (Ethyl Chloride)                            |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | Chloroform   |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | Chloromethane (methyl chloride)                          |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | Chloroprene (2-Chloro-1,3-butadiene)                     |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | cis-1,2-Dichloroethene<br>Draf(cis-1,2-Dichloroethylene) |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | cis-1,3-Dichloropropene                                  |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | Cyclohexane  |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | Dibromochloromethane                                     |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | Dibromomethane   |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | Dichlorodifluoromethane                                  |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | Dichlorofluoromethane                                    |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | Diethyl Ether  |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | Diisobutylene (2,4,4-Trimethyl-1-pentene)                |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | Diisopropyl Ether (Propane)                              |



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| <b>Matrix</b> | <b>Standard/Method</b> | <b>Technology</b> | <b>Analyte</b>                         |
|---------------|------------------------|-------------------|--|
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | Ethyl Acetate                          |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | Ethyl Benzene                          |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | Ethyl Methacrylate                     |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | Ethyl-tert-butylether (ETBE)           |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | Heptane                                |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | Hexachlorobutadiene                    |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | Hexachloroethane                       |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | Hexane                                 |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | Idomethane (Methyl Iodide)             |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | Isobutyl Alcohol (2 methyl-1-propanol) |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | Isopropylbenzene (Cumene)              |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | m + p Xylene (1,3 + 1,4 Xylene)        |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | Methacrylonitrile                      |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | Methyl Acetate                         |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | Methyl Acrylate                        |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | Methyl Methacrylate                    |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | Methylcyclohexane                      |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | Methylene Chloride                     |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | Methyl-tert-butylether (MTBE)          |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | Naphthalene                            |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | n-Butylbenzene                         |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | Nitrobenzene                           |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | n-Propylbenzene                        |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | Octane                                 |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | o-Xylene (1,2-Xylene)                  |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | Pentachloroethane                      |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | Pentane                                |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | Propionitrile (Ethyl Cyanide)          |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | sec-Butylbenzene                       |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | Styrene                                |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | tert-Amyl Alcohol (2-methyl-2-but)     |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | tert-Amyl ethyl Ether                  |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | tert-Amyl Methyl Ether (TAME)          |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | tert-Butyl Alcohol                     |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | tert-Butylbenzene                      |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | Tetrachloroethene                      |



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| <b>Matrix</b> | <b>Standard/Method</b> | <b>Technology</b> | <b>Analyte</b>   |
|---------------|------------------------|-------------------|--|
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | Tetrahydrofuran (THF)                                    |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | Toluene  |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | trans 1,3-Dichloropropene                                |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | trans 1,4-Dichloro-2-butene                              |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | trans-1,2-Dichloroethene<br>(trans-1,2 Dichloroethylene) |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | Trichloroethene (Trichloroethylene)                      |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | Trichlorofluoromethane                                   |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | Vinyl Acetate  |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | Vinyl Chloride   |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS             | Xylenes-Total  |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS / GC-ECD    | 1,2,3-Trichloropropane                                   |
| Aqueous/Solid | EPA 8260C, EPA 8260D   | GC/MS / GC-ECD    | 1,2-Dibromoethane (EDB)                                  |
| Aqueous/Solid | EPA 8270D, EPA 8270E   | GC/MS             | 1,1-Biphenyl   |
| Aqueous/Solid | EPA 8270D, EPA 8270E   | GC/MS             | 1,2,4,5-Tetrachlorobezene                                |
| Aqueous/Solid | EPA 8270D, EPA 8270E   | GC/MS             | 1,2,4-Trichlorobenzene                                   |
| Aqueous/Solid | EPA 8270D, EPA 8270E   | GC/MS             | 1,2-Dichlorobenzene                                      |
| Aqueous/Solid | EPA 8270D, EPA 8270E   | GC/MS             | 1,2-Dinitrobenzene                                       |
| Aqueous/Solid | EPA 8270D, EPA 8270E   | GC/MS             | 1,2-Diphenylhydrazine                                    |
| Aqueous/Solid | EPA 8270D, EPA 8270E   | GC/MS             | 1,3-Dichlorobenzene                                      |
| Aqueous/Solid | EPA 8270D, EPA 8270E   | GC/MS             | 1,3-Dinitrobenzene (1,3-DNB)                             |
| Aqueous/Solid | EPA 8270D, EPA 8270E   | GC/MS             | 1,4-Dichlorobenzene                                      |
| Aqueous/Solid | EPA 8270D, EPA 8270E   | GC/MS             | 1,4-Dinitrobenzene                                       |
| Aqueous/Solid | EPA 8270D, EPA 8270E   | GC/MS             | 2,3,4,6-Tetrachlorophenol                                |
| Aqueous/Solid | EPA 8270D, EPA 8270E   | GC/MS             | 2,3,5,6-Tetrachlorophenol                                |
| Aqueous/Solid | EPA 8270D, EPA 8270E   | GC/MS             | 2,3-Dichloroaniline                                      |
| Aqueous/Solid | EPA 8270D, EPA 8270E   | GC/MS             | 2,4,5-Trichlorophenol                                    |
| Aqueous/Solid | EPA 8270D, EPA 8270E   | GC/MS             | 2,4,6-Trichlorophenol                                    |
| Aqueous/Solid | EPA 8270D, EPA 8270E   | GC/MS             | 2,4-Dichlorophenol                                       |
| Aqueous/Solid | EPA 8270D, EPA 8270E   | GC/MS             | 2,6-Dichlorophenol                                       |
| Aqueous/Solid | EPA 8270D, EPA 8270E   | GC/MS             | 2-Chloronaphthalene                                      |
| Aqueous/Solid | EPA 8270D, EPA 8270E   | GC/MS             | 2-Chlorophenol (o-Cresol)                                |
| Aqueous/Solid | EPA 8270D, EPA 8270E   | GC/MS             | 2-Methylphenol   |
| Aqueous/Solid | EPA 8270D, EPA 8270E   | GC/MS             | 2-Naphthylamine  |
| Aqueous/Solid | EPA 8270D, EPA 8270E   | GC/MS             | 2-Nitroaniline   |
| Aqueous/Solid | EPA 8270D, EPA 8270E   | GC/MS             | 2-Nitrophenol  |
| Aqueous/Solid | EPA 8270D, EPA 8270E   | GC/MS             | 2,4-Dimethylphenol                                       |





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|---------------|------------------------|-------------------|--|
| Aqueous/Solid | EPA 8270D, EPA 8270E   | GC/MS             | 2,4-Dinitrophenol  |
| Aqueous/Solid | EPA 8270D, EPA 8270E   | GC/MS             | 3&4-Methylphenol (m&p-Cresol)                              |
| Aqueous/Solid | EPA 8270D, EPA 8270E   | GC/MS             | 3-3'-Dichlorobenzidine                                     |
| Aqueous/Solid | EPA 8270D, EPA 8270E   | GC/MS             | 3-Nitroaniline   |
| Aqueous/Solid | EPA 8270D, EPA 8270E   | GC/MS             | 4,6-Dinitro-2-Methylphenol<br>(2-Methyl-4,6-dinitrophenol) |
| Aqueous/Solid | EPA 8270D, EPA 8270E   | GC/MS             | 4-Bromophenyl-Phenyl Ether                                 |
| Aqueous/Solid | EPA 8270D, EPA 8270E   | GC/MS             | 4-Chloro-3-Methylphenol                                    |
| Aqueous/Solid | EPA 8270D, EPA 8270E   | GC/MS             | 4-Chloroaniline  |
| Aqueous/Solid | EPA 8270D, EPA 8270E   | GC/MS             | 4-Chlorophenyl-Phenyl Ether                                |
| Aqueous/Solid | EPA 8270D, EPA 8270E   | GC/MS             | 4-Nitroaniline   |
| Aqueous/Solid | EPA 8270D, EPA 8270E   | GC/MS             | 4-Nitrophenol  |
| Aqueous/Solid | EPA 8270D, EPA 8270E   | GC/MS             | Acetophenone   |
| Aqueous/Solid | EPA 8270D, EPA 8270E   | GC/MS             | Alpha-Terpineol  |
| Aqueous/Solid | EPA 8270D, EPA 8270E   | GC/MS             | Aniline  |
| Aqueous/Solid | EPA 8270D, EPA 8270E   | GC/MS             | Atrazine   |
| Aqueous/Solid | EPA 8270D, EPA 8270E   | GC/MS             | Azobenzene   |
| Aqueous/Solid | EPA 8270D, EPA 8270E   | GC/MS             | Benzaldehyde   |
| Aqueous/Solid | EPA 8270D, EPA 8270E   | GC/MS             | Benzidine  |
| Aqueous/Solid | EPA 8270D, EPA 8270E   | GC/MS             | Benzoic Acid   |
| Aqueous/Solid | EPA 8270D, EPA 8270E   | GC/MS             | Benzyl Alcohol   |
| Aqueous/Solid | EPA 8270D, EPA 8270E   | GC/MS             | Bis(2-chloroethoxy) Ether                                  |
| Aqueous/Solid | EPA 8270D, EPA 8270E   | GC/MS             | Bis(2-chloroethoxy) Methane                                |
| Aqueous/Solid | EPA 8270D, EPA 8270E   | GC/MS             | Bis(2-Chloroisopropyl) Ether                               |
| Aqueous/Solid | EPA 8270D, EPA 8270E   | GC/MS             | Bis(2-Ethylhexyl) Adipate                                  |
| Aqueous/Solid | EPA 8270D, EPA 8270E   | GC/MS             | Bis(2-Ethylhexyl) Phthalate(DEHP)                          |
| Aqueous/Solid | EPA 8270D, EPA 8270E   | GC/MS             | Butyl Benzyl Phthalate                                     |
| Aqueous/Solid | EPA 8270D, EPA 8270E   | GC/MS             | Caprolactam  |
| Aqueous/Solid | EPA 8270D, EPA 8270E   | GC/MS             | Carbazole  |
| Aqueous/Solid | EPA 8270D, EPA 8270E   | GC/MS             | Dibenzofuran   |
| Aqueous/Solid | EPA 8270D, EPA 8270E   | GC/MS             | Diethyl Phthalate  |
| Aqueous/Solid | EPA 8270D, EPA 8270E   | GC/MS             | Dimethoate   |
| Aqueous/Solid | EPA 8270D, EPA 8270E   | GC/MS             | Dimethyl Phthalate   |
| Aqueous/Solid | EPA 8270D, EPA 8270E   | GC/MS             | Di-n-Butyl Phthalate                                       |
| Aqueous/Solid | EPA 8270D, EPA 8270E   | GC/MS             | Di-n-Octyl Phthalate                                       |
| Aqueous/Solid | EPA 8270D, EPA 8270E   | GC/MS             | Dioxin Screen (2,3,7,8-TCDD)                               |
| Aqueous/Solid | EPA 8270D, EPA 8270E   | GC/MS             | Diphenylamine  |



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|---------------|--|-------------------|-----------------------------------|
| Aqueous/Solid | EPA 8270D, EPA 8270E                               | GC/MS             | Hexachlorethane                   |
| Aqueous/Solid | EPA 8270D, EPA 8270E                               | GC/MS             | Hexachlorobutadiene               |
| Aqueous/Solid | EPA 8270D, EPA 8270E                               | GC/MS             | Hexachlorocyclopentadiene         |
| Aqueous/Solid | EPA 8270D, EPA 8270E                               | GC/MS             | Isophorone                        |
| Aqueous/Solid | EPA 8270D, EPA 8270E                               | GC/MS             | n-Decane                          |
| Aqueous/Solid | EPA 8270D, EPA 8270E                               | GC/MS             | n-Heptadecane                     |
| Aqueous/Solid | EPA 8270D, EPA 8270E                               | GC/MS             | Nitrobenzene                      |
| Aqueous/Solid | EPA 8270D, EPA 8270E                               | GC/MS             | n-Nitrosodiethylamine             |
| Aqueous/Solid | EPA 8270D, EPA 8270E                               | GC/MS             | n-Nitrosodimethylamine            |
| Aqueous/Solid | EPA 8270D, EPA 8270E                               | GC/MS             | n-Nitrosodiphenylamine            |
| Aqueous/Solid | EPA 8270D, EPA 8270E                               | GC/MS             | n-Nitroso-di-n-Butylamine         |
| Aqueous/Solid | EPA 8270D, EPA 8270E                               | GC/MS             | n-Nitrosodi-n-Propylamine         |
| Aqueous/Solid | EPA 8270D, EPA 8270E                               | GC/MS             | n-Nitrosopyrrolidine              |
| Aqueous/Solid | EPA 8270D, EPA 8270E                               | GC/MS             | n-Octadecane                      |
| Aqueous/Solid | EPA 8270D, EPA 8270E                               | GC/MS             | Pentachlorobenzene                |
| Aqueous/Solid | EPA 8270D, EPA 8270E                               | GC/MS             | Pentachlorophenol                 |
| Aqueous/Solid | EPA 8270D, EPA 8270E                               | GC/MS             | Phenol                            |
| Aqueous/Solid | EPA 8270D, EPA 8270E                               | GC/MS             | Pyridine                          |
| Aqueous/Solid | EPA 8270D, EPA 8270E, EPA 8270D SIM, EPA 8270E SIM | GC/MS/SIM         | 1-Methylnaphthalene               |
| Aqueous/Solid | EPA 8270D, EPA 8270E, EPA 8270D SIM, EPA 8270E SIM | GC/MS/SIM         | 1,4-Dioxane (1,4-Diethyleneoxide) |
| Aqueous/Solid | EPA 8270D, EPA 8270E, EPA 8270D SIM, EPA 8270E SIM | GC/MS/SIM         | 2-Methylnaphthalene               |
| Aqueous/Solid | EPA 8270D, EPA 8270E, EPA 8270D SIM, EPA 8270E SIM | GC/MS/SIM         | 2,4-Dinitrotoluene (2,4-DNT)      |
| Aqueous/Solid | EPA 8270D, EPA 8270E, EPA 8270D SIM, EPA 8270E SIM | GC/MS/SIM         | 2,6-Dinitrotoluene (2,6-DNT)      |
| Aqueous/Solid | EPA 8270D, EPA 8270E, EPA 8270D SIM, EPA 8270E SIM | GC/MS/SIM         | Acenaphthene                      |
| Aqueous/Solid | EPA 8270D, EPA 8270E, EPA 8270D SIM, EPA 8270E SIM | GC/MS/SIM         | Acenaphthylene                    |
| Aqueous/Solid | EPA 8270D, EPA 8270E, EPA 8270D SIM, EPA 8270E SIM | GC/MS/SIM         | Anthracene                        |
| Aqueous/Solid | EPA 8270D, EPA 8270E, EPA 8270D SIM, EPA 8270E SIM | GC/MS/SIM         | Benzo (k) Fluoranthene            |
| Aqueous/Solid | EPA 8270D, EPA 8270E, EPA 8270D SIM, EPA 8270E SIM | GC/MS/SIM         | Benzo(a)Anthracene                |
| Aqueous/Solid | EPA 8270D, EPA 8270E, EPA 8270D SIM, EPA 8270E SIM | GC/MS/SIM         | Benzo(a)Pyrene                    |



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|---------------|--|-------------------|-----------------------------------|
| Aqueous/Solid | EPA 8270D, EPA 8270E, EPA 8270D SIM, EPA 8270E SIM | GC/MS/SIM         | Benzo(b)Fluoranthene              |
| Aqueous/Solid | EPA 8270D, EPA 8270E, EPA 8270D SIM, EPA 8270E SIM | GC/MS/SIM         | Benzo(ghi)Perylene                |
| Aqueous/Solid | EPA 8270D, EPA 8270E, EPA 8270D SIM, EPA 8270E SIM | GC/MS/SIM         | Bis(2-Chlorethyl) Ether           |
| Aqueous/Solid | EPA 8270D, EPA 8270E, EPA 8270D SIM, EPA 8270E SIM | GC/MS/SIM         | Chrysene                          |
| Aqueous/Solid | EPA 8270D, EPA 8270E, EPA 8270D SIM, EPA 8270E SIM | GC/MS/SIM         | Dibenzo(a,h)Anthracene            |
| Aqueous/Solid | EPA 8270D, EPA 8270E, EPA 8270D SIM, EPA 8270E SIM | GC/MS/SIM         | Fluoranthene                      |
| Aqueous/Solid | EPA 8270D, EPA 8270E, EPA 8270D SIM, EPA 8270E SIM | GC/MS/SIM         | Fluorene                          |
| Aqueous/Solid | EPA 8270D, EPA 8270E, EPA 8270D SIM, EPA 8270E SIM | GC/MS/SIM         | Hexachlorobenzene                 |
| Aqueous/Solid | EPA 8270D, EPA 8270E, EPA 8270D SIM, EPA 8270E SIM | GC/MS/SIM         | Indeno (1,2,3-CD) Pyrene          |
| Aqueous/Solid | EPA 8270D, EPA 8270E, EPA 8270D SIM, EPA 8270E SIM | GC/MS/SIM         | Naphthalene                       |
| Aqueous/Solid | EPA 8270D, EPA 8270E, EPA 8270D SIM, EPA 8270E SIM | GC/MS/SIM         | Phenanthrene                      |
| Aqueous/Solid | EPA 8270D, EPA 8270E, EPA 8270D SIM, EPA 8270E SIM | GC/MS/SIM         | Pyrene                            |
| Aqueous/Solid | EPA 8330B  | HPLC              | 1,3,5-Trinitrobenzene (1,3,5-TNB) |
| Aqueous/Solid | EPA 8330B  | HPLC              | 1,3-Dinitrobenzene (1,3-DNB)      |
| Aqueous/Solid | EPA 8330B  | HPLC              | 2,4,6-Trinitrotoluene (2,4,6-TNT) |
| Aqueous/Solid | EPA 8330B  | HPLC              | 2,4-Dinitrotoluene (2,4-DNT)      |
| Aqueous/Solid | EPA 8330B  | HPLC              | 2,6-Dinitrotoluene (2,6-DNT)      |
| Aqueous/Solid | EPA 8330B  | HPLC              | 2-Amino-4,6-Dinitrotoluene        |
| Aqueous/Solid | EPA 8330B  | HPLC              | 2-Nitrotoluene                    |
| Aqueous/Solid | EPA 8330B  | HPLC              | 3,5-Dinitroaniline                |
| Aqueous/Solid | EPA 8330B  | HPLC              | 3-Nitrotoluene                    |
| Aqueous/Solid | EPA 8330B  | HPLC              | 4-Amino-2,6-Dinitrotoluene        |
| Aqueous/Solid | EPA 8330B  | HPLC              | 4-Nitrotoluene                    |
| Aqueous/Solid | EPA 8330B  | HPLC              | HMX                               |
| Aqueous/Solid | EPA 8330B  | HPLC              | Nitrobenzene                      |
| Aqueous/Solid | EPA 8330B  | HPLC              | Nitroglycerin                     |
| Aqueous/Solid | EPA 8330B  | HPLC              | PETN                              |
| Aqueous/Solid | EPA 8330B  | HPLC              | RDX                               |
| Aqueous/Solid | EPA 8330B  | HPLC              | Tetryl                            |



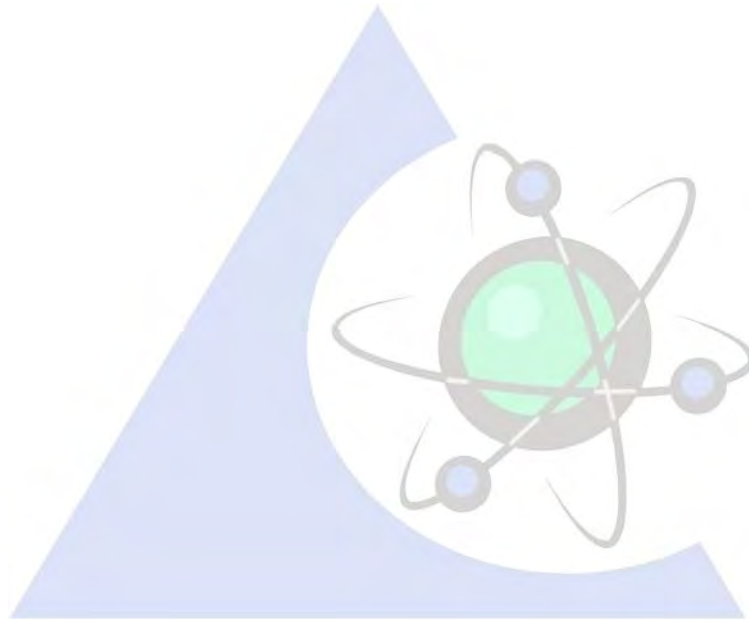
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| <b>Matrix</b> | <b>Standard/Method</b> | <b>Technology</b> | <b>Analyte</b>                         |
|---------------|------------------------|-------------------|--|
| Aqueous/Solid | EPA 9012B              | Colorimetric      | Total Cyanide                          |
| Aqueous/Solid | EPA 9020B/9023         | Combustion        | Total Organic Halides                  |
| Aqueous/Solid | EPA 9066               | Colorimetric      | Phenolic Substances                    |
| Aqueous/Solid | SM 2340B               | ICP/ICP-MS        | Calcium Hardness (calculation Ca)      |
| Aqueous/Solid | SM 2340B               | ICP/ICP-MS        | Total Hardness (calculation Ca and Mg) |
| Aqueous/Solid | SW846 7.3.4.2          | Colorimetric      | Reactive Sulfide                       |





# Certificate of Accreditation: Supplement

ISO/IEC 17025:2017 and DoD-ELAP

## ALS-Middletown

301 Fulling Mill Road, Middletown, PA 17057  
Contact Name: Susan Magness Phone: 717-944-5541

*Accreditation is granted to the facility to perform the following testing:*

| Matrix        | Standard/Method       | Technology               | Analyte                         |
|---------------|-----------------------|--------------------------|---------------------------------|
| Aqueous       | EPA 3510C             | Sep Funnel Extraction    | Semivolatiles, pesticides, PCBs |
| Aqueous       | EPA 5030C & EPA 5030B | Purge and Trap           | Volatile Organics Prep          |
| Aqueous       | EPA 3511              | Micro Extraction         | Semivolatiles, pesticides, PCBs |
| Solid         | EPA 1030              | Ignition                 | Ignitability                    |
| Solid         | EPA 3050B             | Acid Digestion Hot Plate | Metals                          |
| Solid         | EPA 3535              | Solid Phase Extraction   | Prep Method (Explosives)        |
| Solid         | EPA 3546              | Microwave Extraction     | Semivolatiles, pesticides, PCBs |
| Solid         | EPA 3580A             | Waste Dilution           | Semivolatiles, pesticides, PCBs |
| Solid         | EPA 5035A             | P&T closed               | Volatiles                       |
| Aqueous/Solid | EPA 1010A             | Pensky Martin            | Flashpoint                      |
| Aqueous/Solid | EPA 1311              | TCLP                     | Physical Extraction             |
| Aqueous/Solid | EPA 1311              | TCLP ZHE                 | Physical Extraction             |
| Aqueous/Solid | EPA 1312              | SPLP                     | Physical Extraction             |
| Aqueous/Solid | ASTM D3987            | ASTM Leachate Extraction | Physical Extraction             |
| Aqueous/Solid | EPA 3015A, EPA 3051A  | Acid Digestion Microwave | Metals                          |
| Aqueous/Solid | EPA 3620B             | Florisil Clean-Up        | Semivolatiles, pesticides, PCBs |
| Aqueous/Solid | EPA 3660B             | Sulfur Cleanup           | PCB's                           |
| Aqueous/Solid | EPA 3665A             | Sulfuric Acid Cleanup    | PCBs                            |
| Aqueous/Solid | SM 4500 Norg B+C      | Kjeldahl Method          | Total Kjeldahl Nitrogen (TKN)   |

**APPENDIX C**  
**OHARNG ENVIRONMENTAL PROCEDURES AND CJAG WASTE MANAGEMENT**  
**GUIDELINES**

**OHARNG Environmental Procedures**  
**Restoration Program Specific Version**  
**15 July 2022**

**1. General**

- 1.1. These Environmental Procedures identify environmental compliance requirements for Ohio Army National Guard (OHARNG) projects. The Environmental Procedures are intentionally broad in scope to ensure contractors have information needed to price and complete work knowing all the requirements. Contractors conducting work not specified in these procedures are considered to be in compliance with no specific action required.
- 1.2. The Contractor must comply with all applicable local, state, and federal environmental requirements to include applicable Army and OHARNG regulations. This includes, but is not limited to, the proper characterization, management and disposal of wastes; proper storage, use and transportation of hazardous materials; spill prevention and clean up; obtaining proper permits and submitting proper notifications as applicable to the work being conducted; and protection of surface water and natural resources.
- 1.3. The Contractor (to include subcontractors) will not correspond with any regulatory agency regarding an OHARNG project without approval of the OHARNG. This includes meetings, phone calls, emails, permit/application submittals, or other written or verbal communications. The OHARNG will review and approve all correspondence, to include permit applications and notifications, before they are sent to a regulatory agency to include but not limited to the federal or Ohio Environmental Protection Agency (EPA), the US Fish and Wildlife Service, the Ohio Historic Preservation Office, the US Army Corps of Engineers, County Engineer offices, and local Soil and Water Conservation offices.
- 1.4. The Contractor is responsible for paying all fees and acquiring all applicable permits or regulatory approvals associated with the work they are performing. Depending upon the permit/notification, it may need to be issued in the OHARNG's name. Coordination will be done with the OHARNG to determine this and as applicable the Contractor will complete the application/notification for OHARNG signature and submit the application and associated fees. All permit submittals will be coordinated, reviewed and approved by the OHARNG before submittal regardless of who signs the application.
- 1.5. Executive Order (EO) 13693, *Planning for Federal Sustainability in the Next Decade*, establishes a federal integrated strategy toward sustainability including efforts to “eliminate waste, recycle, and prevent pollution.” Additionally, EO 13693 establishes targets to divert at least 50% of non-hazardous solid waste, including construction and demolition debris, from the waste stream. The Contractor will utilize the most current waste prevention, waste diversion (salvage, reuse, recycle), and waste minimization guidelines to ensure this target is met.

**2. Emergency Spill Response and Petroleum, Oil, and Lubricant (POL) Management**

- 2.1. The Contractor must comply with the local OHARNG Spill Contingency Plan and implement appropriate measure to prevent spills/releases to the environment and to respond, notify, and report when a release occurs. The Contractor is required to inspect equipment, fuel, and hazardous materials storage areas to ensure there are no leaks or releases. The Contractor is responsible for implementing spill response and cleanup of all spills/leaks within the project area immediately upon discovery. Clean up must be satisfactory to the OHARNG and/or the Ohio EPA or other applicable regulatory agency. Wastes will be managed as described in the waste management section of these Environmental Procedures.

- 2.2. The OHARNG will be notified of all spills/releases. Incidental releases (petroleum product less than 25 gallons, a release that stays of OHARNG property, not in water, and not a reportable quantity) will be responded to by the contractor and the OHARNG notified by telephone within 2-hours. Any spill of petroleum products over 25 gallons, a spill that goes off of OHARNG property, a spill of any amount into a body of water, or a reportable quantity release must be reported to the OHARNG **immediately**. All spills/releases must be reported in writing on the OHARNG Spill Report Form (Attachment 1) and submitted to the OHARNG within 24 hours. The Contractor will be provided with a copy of the OHARNG Spill Report Form and a point of contact for submitting such reports/notifications.
- 2.3. The Contractor is required to have a spill kit with appropriate absorbents, plastic bags, drums, shovels, and other supplies and equipment suitable to clean up any releases or spills from their activities.
- 2.4. Contractor stationary fuel pods must be in/on secondary containment with a storage capacity of 110% of the container. A double walled container is sufficient secondary containment. Releases of rain water from secondary containment can only be initiated after approval from the OHARNG Environmental Office and after inspection and verification/absorption of all petroleum, oil, and lubricants (POL) and/or other contaminants in the water by the Contractor. Discharge of POL or other contaminants/pollutants from secondary containment is not permitted. At minimum, discharging through an oil only boom/filter or an oil absorption filter bag is required. If the contractor cannot show proof of lack of contaminants, the water will need to be sampled and characterize to determine the proper discharge/disposal method. The contractor will document all discharges/disposal from secondary containments to include name and signature of person conducting discharge/disposal, date of discharge/disposal, volume discharged/disposed, method of discharge/disposal, method of determining water was clean to discharge (analytical result if applicable), and a statement that any discharge did not contain POL or other contaminants. Discharges from secondary containment will be addressed in the Waste Management Section of the Work Plan.
- 2.5. Individual fuel/POL cans (5 gallon or less) and hazardous materials used on job sites must be stored in a manner that prevents release to the environment. This will usually involve a covered storage area with appropriate secondary containment that protects them from rain and accidental damage. Chainsaw fuel and bar oil on logging jobs can be left at the tree felling site in the woods or brought out to the log landing each day.

### **3. Erosion Control, Storm Water and Other Surface Water Management**

- 3.1. For all projects, regardless of the disturbance acreage, the Contractor will use all methods appropriate and required to prevent soil from leaving the project site either by wind, water, or on vehicles and equipment. Silt fence and other temporary soil run off detention methods will be used as needed. Spoil piles and disturbed areas will be managed in accordance with the stipulations outlined in the Ohio EPA General National Pollutant Discharge Elimination system (NPDES) Storm Water Construction Permit and the most current version of the Ohio Department of Natural Resources' Rainwater and Land Development Manual; Ohio's Standards for Storm Water Management, Land Development, and Urban Stream Protection (available on-line). The site must be seeded with a temporary seed mix if left idle for the designated period of time. The project site will be closed out by preparing the soil as a seed bed and seeding and mulching with the appropriate seed mix. Temporary erosion control measures (silt fence) will be removed by the contractor once vegetation has been established and soil on the project area is stabilized.
- 3.2. Native seed mixes will be used and compatible with maintenance requirements. An appropriate turf grass mix will be used for high traffic and high maintenance areas. Annual ryegrass can be added to mixes to provide quick cover. For late season seeding, winter wheat/rye can be added to provide a quick cover. Contractors will use the approved grass seed mixes listed below or propose alternative seed mixes. The OHARNG Environmental Office must approve all seed mixes. The seed mixes that will be used will be identified in the Storm Water Management, Sediment, and Erosion Controls section of the Environmental Work Plan.



The following seed is approved for establishment of temporary cover. Species can be mixed if/as necessary for specific application.

- Annual Rye Grass (*Lolium multiflorum*), broadcast @ 40 lbs/acre, drilled at 30 lbs/acre, mulch with a minimum of 3 bales of straw per 1000 square feet. Use mulch netting or fiber mat on slopes greater than 6%. Grows quickly but of short duration. Good growth during hot summer period.
- Winter Rye (*Secale cereal*) broadcast @ 112 lbs/acre, drilled at 80 lbs/acre, mulch with a minimum of 3 bales of straw per 1000 square feet. Use mulch netting or fiber mat on slopes greater than 6%. Good for fall seeding. Select a hardy variety.
- Oats (*Avena sativa*) broadcast @ 80 lbs/acre, drilled at 65 lbs/acre, mulch with a minimum of 3 bales of straw per 1000 square feet. Use mulch netting or fiber mat on slopes greater than 6%. Best for spring seeding. Fall seeding will die when winter sets in.
- 40% Nodding Wild Rye (*Elymus canadensis*), 40% Virginia wild rye (*Elymus virginicus*), 15% Partridge Pea (*Chamaecrista fasciculata*), and 5% Black-eyed Susan (*Rudbeckia hirta*), broadcast @ 35 lbs/acre, drilled at 25 lbs/acre, mulch with a minimum of 3 bales of straw per 1000 square feet. Add 20 lbs/acre of Annual Rye Grass (*Lolium multiflorum*) to the broadcast mix and 15 lbs/acre to the drilled mix. Good for areas that will remain unfinished indefinitely.
- 23.5% Nodding Wild Rye (*Elymus canadensis*), 25% Virginia wild rye (*Elymus virginicus*), 18.75% Partridge Pea (*Chamaecrista fasciculata*), 1.5% Black-eyed Susan (*Rudbeckia hirta*), and 31.25% Little Bluestem (*Schizachyrium scoparium*), broadcast @ 25 lbs/acre, drilled at 18 lbs/acre, mulch with a minimum of 3 bales of straw per 1000 square feet. Add 20 lbs/acre of Annual Rye Grass (*Lolium multiflorum*) to the broadcast mix and 15 lbs/acre to the drilled mix. Good for late season (after 15 September) quick temporary cover.

The following seed is approved for establishment of permanent cover in areas that are not maintained as turf grass or high foot traffic areas such as range impact areas that are not regularly mowed, roadsides outside of cantonment areas, fence lines outside of cantonment areas, etc. Substitution with similar species is permitted but must be approved by the OHARNG Environmental Office.

- 23.5% Nodding Wild Rye (*Elymus canadensis*), 25% Virginia wild rye (*Elymus virginicus*), 22% Little Bluestem (*Schizachyrium scoparium*), 18.75% Partridge Pea (*Chamaecrista fasciculata*), 7.75% Thin-leaved Coneflower (*Rudbeckia triloba*), 1.5% Brown fox sedge (*Carex vulpinoidea*), 1.5% Black-eyed Susan (*Rudbeckia hirta*), broadcast @ 18 lbs/acre, drilled at 12 lbs/acre, mulch with a minimum of 3 bales of straw per 1000 square feet. Add 20 lbs/acre of Annual Rye Grass (*Lolium multiflorum*) to the broadcast mix and 15 lbs/acre to the drilled mix. This mix is for use in open areas that receive good sunlight.
- 31% Deertongue (*Dichanthelium clandestinum*), 25% Virginia wild rye (*Elymus virginicus*), 25% Nodding Wild Rye (*Elymus canadensis*), 10% Big Bluestem (*Andropogon gerardii*), and 9% Side-Oats Grama (*Bouteloua curtipendula*), broadcast @ 30 lbs/acre, drilled at 20 lbs/acre, mulch with a minimum of 3 bales of straw per 1000 square feet. Add 20 lbs/acre of Annual Rye Grass (*Lolium multiflorum*) to the broadcast mix and 15 lbs/acre to the drilled mix. This mix is for use in shaded areas, partial sun, and openings in the forest canopy.

Areas that are maintained with regular mowing during the growing season and receive heavy foot traffic will be seeded with an appropriate turf grass mix. Such areas include lawns in cantonment areas, parade fields, and range operational control areas (ROCAs). Turf grass mixes of Kentucky blue grass, fine fescue, and perennial ryegrass using varieties appropriate for the specific application will be identified by the contractor and reviewed and approved by the OHARNG prior to application.

Contractors will provide draught resistant varieties in seed mixes. A potential mix and varieties are as follows.

- 40% Kentucky Bluegrass (applicable varieties), 30% Perennial Ryegrasses (applicable varieties), 20% Hard Fescue (applicable varieties), and 10% Creeping Red Fescue (applicable varieties)

- 3.3. For projects that disturb one (1) or more acres of ground (or otherwise meet the Ohio EPA criteria for permit coverage), the contractor is required to have a Storm Water Pollution Prevention Plan (SWP3) and should be included in the Work Plan. The Contractor is responsible for the development of Erosion and Storm Water Control (E&S) Plans and Details and the subsequent development of a Storm Water Pollution Prevention Plan (SWP3) in accordance with the requirements contained in the Ohio EPA General NPDES Permit for Storm Water Discharges Associated with Construction Activity. The Contractor will ensure that E&S controls and permanent post construction / water quality controls comply with Section 438 of the Energy Independence and Security Act of 2007 (EISA) and the latest version of the Ohio Department of Natural Resources publication titled **"Rainwater and Land Development - Ohio's Standards for Storm Water Management and Land Development and Urban Stream Protection"** (available on-line). Most CERCLA projects do not require coverage under a applicable stormwater permit but all substantive requirements of the Ohio EPA General Permit for Construction Activities must be followed.
- 3.4. The Contractor will implement the SWP3 and conduct all inspections and maintain storm water/erosion controls in accordance with the SWP3 and Ohio EPA requirements. The Contractor will use the inspection checklist for storm water controls in the SWP3 or the Ohio EPA inspection checklist from the General Permit and will complete and maintain signed inspections on site in the SWP3 binder. Copies of weekly/post storm event inspections will be provided to the OHARNG project manager and Environmental Office monthly. The Contractor will notify the OHARNG project manager and Environmental Office immediately if there is a storm water control failure and off site discharge from the project area. Any proposed changes to the SWP3 must be coordinated with and approved by the OHARNG. The person conducting the stormwater inspections must be competent and well versed and have experience in stormwater management and inspections and proof of experience must be provided in the SWP3. The Contractor must keep a corrective action log during the project and document all deficiencies and corrective actions.
- 3.5. The Contractor will use best management practices or whatever means necessary to prevent contamination of storm water due to runoff from wastes, debris piles, fuel tanks, materials, equipment, and other storage/materials on the project site.
- 3.6. The Contractor is not permitted to disturb or fill any wetlands, streams, or other surface waters while performing tasks within the scope of work unless such disturbance or fill is specifically identified as a task in the scope and applicable permits and authorizations have been obtained. The Contractor will maintain a 30 foot undisturbed buffer around wetlands and depressional areas that hold water and will keep all equipment, materials, vehicles, debris, waste, and personnel out of this buffer and prevent discharges of any type (chemical or soil) from entering such areas.
- 3.7. The OHARNG Environmental Office must approve all dewatering activities. Dewatering will be addressed in the waste management section or dewatering section of the Work Plan if applicable to the project. Standing water must be characterized to determine if it is regulated before dewatering procedures are implemented. Characterization may be possible by generator knowledge or may require sampling and analysis. At minimum, discharges must meet water quality standards identified in Ohio Administrative Code 3745-1 and Ohio EPA requirements. If able to be discharged, at minimum, water must go through an oil absorption and/or an activated charcoal, and/or a sediment filter bag as appropriate, prior to being discharged. Discharge will be done in a vegetated upland area that drains away from the work site unless otherwise specified in the scope of work or authorized by the OHARNG Environmental Office. Discharge will be done so as to

allow the discharge to filter through dense groundcover vegetation. The discharge hose will be set on a piece of plywood or rubber mat to disperse the water and prevent a concentrated discharge that can cut and erode soil. Direct discharge to a stream, pond, wetland, ditch or other body of water or conveyance is not permitted. If water does not meet state standards or approval for discharge, then it must be properly transported and disposed.

#### **4. Waste, Recycling and Hazardous Waste**

- 4.1.** The OHARNG is the generator of all waste including wastes generated by any Contractor working on OHARNG projects of facilities. The Contractor is responsible for minimizing all waste generation from OHARNG projects and for properly managing all wastes generated from OHARNG projects in accordance with the Ohio Army National Guard Waste Management Guidelines (attached). Waste will be managed in accordance with all applicable Federal, State, U.S. Army, NGB and OHARNG regulations and requirements. OHARNG sites may have specific hazardous waste information / management guidelines that must be followed to ensure compliance with applicable regulations and requirements. The contractor must include all waste management in their Work Plan and coordinate all waste generation and management activities with the OHARNG Environmental Office prior to beginning work.
- 4.2.** The Contractor is responsible for characterizing all waste generated from a project and notifying the OHARNG of all waste streams, management methodology, and disposal methods prior to beginning work. If an alternative practice is available that will eliminate, recycle or minimize waste generation, the contractor is required to implement such practice.
- 4.3.** The Contractor is responsible for properly labeling, storing, and inspecting non-hazardous, special, and hazardous waste stored at the project site pending disposal. All containers on the project site will be labeled as to the contents, whether waste or otherwise. All waste stored on site must be inspected weekly using the Ohio Army National Guard Weekly Non-Hazardous and Hazardous Waste Inspection/Inventory Sheet (attached).
- 4.4.** The Contractor is responsible for properly completing all waste profiles, waste manifests, and shipping documents (hazardous, special and non-hazardous waste). Such documents will be reviewed, approved, and signed by the OHARNG Environmental Office. No waste will leave the site until the shipping documents are reviewed, approved and signed by the OHARNG Environmental Office. The Contractor is responsible for weighing and documenting all waste material (regulated, diverted, landfilled) leaving the site. The Contractor will complete a Construction/Demolition Diversion and Waste Disposal Form (attached) or other waste tracker and provide supporting documentation (weight tickets, manifests etc.) to the OHARNG at the end of the project. Contractors may be asked to provide monthly waste totals for waste total reporting and for monthly Ohio EPA update reports.
- 4.5.** The Contractor is required to recycle materials when possible and practicable. Recycled materials must be tracked using the Construction/Demolition Diversion and Waste Disposal Form (attached). Materials that cannot be recycled or repurposed must be properly disposed at an appropriate waste handling facility.
- 4.6.** The Contractor is required to utilize qualified Defense Logistics Agency (DLA), Defense Marketing and Reutilization Organization (DRMO) waste haulers and Treatment, Storage, and Disposal Facilities (TSDFs) for hazardous waste. The current qualified waste hauler and TSDF list can be viewed by following the “Qualified Facilities” and “Qualified Transporters” links found on the DLA Disposition Services’ Hazardous Waste Disposal Homepage, <http://www.dla.mil/DispositionServices/Offers/Disposal/HazardousWaste/HazWasteDisposal.aspx>.

- 4.7. Gray water, vehicle wash water, and other liquid wastes (to include extracted groundwater and water from dewatering) generated by the Contractor will be managed in accordance with the waste management guidance in this section and applicable federal, state, and local regulations. Liquid waste will not be discharged to the land surface, surface water, storm drain/ditch, or a sanitary sewer unless properly characterized and done in accordance with applicable laws and applicable permit conditions. Liquid waste will be characterized and proper management and disposal methods identified and implemented. Guidance on construction site dewatering is provided above.

## 5. Asbestos

- 5.1. All asbestos activities, including any disturbance or removal, must be conducted in accordance with applicable Federal, State, and local regulations. Asbestos must be properly handled, removed, containerized, and disposed of in accordance with applicable Federal, State, and local regulations. The Contractor will complete a Construction/Demolition Diversion and Waste Disposal Form (attached) and provide supporting documentation (weight tickets, manifests etc.) for all wastes generated to the OHARNG at the end of the project. Asbestos removal methods and disposal operations will be detailed in the Work Plan to be reviewed and approved by the OHARNG Environmental Office prior to the start of work activities. All abatement activities will be conducted by a licensed abatement contractor in accordance with applicable Federal, State, and local regulations and guidance. All asbestos wastes generated as part of demolition activities and/or abatement activities must be disposed of in a licensed asbestos landfill. Disposal manifests and/or Regulated Asbestos Material Waste Shipment Records for all asbestos waste must also be signed and approved by an OHARNG Environmental Office representative or a representative designated by the Environmental Office prior to shipment from the project site or OHARNG facility.
- 5.2. As required for asbestos projects, the Contractor is required to submit a completed Ohio Environmental Protection Agency (EPA) Notification of Demolition and Renovation Form to the OHARNG for review and approval 30 days prior to commencement of asbestos work. Upon receipt of written approval from the OHARNG Environmental Office, the approved notification and associated notification fee must be submitted to the Ohio EPA at least 10 business days prior to commencement of work. Under no circumstances is the Contractor to submit any correspondence to the Ohio EPA or any other regulatory agency without written approval from the OHARNG. Copies of all correspondence from the Ohio EPA or any other regulatory agency must be submitted to the OHARNG Environmental Office upon receipt. If requested, the Contractor must provide a copy of the asbestos survey to the regulatory agency.
- 5.3. The Contractor is required to develop and submit a Work Plan that includes asbestos abatement to the OHARNG for review and approval prior to the commencement of work. The work plan will specify the procedures to be utilized by the contractor to ensure compliance with all applicable State and Federal asbestos regulations. The work plan will address the abatement techniques to be used, the safety precautions to be taken, and emergency procedures to be implemented in the event of inadvertent exposure. Proof/copies of proper and current contractor licensure must also be included in the work plan. The work plan will also address how the asbestos waste is to be handled, stored, transported, and disposed of in accordance with all applicable regulations. Site clearance procedures must be addressed in the plan if applicable. The plan must contain a detailed description of the project activities, including the amount of asbestos to be abated, the exact location and type of asbestos, and whether or not a contained work site will be established as required by 29 CFR Part 1926.1101.
- 5.4. Asbestos contractors must be properly licensed in accordance with applicable local, State, and Federal regulations. Only licensed contractors approved and licensed through the Ohio EPA will be utilized on OHARNG asbestos abatement projects. The contractor will show proof of license and will maintain appropriate paperwork on the work site at all times. Work is to be performed in accordance with 29 CFR 1926.1101 (OSHA Asbestos Construction Standard) and 40 CFR Part 61 (Asbestos NESHAPS) in addition to accepted industry work procedures and other applicable local, State, and

Federal regulations. The onsite Superintendent must be a 'competent person' as defined in 29 CFR 1926.1101(b) and must be onsite full time during the project.

- 5.5.** The Contractor is responsible for managing all asbestos waste generated during the project. Any asbestos removed must be properly abated, containerized, managed, labeled and disposed of as an asbestos waste in accordance with applicable local, State, and Federal regulations. Asbestos waste must be properly transported to an approved, licensed asbestos disposal facility. Waste shipment records must be maintained during transport. A final copy of the waste shipment record will be forwarded to the OHARNG within 30 days for recordkeeping. A representative from the OHARNG Environmental Office will review and sign all waste profiles and manifests generated as the result of any asbestos abatement activities prior to the shipment of the waste from an OHARNG facility to a disposal facility.

## **6. Earth Fill**

- 6.1.** Any earth fill brought on site must be free of chemical contaminants and organic material (plant or animal parts). The contractor will identify the source of earth fill in the Work Plan.
- 6.2.** Fill material must be sampled prior to coming onsite. One sample will be collected using incremental sampling methodology (ISM) or composite sampling for every 4,000 cubic yards of earth fill. This quantity of earth fill must come from the same source or an additional sample must be collected. The samples will be analyzed for the following parameters: VOCs (total compound list), SVOCs (total compound list), pesticides (total compound list), PCBs, Explosives, Nitro-glycerine, Nitro-guanadine, Nitrocellulose, TAL Metals, pH. The results will be screened by the contractor against a provided list of facility background levels. The earth fill must be approved by the OHARNG and, at a minimum, be at or below the facility-wide background values.

## **7. Natural Resources**

### **7.1. Threatened and Endangered Species**

The OHARNG has training areas and facilities throughout the State of Ohio. Both federally and state listed rare species have been identified at a few OHARNG locations and all OHARNG locations are within the known ranges of other listed species. The OHARNG is required to protect listed species. In addition, there are migratory birds that nest in vegetation and structures on OHARNG property. The Migratory Bird Treaty Act prohibits harm to nesting migratory birds, their eggs, and their nests (with the exception of a few introduced species). The Contractor is responsible for doing everything possible so as to not intentionally or unintentionally harm any listed or protected species at any OHARNG facility. Immediately prior to the action commencing, the contractor will perform a thorough inspection for nesting birds, inhabiting bats, or other animals within the project area (structure(s), construction site, etc.). This thorough search will be to determine if any bats, birds, or other animals are present within the work area (under roof flashing, under siding, nesting in brush, etc.). The Contractor will also remain alert for the presence of any animals during project implementation. This is particularly important for demolition because animals may be utilizing old/abandoned buildings or structures. If any animals are found, the contractor will stop work in that area and immediately notify the project manager and the OHARNG Environmental Office.

The OHARNG can impose project specific restrictions on activities due to regulatory requirements. Any such project specific restriction will be identified in the project scope of work and/or contract language and discussed with the contractor prior to bidding and commencement of work. The Contractor is required to comply with any such restrictions.

### **7.2. Mowing**

There are no seasonal mowing restrictions on maintained lawns, grassland rights-of-way, and easements that are regularly mowed and maintained at a height of less than 10 inches. Grass and brush that is allowed to grow more than 10 inches tall during bird nesting season becomes suitable habitat for

grassland nesting birds and will not be mowed between 15 April and 15 August unless the Contractor has confirmed the absence of nests and nesting birds to the satisfaction of the OHARNG Environmental Office.

### **7.3. Vegetation Clearing and Tree Trimming**

The Contractor must inform the OHARNG Environmental Office of their intended schedule a minimum of two weeks in advance of a vegetation clearing, tree cutting/felling, or tree trimming project. The OHARNG will determine if the proposed work dates are within the allowable window for the location and type of work being conducted. If work is proposed within the restricted time period, the Contractor will have to reschedule the work.

Tree and vegetation clearing, brush cutting, tree felling/cutting (height equal to or greater than 24" above ground) and tree trimming of any branches and any other part of the tree that is at least three inches in diameter, can only occur between 1 October and 31 March. Abandoned wood utility poles are treated as trees in the sense that they can only be felled between 1 October and 31 March.

When clearing trees the contract specification will identify if the trees must be removed and hauled off site by the contractor or if they will remain on site to be salvaged by the government. The government will salvage trees when they are determined by the OHARNG Forester to have adequate commercial value as sawtimber or another forest product. When trees remain on site the Contractor will transport them and neatly stack them in a location designated by the OHARNG. If taken offsite, the Contractor will recycle the material as firewood, biomass, mulch, fuel chips, or some other reuse.

When trees are salvaged as sawtimber, all 8' 6" and longer straight portions of the trees up to a 10" diameter outside bark top that are felled will be limbed and neatly stacked in a location designated by the OHARNG. Limbing will consist of cutting limbs flush to the boll of the trees. Branch stubs are not permitted. Trees will be kept and stacked in as long of lengths as possible and under no circumstance less than 8'6" long. Pieces shorter than 8'6" are not suitable for sawtimber salvage. The Contractor will not cut otherwise longer tree sections to a length less than 8' 6" to avoid managing them as sawtimber.

When trees are salvaged for firewood and/or biomass, all portions of the trees down to a 4" diameter top will be cut into 4.5' to 9' lengths and neatly stacked in an area designated by the OHARNG. Firewood salvage will include sawtimber sized trees that have poor form or are too short to be sawtimber and sawtimber topwood.

Limbs, branches, brush and tree parts not salvaged will be removed from the site and recycled. This material will be chipped prior to removal. If only a small amount of chips are generated and the work is not within a cantonment or other maintained area, the chips will be blown/scattered in adjacent unimproved areas/woodlands. Piles of chips are not permitted and chips will not be placed in wetlands. Brush can be ground or chipped in place as part of the clearing operation.

### **7.4. Stumps**

Stumps will be ground or excavated in accordance with contract specification requirements. Stumps that are two feet tall or taller will not be ground or removed between 1 April and 30 September. Grinding of all stumps (to include major roots) will be to a minimum depth of 6 inches below ground surface. Grindings will be managed as directed by the project specifications. If in an upland area, chips can be spread on site adjacent to the stump. Grindings will not be spread in wetlands. If the area is not being leveled and re-graded, stump holes must be leveled and filled with clean fill dirt and top soil. Piles of grinding and chips will not be left on the project area or anywhere in a mowing zone.

The Contractor will not place chips or any parts of trees, brush, or any type of fill into any wetland including but not limited to ditches, streams, floodplain areas, wet spots or low areas. Stumps in wetlands will not be ground or excavated without a wetland permit and prior approval of the OHARNG Environmental Office.

If stumps are excavated, the contractor is required to remove and properly dispose of the stumps offsite or as otherwise specified within the project specifications. Surface disposal or burial on OHARNG property is not permitted.

#### **7.5. Vegetation Establishment**

The Contractor is responsible for ensuring the establishment of vegetative cover and soil stabilization of the project area and must use all means available and necessary to accomplish this. Straw erosion mats, rip rap, geo-cell, or other applicable soil stabilization methods, when needed, will be proposed to the OHARNG and approved before implementation. The contractor will utilize native vegetation. Vegetation to be used on a project will be identified in the Work Plan.

The Contractor is required to prepare an adequate seed bed prior to seeding. The seed bed must consist of clean, weed free top soil and must be broken up and loose and suitable for seed germination. Fertilization will be required if the soil is poor and/or nutrient levels are low. Lime will be applied as necessary to adjust the soil pH to the recommended level for the seed being sown.

An appropriate turf grass mix will be used for high traffic and high maintenance areas. Annual ryegrass can be added to mixes to provide quick cover. For late season seeding, winter wheat/rye can be added to provide a quick cover. Contractors will use approved grass seed mixes provided by the OHARNG. The OHARNG Environmental Office must approve all seed mixes. Seeding must be mulched with at least 2 inches of straw mulch if broadcast seeded, an appropriate fiber matting, or an appropriate cover if hydro-seeded. Seed drilling usually does not require mulch.

#### **8. Cultural Resources**

If during a project, the Contractor makes an inadvertent discovery of human remains, funerary items, animal remains, household artifacts or other artifacts, they will immediately stop work. All remains and artifacts will be left in place and measures taken to protect the site and artifacts from pilferage and damage will be implemented. The project manager, contracting office, and OHARNG Cultural Resources Manager will be notified immediately. In the event that human remains are identified, the on-site OHARNG security personnel or Range Control must be immediately contacted to allow them to contact the appropriate law enforcement agency.

#### **9. Unanticipated Munitions Discovery**

If unanticipated munitions, MEC, or MD are encountered at a work site, ground disturbing work will stop immediately, personnel will vacate the area, the area will be secured to keep personnel out, and the Contractor will immediately notify the USACE Project Manager and OHARNG Range Control. The OHARNG will investigate the discovery and coordinate with the appropriate UXO or Explosive Ordinance Division (EOD) support personnel. Contractor work in the area of the munitions will be suspended until the area is made/declared safe by a qualified munitions/EOD technician. If the discovery of munitions results in the need to change the scope of work and/or contract terms, such changes will be determined by the Army team. Should the overall project require munitions investigation or removal or UXO construction support, details will be provided in the project-specific SOW or PWS.

#### **10. Other**

Keys shall be obtained and signed out from the OHANRG environmental office or CJAG logistics. Keys shall be returned after each field activity to the appropriate location. Keys shall not be copied or destroyed.

Positive drainage and grading shall be established and conducted by the Contractor in all disturbed project areas. This includes remediation areas, ruts, access/haul routes, laydown areas etc. Areas must be returned to conditions prior to disturbance. OHARNG/ARNG will approve final conditions.

## QRG 2.2 FIRST RESPONDER (SPILL) REPORTING FORM

Collect as much of the information on the top half of this form as possible before making initial notification. Complete the top and bottom of the form before turning in to Range Operations.

Name of individual reporting spill: \_\_\_\_\_

When did the spill occur (Date and Time)? \_\_\_\_\_

Spill Location (Building or area name / number, indoors or out; if vehicle involved, type and bumper number):  
\_\_\_\_\_

What was spilled? \_\_\_\_\_ How much was spilled? \_\_\_\_\_

Rate at which material is currently spilling. \_\_\_\_\_

Extent of spill travel? \_\_\_\_\_

Did the spill reach water (ditch, creek, stream, pond, well head)? \_\_\_\_\_

Number of injured personnel and type injuries, if applicable. \_\_\_\_\_

Do you need the Fire Department to respond to protect life, property, and environment? \_\_\_\_\_

---

Unit: \_\_\_\_\_ State: \_\_\_\_\_ Report Date & Time: \_\_\_\_\_

On Scene Coordinator Name and Grade: \_\_\_\_\_ Phone: \_\_\_\_\_

How did the spill occur (be specific)? \_\_\_\_\_  
\_\_\_\_\_

What remedial action was taken? \_\_\_\_\_  
\_\_\_\_\_

Was soil and absorbent material generated? \_\_\_\_\_ How much? \_\_\_\_\_

What is the location of the soil and absorbents? \_\_\_\_\_

Was the Environmental Office contacted (yes or No, date and time)? \_\_\_\_\_

Who did you talk to in the Environmental Office? \_\_\_\_\_

Was the site cleared by the Env. Office (Yes or No, date and time)? \_\_\_\_\_

Who cleared the site (name and grade, date and time)? \_\_\_\_\_

---

***Initial information is critical. Get as much information as you can, but don't hesitate to make the initial notification if a spill is moving or worsening rapidly!***

***This form must be completed for all releases and turned-in to CJAG Range Operations within 24 hours.***



**FIRST RESPONDER SPILL/RELEASE RESPONSE ACTIONS**

Units or contractors performing training or other operations at Camp James A. Garfield shall be responsible for adhering to the provisions identified in the Integrated Environmental Contingency Plans (IECP). A copy of the IECP may be obtained from the Camp James A. Garfield Environmental Supervisor. Following discovery of a spill (any size), the procedures outlined below shall be executed where applicable:

1. **If necessary, initiate evacuation of the immediate area.**
2. **Notify Camp James A. Garfield Range Operations via two-way radio or by calling (614) 336-6041, and report information contained on the “First Responder Reporting Form” if it is known or can reasonably be determined. This form has been copied on the opposite side of this page. If Range Operations cannot be reached, contact a Camp James A. Garfield OSC (listed below).**
3. **Stop spill flow when possible without undue risk of personal injury.**
4. **If trained, contain the spill using available spill response equipment or techniques.**
5. **Make spill scene OFF LIMITS to unauthorized personnel.**
6. **Restrict all sources of ignition when flammable substances are involved.**
7. **Report to the OSC upon his/her arrival to the scene. Turn in a completed copy of the Camp James A. Garfield First Responder Form to Range Operations for ALL releases, even ones cleaned up by the reporter.**

**TELEPHONE NUMBER**

When Camp James A. Garfield Range Operations is *not available*, the OSC *must be contacted* by the discoverer/first responder following a release if it is in water, at or above a reportable quantity (25 gallons or more of POL), a hazardous or extremely hazardous substance, a hazardous waste, or involves fire, explosion, or is otherwise a major incident.

| NAME                                   | JOB TITLE                | OFFICE        | 24 HOUR           |
|--|--------------------------|---------------|-------------------|
| Camp James A Garfield Range Operations | Operations and Training  | (614)336-6041 | (614) 202-5783    |
| Tim Morgan (Primary OSC)               | Environmental Supervisor | (614)336-6568 | (330)322-7098     |
| Brad Kline (Alternate OSC)             | Environmental Specialist | (614)336-4918 | Contact Alternate |
| Katie Tait (Alternate OSC)             | Environmental Specialist | (614)336-6136 | Contact Alternate |
| Joint Forces Command (Alternate POC)   | OHARNG Emergency Center  | (888)637-9053 | (888)637-9053     |

Off-site (from Camp James A. Garfield area code 614 phones)

Ravenna Dispatch ..... 9-1-330 296-6486

**SEE REVERSE FOR FIRST RESPONDER REPORTING FORM**

## CJAG WASTE MANAGEMENT GUIDELINES

**PURPOSE:** Guidelines to be followed by contractors working at Camp James A. Garfield Joint Military Training Center who are generating/shipping Hazardous, Non-Hazardous, Special or Universal Waste.

**POLICY:** The policy at CJAG is to comply with all local, state, federal and installation requirements. Contractor is responsible for waste minimization and is required to recycle materials if possible.

**Restoration Program POC: Katie Tait (614) 336-6136**

**Military & Non-Restoration POC: Brad Kline (614) 336-4918**

### Coordination:

- Coordinate all waste generation and shipments with the appropriate CJAG POC listed above or the Environmental Supervisor in their absence at (614) 336-6568.
- Notify CJAG POC prior to waste sampling for characterization. Details about sampling activities must be included (i.e., number of sample, analyticals, etc.).
- All Hazardous and Non-Hazardous waste management storage locations must be pre-approved prior to generation.
- Ensure all labels include: Date, Contractor, and Waste Type.
- When contractors have waste onsite, a weekly Inspection inventory must be completed and submitted to the appropriate POC in the CJAG environmental office.
- All wastes shall be tracked and logged throughout the duration of the project. Contractor will provide CJAG POC with a monthly rollup report of all waste and recycled streams generated by no later than the 10<sup>th</sup> day of the following month.

**Hazardous Waste Treatment, Storage and Disposal Facilities and Waste Haulers:** Contractors are required to utilize hazardous waste haulers and Treatment, Storage, and Disposal Facilities on the latest Defense Reutilization Marketing Office (DRMO) approved list. The current qualified waste hauler and TSDF list can be viewed by following the “Qualified Facilities” and “Qualified Transporters” links found on the DLA Hazardous Waste Disposal Homepage, <http://www.dispositionservices.dla.mil/newenv/hwdisposal.shtml>.

### Hazardous or Non-Hazardous manifest form, the following must be included:

- Military and non-restoration operations waste Site Name = Camp James A. Garfield Joint Military Training Center. Mailing and Site address: CJAG ENV, 1438 State Route 534 SW, Newton Falls, Ohio 44444, (614) 336-4918. Ohio EPA ID # – OHD981192925.
- Restoration Program waste Site Name = Former Ravenna Army Ammunition Plant. Mailing address is same as address above. Site address: 8451 State Route 5, Ravenna, Ohio 44266, (614) 336-6136. Ohio EPA ID # – OH5210020736.
- Contractor’s shipping Hazardous Waste must provide a Land Disposal Restriction (LDR) in accordance with 40 CFR Part 268.
- Profiling:
  - The required shipping documentation (i.e. waste profile and executive summary of lab reports (if available)) need to be submitted to appropriate CJAG POC or designee(s) for approval and signature prior to shipping.
  - Results of characterization must be submitted to appropriate CJAG POC within 30 days after collecting sample.
- Manifests - Hazardous and Non-Hazardous:
  - The waste carrier/transporter provides appropriate manifest to the contractor.
  - The contractor is required to:
    - Ensure that CJAG POC or designee(s) is available to sign the manifest on the scheduled day of shipment;
    - Verify that each manifest is properly completed and signed by CJAG POC or designee(s);
    - Provide the Generator copy of the manifest to CJAG POC or designee(s); and
    - Ensure that the original Generator copy of the manifest signed by the treatment storage disposal facility is returned to CJAG within 30 days of the shipping date for Hazardous and Non-Hazardous Waste.
    - The use of a Bill of Lading, in lieu of a waste manifest, must be approved by the CJAG environmental office.

### All satellite accumulation storage sites and containers will comply with 40CFR 262.34(c)(1):

- Any material that is subject to Hazardous Waste Manifest Requirements of the US Environmental Protection Agency must comply with 40 CFR Part 262.
- From the time any waste is placed in a satellite storage container, proper labeling must be on the container (proper labeling includes date, contractors name and product type).
- Pending analysis label is to be used from the time the sample is taken until the results are received.
- In no case will waste labeled pending analysis exceed 45 days.

All CJAG Hazardous and Non-Hazardous records are maintained at the CJAG environmental office, point of contacts are Katie Tait at (614) 336-6136 and Brad Kline at (614) 336-4918.

# CJAG WEEKLY NON-HAZARDOUS & HAZARDOUS WASTE INSPECTION/INVENTORY SHEET

Contractor: \_\_\_\_\_ Month: \_\_\_\_\_ Year: \_\_\_\_\_ Waste Description: \_\_\_\_\_

Container Nos. \_\_\_\_\_

|   | WEEK 1         | WEEK 2         | WEEK 3         | WEEK 4         |
|---|----------------|----------------|----------------|----------------|
|   | Date:<br>Time: | Date:<br>Time: | Date:<br>Time: | Date:<br>Time: |
| Point of Contact (Name / Number)                                      |                |                |                |                |
| Project Name:   |                |                |                |                |
| Contracting Agency and POC:   |                |                |                |                |
| Waste Determination: Pending Analysis, Hazardous, Non-Hazardous, etc. |                |                |                |                |
| *Location on installation:  |                |                |                |                |
| Date Generated:   |                |                |                |                |
| Projected date of disposal:   |                |                |                |                |
| Non-Haz, Satellite, 90 day storage area                               |                |                |                |                |
| Waste generation site:  |                |                |                |                |
| Number of Containers (size / type):                                   |                |                |                |                |
| Condition of Container:   |                |                |                |                |
| Containers closed, no loose lids, no loose bungs?                     | yes / no       | yes / no       | yes / no       | yes / no       |
| Waste labeled properly and visible (40 CFR 262.34 (c) (1):            | yes / no       | yes / no       | yes / no       | yes / no       |
| Secondary containment   | yes / no       | yes / no       | yes / no       | yes / no       |
| Incompatibles stored together?  | yes / no       | yes / no       | yes / no       | yes / no       |
| Any spills?   | yes / no       | yes / no       | yes / no       | yes / no       |
| Spill kit available?  | yes / no       | yes / no       | yes / no       | yes / no       |
| Fire extinguisher present and charged?                                | yes / no       | yes / no       | yes / no       | yes / no       |
| Containers grounded if ignitables?                                    | yes / no / na  | yes / no / na  | yes / no / na  | yes / no / na  |
| Emergency notification form/info present?                             | yes / no       | yes / no       | yes / no       | yes / no       |
| Container log binder present?   | yes / no       | yes / no       | yes / no       | yes / no       |
| Signs posted if required?   | yes / no       | yes / no       | yes / no       | yes / no       |
| Photos submitted  | yes / no       | yes / no       | yes / no       | yes / no       |
|   |                |                |                |                |
| Printed Name:   |                |                |                |                |
| Signature:  |                |                |                |                |

This form is required for Non-Hazardous and Hazardous waste including PCB and special waste.

CONTRACTORS ARE REQUIRED TO SUBMIT THIS FORM WEEKLY TO THE CAMP RAVENNA ENV OFFICE WHEN WASTE IS STORED ON SITE.

CONTRACTORS ARE ENCOURAGED TO INCLUDE PHOTOS WITH EACH WEEKLY INSPECTION SHEET WHEN WASTE IS STORED ON SITE.

\*Draw detailed map showing location of waste within the site.



**APPENDIX D**  
**TREE REMOVAL PLAN**

This tree removal plan has been approved by the United States Army Corps of Engineers and the Ohio Army National Guard.

This document is submitted for reference only and is not intended for Ohio EPA review.

Attn: Mr. Nathaniel Peters II, Technical Manager  
Army Corps of Engineers – Louisville District  
600 Dr. Martin Luther King Jr. Place  
Louisville, KY 40202

27 February 2023

**Tree Removal Plan – Revision 1**  
**CC RVAAP-70 East Classification Yard and RVAAP-50 Atlas Scrap Yard**  
**Former Ravenna Army Ammunition Plant Restoration Program**  
**Camp James A. Garfield, Portage and Trumbull Counties, Ohio**

Dear Mr. Peters:

PIKA-Insight, JV, is submitting this letter to describe tree clearance activities in support of the removal action for CC RVAAP-70 East Classification Yard (ECY) and remedial action at RVAAP-50 Atlas Scrap Yard (ASY) including the Former Storage Area (FSA) and Former Incinerator Area (FIA) at Camp James A. Garfield (CJAG).

The recommended alternative in the *Action Memorandum for CC RVAAP-70 East Classification Yard* (Revision 1.0 June 2021) is excavation with offsite disposal of benzo(a)pyrene-contaminated soil to attain Unrestricted (Residential) Land Use. The recommended selected remedies from the *Revised Final Record of Decision for Soil, Sediment, and Surface Water at RVAAP-50 Atlas Scrap Yard* (June 2022) is thermal treatment of polyaromatic hydrocarbon-contaminated soil to attain Commercial/Industrial Land Use at the FSA and excavation and offsite disposal of lead-contaminated soil to attain Unrestricted (Residential) Land Use at the FIA.

During the pre-bid site visit both CC RVAAP-70 and RVAAP- 50 FSA and FIA were observed to be heavily overgrown with trees which will need to be removed to allow for safe and timely completion of the removal and remedial actions. Due to the Northern Long-Eared Bat (NLEB), tree and vegetation clearing, brush cutting, tree felling/cutting (height equal to or greater than 24” above ground) and tree trimming of any branches and any other part of the tree that is at least three inches in diameter at breast height (dbh), can only occur between 1 October and 31 March, outside of the NLEB roosting season. PIKA-Insight JV is proposing these tree removal activities be performed during the months of February or March 2023 to facilitate the removal and remedial actions at the sites.

**Delineation Sampling at the Former Incinerator Area**

The RVAAP-50 ASY FIA excavation limits have not been completely delineated. To guide the effective and complete removal of lead-impacted soil at concentrations above the remedial action objective and, thereby know what trees must be cleared to facilitate the removal, field screening of soil using a Innov-X Systems Alpha Series™ X-ray fluorescence (XRF) analyzer or equivalent will be conducted.

This model unit does not require radioisotope operator certification nor does it pose a radiation hazard, as it operates using a low power (1.0 W) excitation source consisting of an X-Ray tube with a silver (Ag) anode target.

Soil may be field screened non-intrusively by placing the XRF directly on the soil surface after removing debris from the soil surface. Alternatively, the portion of soil selected for field screening may be prepared by placing approximately 8 ounces of soil into a disposable zip locking plastic bag. Large pieces of soil within the plastic bag will be broken into smaller pieces, and the soil will be blended to form as homogeneous a mixture as is practical. The bagged samples will be placed on a lead-free plastic worktable prior to XRF screening. Each sample will be screened by placing the XRF analyzer onto the sample for 30 seconds to obtain comparable results among the samples.

The XRF analyzer will be calibrated daily, and calibration results will be recorded in the field logbook or on equipment calibration logs. XRF analyzer results for lead will be recorded in the field logbook or on field data sheets in instrument units that are equivalent to parts per million (roughly equivalent to mg/kg). Field screening will be performed by taking one XRF reading per grid cell shown on **FIGURE 1**. If field screening indicates lead concentrations at or above 400 mg/kg, additional field screening will be performed in adjacent cells located further from the presumed source (the former incinerator). The delineation will be terminated when results of the field screening generate a perimeter beyond which the XRF lead readings are lower than the RAOs.

The results of the XRF field screening will be used to determine the approximate boundaries of the tree removal. These boundaries will be communicated to the OHARNG prior to mobilization for tree removal.

### **Tree Removal**

The scopes of work at CC RVAAP-70 and RVAAP-50 FSA and FIA include excavation of soil. Completion of these activities will require maneuvering heavy equipment and trucks into these areas. The limits of the proposed tree removal activities include the removal areas, a 10-foot buffer around the removal areas, and additional vegetation required to access the removal areas as shown on **FIGURES 2 THROUGH 4**. These limits will be marked in the field prior to the commencement of tree removal activities.

It is assumed that only trees and brush in the marked areas on **FIGURES 2 THROUGH 4** and those posing access issues along the access routes will be targeted during this activity. Additionally, trees planned for removal to facilitate the work will be marked with stakes, and Ohio Army National Guard (OHARNG) will inspect the trees prior to removal in order to inventory them.

Trees are anticipated to be removed mechanically using a feller-buncher. Deviations from this method will be communicated to and approved by the United States Army Corps of Engineers (USACE) and OHARNG prior to application. Tree removal will be performed in accordance with *OHARNG Environmental Procedures Restoration Program Specific Version* date 15 July 2022. The procedures contained therein are summarized in the following paragraphs.

Should the government request to salvage trees, such trees will be transported and neatly stacked in a location designated by the OHARNG.

Limbs, branches, brush and tree parts not salvaged will be chipped, removed from the site, and recycled. If only a small amount of chips are generated and the work is not within a cantonment or other maintained area, the chips will be blown/scattered in adjacent unimproved areas/woodlands. Piles of chips will not be generated, and chips will not be placed in wetlands. Brush will be ground or chipped in place as part of the clearing operation.

When clearing trees, trees will be stockpiled as firewood. Trees that are salvaged for firewood and all portions of the trees down to a 4" diameter top will be cut into 4.5' to 9' lengths and neatly stacked adjacent to the nearest established road that is within the AOC in coordination with the OHARNG. Firewood salvage will include sawtimber sized trees that have poor form or are too short to be sawtimber and sawtimber topwood.

Stumps (including major roots) that would interfere with remedial/removal action activities and are not in contact with contaminated soil will be ground to a minimum depth of 6 inches below ground surface in the areas where the soil is not contaminated. Chips will be spread on site adjacent to the stump but not into wetlands. Stumps in wetlands will not be ground-down or excavated without approval from OHARNG.

As indicated on the attached figures, certain areas within each of the RVAAPs are considered contaminated. These areas will be staked prior to tree removal activities. Trees and brush that come into contact with contaminated soil will be considered contaminated. Root balls and stumps in contaminated areas are considered contaminated by default. Contaminated material must be taken to an approved landfill per CJAG requirements. However, disposal of contaminated material at a landfill is outside of scope of this work plan and will be handled in accordance with the Removal Action Work Plans that are being developed.

Trees removed within contaminated areas that do not come into contact with contaminated soil will not be considered contaminated and will be relocated outside of the contaminated area to be handled with other uncontaminated material. The following best management practices will be followed to reduce the mass of contaminated material: (1) uncontaminated trees will not be felled onto contaminated material, (2) chipped, uncontaminated material will not be broadcasted onto contaminated material, and (3) trees in contaminated areas will be felled in such a manner that they can be relocated outside of the contaminated area prior to contacting the ground.

Stumps/root balls in the contaminated areas will be left in place and ground/removed as needed during excavation activities.

### **Equipment Maintenance**

Daily equipment checklists will be completed for heavy equipment and vehicles. Preventive maintenance will be performed on equipment to make sure proper operation and to detect potential leaks before they occur and manufacturer's maintenance schedules are followed for all equipment. Good housekeeping practices will be maintained during construction activities. Employees will practice due diligence to prevent any damage to the stormwater control measures. Containers will be provided at the necessary locations for collecting trash and general construction debris. Fueling activities will be conducted at the staging area away from stormwater conveyances. Equipment refueling operations will be performed via a truck with a fuel cell in the truck bed. The refueling truck will remain outside of the excavation area so as to not track out contaminated material. Drip trays will be utilized during equipment refueling operations. Operators will not leave equipment refueling operations unattended and spill kits will be staged near refueling areas. Spill response will be performed in accordance with the facility Environmental Procedures.

### **Decontamination**

Upon completion of the tree removal activities, decontamination of tools and equipment will be performed at each area of concern. Tree removal equipment will be decontaminated prior to being used in other



excavation areas/AOCs (e.g., equipment used in lead-impacted soil will be decontaminated prior to use in benzo(a)pyrene-impacted soil). Equipment, including parts of equipment that come in contact with contaminated soil (tracks wheels, undercarriage of equipment, etc.), will be decontaminated. Tree removal equipment will be thoroughly decontaminated prior to demobilization from the site and CJAG.

Decontamination methods to be implemented may range from dry decontamination procedures, which include removal of all loose soil from buckets, tracks, and undercarriages to a wet brush washing and/or steam cleaning, depending on the extent of residual soils on the equipment. Residual soil removed from equipment will be left onsite. Temporary decontamination pads consisting of visqueen-lined berms capable of collecting wash water, including overspray, and loose soil will be constructed, as needed, to avoid cross-contamination of clean areas during decontamination procedures. At the conclusion of the decontamination operations, the decontamination pad will be dismantled and placed, along with any fluids or collected soil, into secure containers for proper disposal. Contaminated waste will be segregated by media type and transported to Building 1036 for storage pending characterization. Characterization sampling will be performed immediately after the containers are filled and/or the tree removal is complete. Characterization samples will be submitted to ALS – Middletown for analysis in accordance with disposal facility requirements. Other solid waste with minimal soil residue and contamination will be disposed of in a municipal dumpster.

### **Environmental Protection Plan**

Due to the Northern Long-Eared Bat, tree and vegetation clearing, brush cutting, tree felling/cutting (height equal to or greater than 24” above ground) and tree trimming of any branches and any other part of the tree that is at least three inches in diameter, will only occur between 1 October and 31 March, outside of the NLEB roosting season. Stumps that are two feet tall or taller will only be ground or removed between 1 October and 31 March in the areas where the soil is not contaminated. As such, the planned field work will occur prior to 31 March 2023.

Removal/remedial action activities at the sites will require removal and disposal of soil. To minimize ground disturbance, PIKA-Insight JV will limit activities that disturb the ground surface such as clearing, truck loading, and equipment movement to the areas shown on **FIGURES 2 THROUGH 4**. Best management practices will include erosion and sediment controls such as hay bales, filter sock, and silt fence. These will be installed in coordination with OHARNG as necessary to prevent soil erosion and runoff as described in the removal/remedial actions respective work plans that are being developed and will be maintained until the Site work is complete.

Water will not be drawn from nor pumped into adjacent water bodies or wetlands.

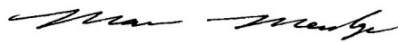
Wetlands have not been delineated at the sites since 2017. Identified wetlands will be marked prior to tree removal activities. Should crossing or entering wetlands be required to facilitate tree removal hand-cutting will be employed, if feasible, to reduce the impact on the wetlands. To maximize efficiency and complete tree and brush removal and also minimize impacts to wetland areas, tracked vehicles will be used for tree removal and erosion and sediment controls (e.g., track mats) will be implemented as needed to traverse and work in wetland areas.

Streams will not be traversed except by existing infrastructure (e.g., culverts). Streams will be protected through the installation of erosion and sediment controls where an access road approaches the stream and

where the stream is downgradient of and likely to be impacted by work at the site. The only identified stream that may require protection (pending delineation sampling) is north of the FIA. Erosion and sediment controls may be required to be installed along the southern bank of the stream. Revised locations for erosion and sediment controls will be provided to OHARNG for approval following delineation sampling.

Please contact me by telephone at (619) 843-9968 or by email at mMendoza@ieeci.com if you have any questions.

Sincerely,



Marco Mendoza, PG  
Project Manager

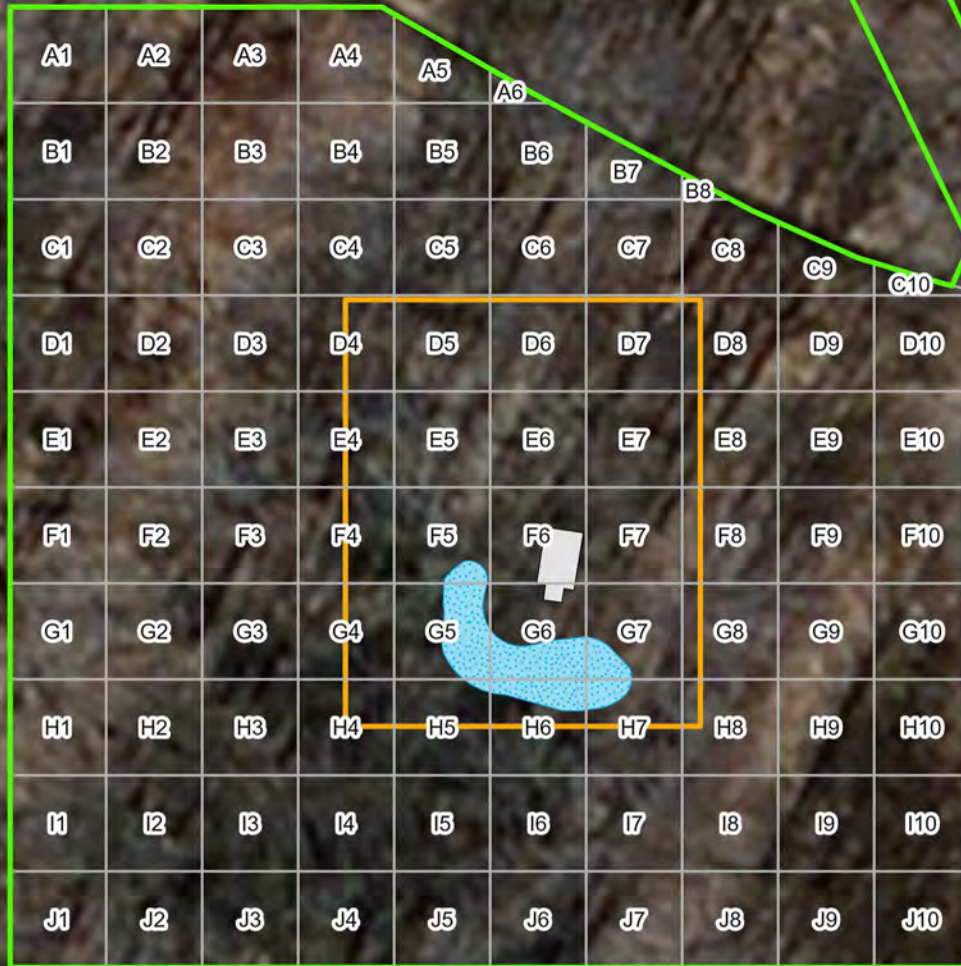
CC: Steve Kvaal, USACE-Louisville District (Electronic)  
Kevin Sedlak, ARNG Restoration Project Manager (Electronic)  
Katie Tait, OHARNG Environmental Specialist II (Electronic)  
Jennifer Tierney, Administrative Records Manager (Electronic)  
Robert Davis, Tetra Tech (Electronic)  
Greg Healy, Tetra Tech (Electronic)

Attachments:

Figure 1 RVAAP-50 FIA Delineation Sampling Map  
Figure 2 CC RVAAP-70 Tree Removal Map  
Figure 3 RVAAP-50 FIA Tree Removal Map  
Figure 4 RVAAP-50 FSA Tree Removal Map

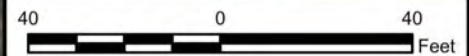
## **ATTACHMENTS**

Aerial photograph provided by ESRI's ArcGIS Online World Imagery (Clarity) map service.



**Legend**

- Tree Removal Area
- 20'x20' Sampling Grid
- Subarea
- Existing Incinerator
- Pond Area Identified During 2018 Site Walk



**FIA DELINEATION MAP**  
**RVAAP-50 - ATLAS SCRAP YARD**  
**FORMER INCINERATOR AREA**  
**CAMP JAMES A. GARFIELD**  
**PORTAGE AND TRUMBULL COUNTIES, OHIO**

DRAWN BY: J. ENGLISH 02/08/23  
 CHECKED BY: G. HEALY 02/20/23  
 APPROVED BY:

CONTRACT NUMBER: 112G09943

|               |     |
|---------------|-----|
| FIGURE NUMBER | REV |
| 1             | 0   |

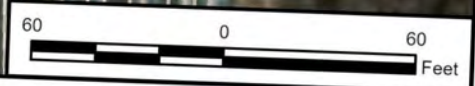
Aerial photograph provided by ESRI's ArcGIS Online World Imagery (Clarity) map service.



**Legend**

- Proposed Filter Sock
- Tree Removal Area
- Proposed Equipment Laydown Area
- Proposed Decontamination Pad
- Proposed Firewood Stockpile
- Area of Concern
- Decision Unit 3
- Former UST
- Building
- Demolished Building
- Railroad
- Site Specific Wetlands
- Stream/Creek

**Work Areas**  
 Tree Removal Area: 12,450 sq ft (0.29 acres)  
 Equipment Laydown Area: 2,159 sq ft (0.05 acres)  
 Proposed Decontamination Pad: 331 sq ft (0.01 acres)  
 Proposed Firewood Stockpile 1,144 sq ft (0.03 acres)

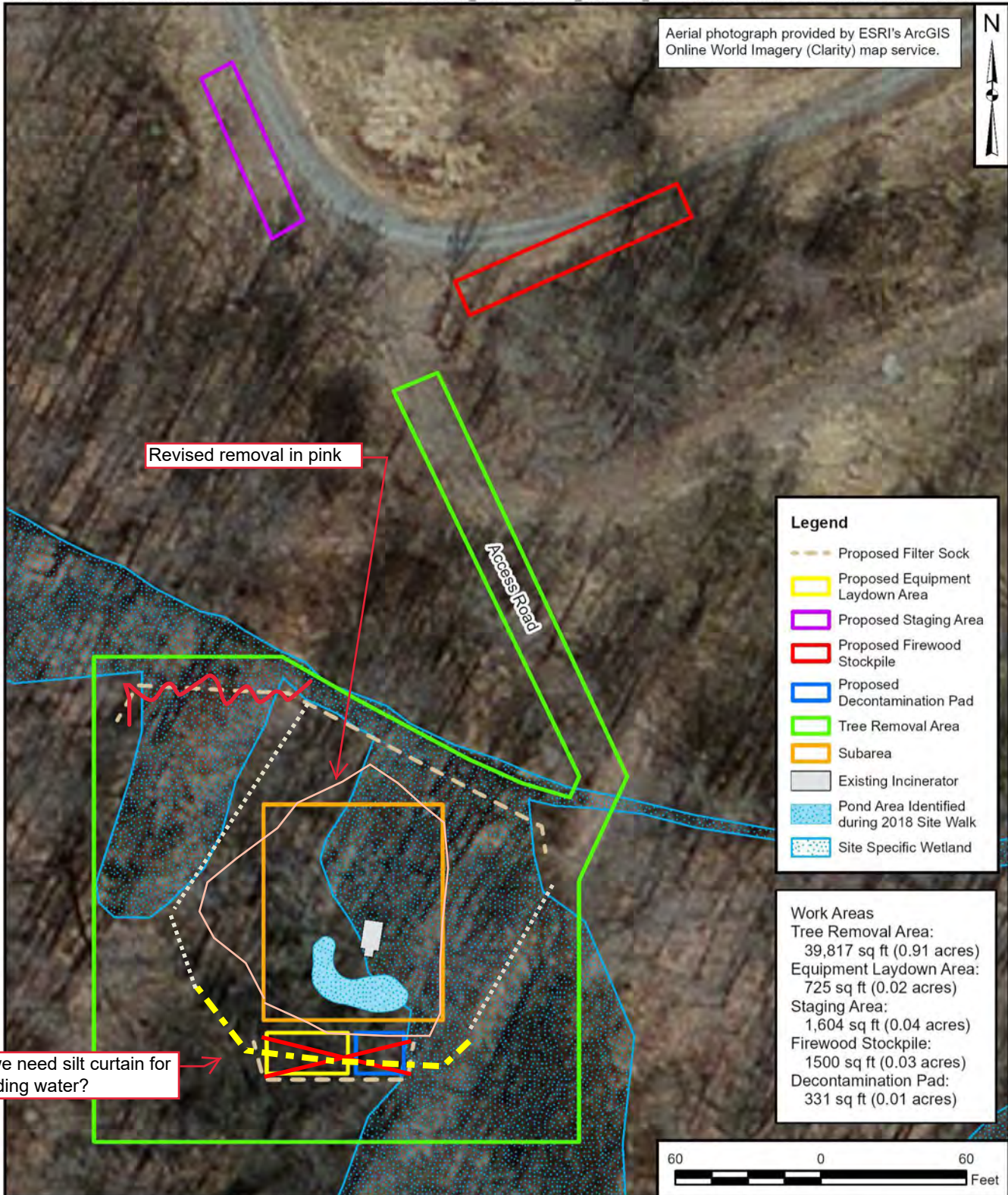


**SITE LAYOUT MAP**  
 CC RVAAP-70 - EAST CLASSIFICATION YARD  
 CAMP JAMES A. GARFIELD  
 PORTAGE AND TRUMBULL COUNTIES, OHIO

DRAWN BY: J. ENGLISH 02/10/23  
 CHECKED BY: G. HEALY 02/20/23  
 APPROVED BY:  
 CONTRACT NUMBER: 112G09943

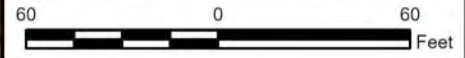
|               |     |
|---------------|-----|
| FIGURE NUMBER | 5-1 |
| REVISION      | 0   |

Aerial photograph provided by ESRI's ArcGIS Online World Imagery (Clarity) map service.



- Legend**
- Proposed Filter Sock
  - Proposed Equipment Laydown Area
  - Proposed Staging Area
  - Proposed Firewood Stockpile
  - Proposed Decontamination Pad
  - Tree Removal Area
  - Subarea
  - Existing Incinerator
  - Pond Area Identified during 2018 Site Walk
  - Site Specific Wetland

- Work Areas**
- Tree Removal Area: 39,817 sq ft (0.91 acres)
  - Equipment Laydown Area: 725 sq ft (0.02 acres)
  - Staging Area: 1,604 sq ft (0.04 acres)
  - Firewood Stockpile: 1,500 sq ft (0.03 acres)
  - Decontamination Pad: 331 sq ft (0.01 acres)



Do we need silt curtain for standing water?



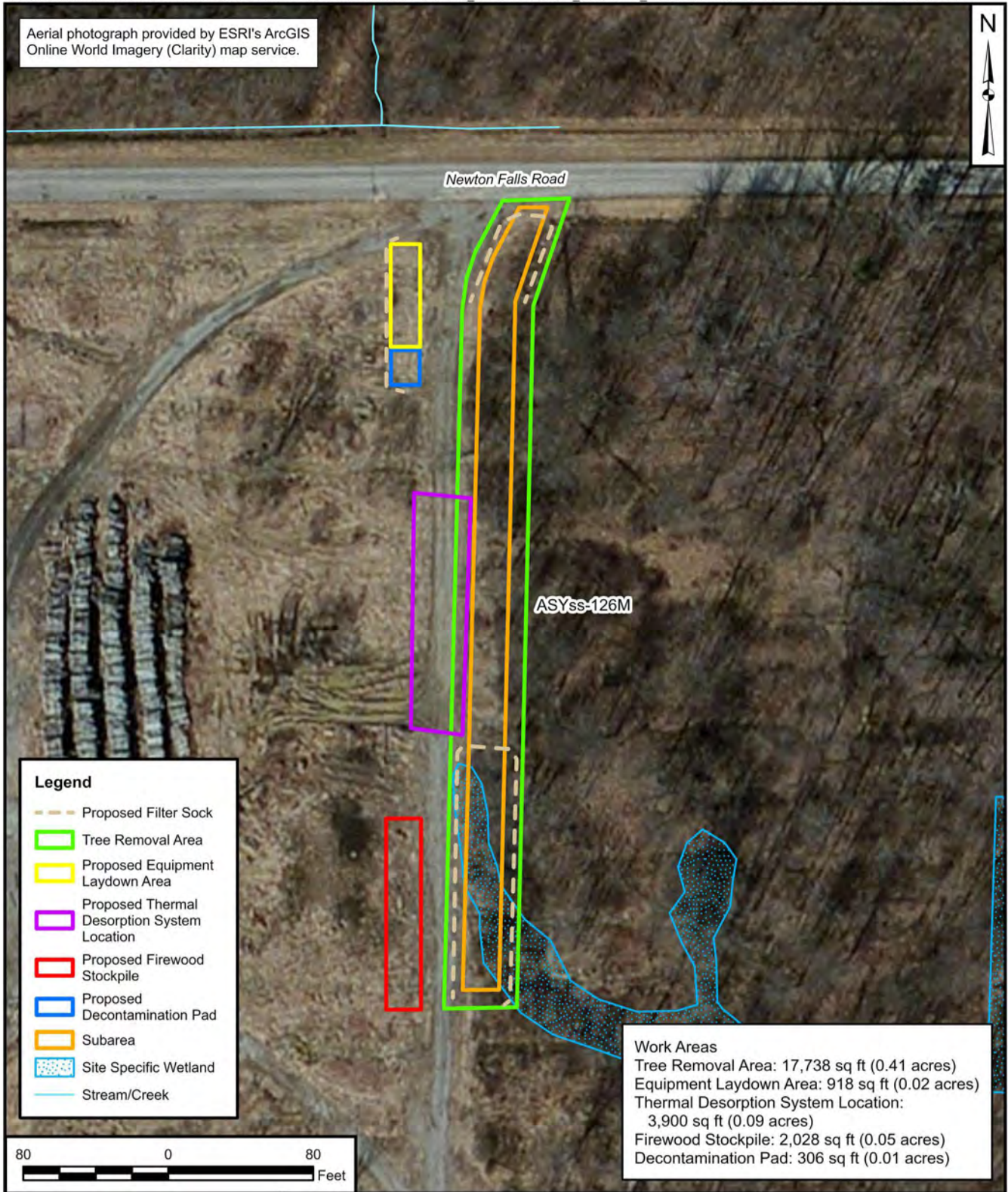
FIA SITE LAYOUT MAP  
 RVAAP-50 - ATLAS SCRAP YARD  
 FORMER INCINERATOR AREA  
 CAMP JAMES A. GARFIELD  
 PORTAGE AND TRUMBULL COUNTIES, OHIO

DRAWN BY: J. ENGLISH 02/10/23  
 CHECKED BY: G. HEALY 02/20/23  
 APPROVED BY:

CONTRACT NUMBER: 112G09943

|               |   |     |   |
|---------------|---|-----|---|
| FIGURE NUMBER | 3 | REV | 0 |
|---------------|---|-----|---|

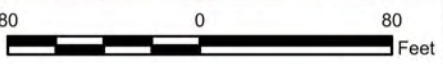
Aerial photograph provided by ESRI's ArcGIS Online World Imagery (Clarity) map service.



**Work Areas**  
 Tree Removal Area: 17,738 sq ft (0.41 acres)  
 Equipment Laydown Area: 918 sq ft (0.02 acres)  
 Thermal Desorption System Location:  
 3,900 sq ft (0.09 acres)  
 Firewood Stockpile: 2,028 sq ft (0.05 acres)  
 Decontamination Pad: 306 sq ft (0.01 acres)

**Legend**

- Proposed Filter Sock
- Tree Removal Area
- Proposed Equipment Laydown Area
- Proposed Thermal Desorption System Location
- Proposed Firewood Stockpile
- Proposed Decontamination Pad
- Subarea
- Site Specific Wetland
- Stream/Creek



**SITE LAYOUT MAP**  
**RVAAP-50 - ATLAS SCRAP YARD**  
**FORMER STORAGE AREA**  
**CAMP JAMES A. GARFIELD**  
**PORTAGE AND TRUMBULL COUNTIES, OHIO**

DRAWN BY: J. ENGLISH 02/06/23  
 CHECKED BY: G. HEALY 02/20/23  
 APPROVED BY:  
 CONTRACT NUMBER: 112G09943

|               |     |
|---------------|-----|
| FIGURE NUMBER | REV |
| 4             | 0   |

**APPENDIX E**  
**FIELD FORMS**





## SITE PHOTOGRAPHIC LOG

|              |              |                      |
|--------------|--------------|----------------------|
|              |              |                      |
| <b>Date:</b> | <b>View:</b> | <b>Photographer:</b> |
|              |              |                      |

|              |              |                      |
|--------------|--------------|----------------------|
|              |              |                      |
| <b>Date:</b> | <b>View:</b> | <b>Photographer:</b> |
|              |              |                      |

|              |              |                      |
|--------------|--------------|----------------------|
|              |              |                      |
| <b>Date:</b> | <b>View:</b> | <b>Photographer:</b> |
|              |              |                      |

|              |              |                      |
|--------------|--------------|----------------------|
|              |              |                      |
| <b>Date:</b> | <b>View:</b> | <b>Photographer:</b> |
|              |              |                      |

## SITE PHOTOGRAPHIC LOG

# SOIL & SEDIMENT SAMPLE LOG SHEET



Event: \_\_\_\_\_  
 Project Site Name: \_\_\_\_\_  
 Project No.: \_\_\_\_\_

|                     |                                    |
|---------------------|------------------------------------|
| Sample ID No.:      | Sampled By: _____                  |
| Sample Location:    | Sample Date: _____                 |
| QA/QC Duplicate ID: | MS/MSD Collected:      YES      NO |

|  |   |
|--|---|
| <b>MATRIX / CONCENTRATION:</b>   |   |
| <input type="checkbox"/> Surface Soil<br><input type="checkbox"/> Subsurface Soil<br><input type="checkbox"/> Sediment | <input type="checkbox"/> Low Concentration<br><input type="checkbox"/> High Concentration |

|                          |                |       |  |
|--------------------------|----------------|-------|--|
| <b>GRAB SAMPLE DATA:</b> |                |       |  |
| Time:                    | Depth Interval | Color | Description (Sand, Silt, Clay, Moisture, etc.) |
| Method:                  |                |       |  |
| Monitor Reading (ppm):   |                |       |  |

| <b>MULTIPLE / COMPOSITE SAMPLE DATA:</b> |      |                              |       |  |
|--|------|------------------------------|-------|--|
| Method:                                  |      | PID Readings (Range in ppm): |       |  |
| Sample ID                                | Time | Depth Interval               | Color | Description (Sand, Silt, Clay, Moisture, etc.) |
|  |      |                              |       |  |
|  |      |                              |       |  |
|  |      |                              |       |  |
|  |      |                              |       |  |
|  |      |                              |       |  |
|  |      |                              |       |  |
|  |      |                              |       |  |
|  |      |                              |       |  |
|  |      |                              |       |  |
|  |      |                              |       |  |

| <b>SAMPLE COLLECTION INFORMATION:</b> |        |              |        |      |             |           |
|---------------------------------------|--------|--------------|--------|------|-------------|-----------|
| Analysis                              | Method | Preservative | Number | Vol. | Bottle Type | Collected |
|                                       |        |              |        |      |             |           |
|                                       |        |              |        |      |             |           |
|                                       |        |              |        |      |             |           |
|                                       |        |              |        |      |             |           |
|                                       |        |              |        |      |             |           |
|                                       |        |              |        |      |             |           |
|                                       |        |              |        |      |             |           |
|                                       |        |              |        |      |             |           |
|                                       |        |              |        |      |             |           |

|                              |             |
|------------------------------|-------------|
| <b>OBSERVATIONS / NOTES:</b> | <b>MAP:</b> |
|                              |             |

|              |   |   |  |               |
|--------------|---|---|--|---------------|
| Coordinates: | N | E |  | Signature(s): |
|              |   |   |  |               |

|   |                             |
|---|-----------------------------|
| <b>DAILY QUALITY CONTROL REPORT</b>     | DATE      Enter (DD/MMM/YY) |
| (ATTACH ADDITIONAL SHEETS IF NECESSARY) | REPORT NO                   |

|              |             |                |
|--------------|-------------|----------------|
| <b>PHASE</b> | CONTRACT NO | CONTRACT TITLE |
|--------------|-------------|----------------|

|                    |   |                           |
|--------------------|---|---------------------------|
| <b>PREPARATORY</b> | WAS PREPARATORY PHASE WORK PERFORMED TODAY?      YES <input type="checkbox"/> NO <input type="checkbox"/> |                           |
|                    | IF YES, FILL OUT AND ATTACH SUPPLEMENTAL PREPARATORY PHASE CHECKLIST.                                     |                           |
|                    | Schedule Activity No.   | Definable Feature of Work |
|                    |   |                           |
|                    |   |                           |

|                |   |                           |
|----------------|---|---------------------------|
| <b>INITIAL</b> | WAS INITIAL PHASE WORK PERFORMED TODAY?      YES <input type="checkbox"/> NO <input type="checkbox"/> |                           |
|                | IF YES, FILL OUT AND ATTACH INITIAL PHASE CHECKLIST.  |                           |
|                | Schedule Activity No.   | Definable Feature of Work |
|                |   |                           |
|                |   |                           |

|                  |   |  |
|------------------|---|--|
| <b>FOLLOW-UP</b> | WORK COMPLIES WITH CONTRACT AS APPROVED DURING INITIAL PHASE?      YES <input type="checkbox"/> NO <input type="checkbox"/> |  |
|                  | WORK COMPLIES WITH SAFETY REQUIREMENTS?      YES <input type="checkbox"/> NO <input type="checkbox"/>                       |  |
|                  | Schedule Activity No.   | Description of Work, Testing Performed & By Whom, Definable Feature of Work, Specification Section, Location and List of Personnel Present |
|                  |   |  |
|                  |   |  |
|                  |   |  |
|                  |   |  |
|                  |   |  |
|                  |   |  |
|                  |   |  |

| REWORK ITEMS IDENTIFIED TODAY (NOT CORRECTED BY CLOSE OF BUSINESS) |             | REWORK ITEMS CORRECTED TODAY (FROM REWORK ITEMS LIST) |             |
|--|-------------|---|-------------|
| Schedule Activity No.  | Description | Schedule Activity No.                                 | Description |
|  |             |   |             |
|  |             |   |             |
|  |             |   |             |

|   |             |
|---|-------------|
| REMARKS (Also Explain Any Follow-Up Phase Checklist Item From Above That Was Answered "NO"), Manuf. Rep On-Site, etc. |             |
| Schedule Activity No.   | Description |
|   |             |
|   |             |
|   |             |

On behalf of the contractor, I certify that this report is complete and correct and equipment and material used and work performed during this reporting period is in compliance with the contract drawings and specifications to the best of my knowledge except as noted in this report.

|  |                               |      |
|--|-------------------------------|------|
| <b>GOVERNMENT QUALITY ASSURANCE REPORT</b> | AUTHORIZED QC MANAGER AT SITE | DATE |
|--|-------------------------------|------|

|  |             |
|--|-------------|
| QUALITY ASSURANCE REPRESENTATIVE'S REMARKS AND/OR EXCEPTIONS TO THE REPORT |             |
| Schedule Activity No.  | Description |
|  |             |
|  |             |
|  |             |

|  |                                      |      |
|--|--------------------------------------|------|
|  | GOVERNMENT QUALITY ASSURANCE MANAGER | DATE |
|--|--------------------------------------|------|

| <b>PREPARATORY PHASE CHECKLIST</b>    |   | SPEC SECTION               | DATE   |
|---------------------------------------|---|----------------------------|--|
| (CONTINUED ON SECOND PAGE)            |   | Enter Spec. Section # Here |  |
| CONTRACT NO                           | DEFINABLE FEATURE OF WORK   | SCHEDULE ACT NO.           | INDEX #  |
| <b>PERSONNEL PRESENT</b>              | GOVERNMENT REP NOTIFIED _____ HOURS IN ADVANCE  |                            | YES <input type="checkbox"/> NO <input type="checkbox"/> |
|                                       | NAME  | POSITION                   | COMPANY/GOVERNMENT                                       |
|                                       |   |                            |  |
|                                       |   |                            |  |
|                                       |   |                            |  |
|                                       |   |                            |  |
|                                       |   |                            |  |
|                                       |   |                            |  |
| <b>SUBMITTALS</b>                     | REVIEW SUBMITTALS AND/OR SUBMITTAL REGISTER. HAVE ALL SUBMITTALS BEEN APPROVED?                 |                            | YES <input type="checkbox"/> NO <input type="checkbox"/> |
|                                       | IF NO, WHAT ITEMS HAVE NOT BEEN SUBMITTED? _____  |                            |  |
|                                       | ARE ALL MATERIALS ON HAND?  |                            | YES <input type="checkbox"/> NO <input type="checkbox"/> |
|                                       | IF NO, WHAT ITEMS ARE MISSING? _____  |                            |  |
|                                       | CHECK APPROVED SUBMITTALS AGAINST DELIVERED MATERIAL (THIS SHOULD BE DONE AS MATERIAL ARRIVES.) |                            |  |
| COMMENTS: _____                       |   |                            |  |
| <b>MATERIAL STORAGE</b>               | ARE MATERIALS STORED PROPERLY?  |                            | YES <input type="checkbox"/> NO <input type="checkbox"/> |
|                                       | IF NO, WHAT ACTION IS TAKEN? _____  |                            |  |
|                                       |   |                            |  |
|                                       |   |                            |  |
| <b>SPECIFICATIONS</b>                 | REVIEW EACH PARAGRAPH OF SPECIFICATIONS. _____  |                            |  |
|                                       |   |                            |  |
|                                       | DISCUSS PROCEDURE FOR ACCOMPLISHING THE WORK. _____   |                            |  |
|                                       |   |                            |  |
|                                       | CLARIFY ANY DIFFERENCES. _____  |                            |  |
| <b>PRELIMINARY WORK &amp; PERMITS</b> | ENSURE PRELIMINARY WORK IS CORRECT AND PERMITS ARE ON FILE.                                     |                            |  |
|                                       | IF NOT, WHAT ACTION IS TAKEN? _____   |                            |  |
|                                       |   |                            |  |
|                                       |   |                            |  |



| INITIAL PHASE CHECKLIST     |   | SPEC SECTION     | DATE               |
|-----------------------------|---|------------------|--------------------|
| CONTRACT NO                 | DEFINABLE FEATURE OF WORK   | SCHEDULE ACT NO. | INDEX #            |
| <b>PERSONNEL PRESENT</b>    | GOVERNMENT REP NOTIFIED _____ HOURS IN ADVANCE      YES <input type="checkbox"/> NO <input type="checkbox"/>          |                  |                    |
|                             | NAME  | POSITION         | COMPANY/GOVERNMENT |
|                             |   |                  |                    |
|                             |   |                  |                    |
|                             |   |                  |                    |
|                             |   |                  |                    |
|                             |   |                  |                    |
| <b>PROCEDURE COMPLIANCE</b> | IDENTIFY FULL COMPLIANCE WITH PROCEDURES IDENTIFIED AT PREPARATORY. COORDINATE PLANS, SPECIFICATIONS, AND SUBMITTALS. |                  |                    |
|                             | COMMENTS: _____   |                  |                    |
|                             |   |                  |                    |
| <b>PRELIMINARY WORK</b>     | ENSURE PRELIMINARY WORK IS COMPLETE AND CORRECT. IF NOT, WHAT ACTION IS TAKEN?  |                  |                    |
|                             |   |                  |                    |
|                             |   |                  |                    |
|                             |   |                  |                    |
|                             |   |                  |                    |
| <b>WORKMANSHIP</b>          | ESTABLISH LEVEL OF WORKMANSHIP.   |                  |                    |
|                             | WHERE IS WORK LOCATED? _____  |                  |                    |
|                             |   |                  |                    |
|                             | IS SAMPLE PANEL REQUIRED?      YES <input type="checkbox"/> NO <input type="checkbox"/>                               |                  |                    |
|                             | WILL THE INITIAL WORK BE CONSIDERED AS A SAMPLE?      YES <input type="checkbox"/> NO <input type="checkbox"/>        |                  |                    |
|                             | (IF YES, MAINTAIN IN PRESENT CONDITION AS LONG AS POSSIBLE AND DESCRIBE LOCATION OF SAMPLE)                           |                  |                    |
|                             |   |                  |                    |
| <b>RESOLUTION</b>           | RESOLVE ANY DIFFERENCES.  |                  |                    |
|                             | COMMENTS: _____   |                  |                    |
|                             |   |                  |                    |
|                             |   |                  |                    |
| <b>CHECK SAFETY</b>         | REVIEW JOB CONDITIONS USING EM 385-1-1 AND JOB HAZARD ANALYSIS  |                  |                    |
|                             | COMMENTS: _____   |                  |                    |
|                             |   |                  |                    |
|                             |   |                  |                    |
| <b>OTHER</b>                | OTHER ITEMS OR REMARKS _____  |                  |                    |
|                             |   |                  |                    |
|                             |   |                  |                    |
| _____                       |   | _____            |                    |
| QC MANAGER                  |   | DATE             |                    |



# NON-COMPLIANCE REPORT



|   |   |
|---|---|
| CONTRACTOR/RESPONSIBLE INDIVIDUAL FOR CORRECTIVE ACTION   | NOTICE NUMBER   |
| CONTRACT NUMBER AND TITLE   | DATE  |
| SPECIFICATION PARAGRAPH AND/OR DRAWING NUMBER   | NON-COMPLIANCE DATE   |
| REFERENCE (Shop Drawing, Certification, Work Plan, etc.)  |   |
| DESCRIPTION OF NON-COMPLIANCE   |   |
| METHOD FOR COMPLETING CORRECTIVE ACTION AND SCHEDULE  |   |
| CORRECTIVE ACTION IMPLEMENTATION/COMPLETION DESCRIPTION   |   |
| TETRA TECH SITE SUPERVISOR:<br><br>NAME: _____<br><br>SIGNATURE: _____<br><br>DATE: _____   | TETRA TECH QC MANAGER OR SITE QC REP:<br><br>NAME: _____<br><br>SIGNATURE: _____<br><br>DATE: _____ |
| USACE ACKNOWLEDGEMENT<br><br>NAME: _____<br><br>SIGNATURE: _____<br><br>DATE: _____   | USACE NOTES:  |
| This Notice does NOT authorize any work not included in the contract and shall not constitute a basis for additional payment or time. |   |

**DISTRIBUTION**

- Original - Tetra Tech QC Manager (Original)
- Copies to - Tetra Tech PM, USACE Representative or COR, Project File

## FIELD CHANGE REQUEST

FCR NO. \_\_\_\_\_ DATE INITIATED \_\_\_\_\_  
PROJECT \_\_\_\_\_  
CONTRACT NO. \_\_\_\_\_

REQUESTOR IDENTIFICATION  
NAME \_\_\_\_\_ ORGANIZATION \_\_\_\_\_ PHONE \_\_\_\_\_  
TITLE \_\_\_\_\_ SIGNATURE \_\_\_\_\_

BASELINE IDENTIFICATION  
BASELINE(S) AFFECTED  Cost  Scope  Milestone  Method of Accomplishment

AFFECTED DOCUMENT (TITLE, NUMBER AND SECTION)

DESCRIPTION OF CHANGE:

JUSTIFICATION:

IMPACT OF NOT IMPLEMENTING REQUEST:

PARTICIPANTS AFFECTED BY IMPLEMENTING REQUEST:

COST ESTIMATE (\$)   0   ESTIMATOR SIGNATURE \_\_\_\_\_  
PHONE \_\_\_\_\_ DATE \_\_\_\_\_

PREVIOUS FCR AFFECTED  YES  NO; IF YES, FCR NO. \_\_\_\_

USACE COTR: \_\_\_\_\_ DATE: \_\_\_\_\_

OHIO EPA PROJECT MANAGER: \_\_\_\_\_ DATE: \_\_\_\_\_

**RELEASE OF RAIN WATER FROM SECONDARY CONTAINMENT**

1. Date: \_\_\_\_\_
  
2. Building/Reference Number and Site Location: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
  
3. What is the water level height (in inches) inside the containment area? \_\_\_\_\_
  
4. Is a hydrocarbon (POL) sheen noted on the surface of the water? ..... Yes / No
  
5. Is a hydrocarbon (POL) odor noted for the water?..... Yes / No
  
6. If hydrocarbons (POL) present, what action was taken to remove the hydrocarbons prior to releasing the water (or was the water removed for off-site treatment and disposal)?  
\_\_\_\_\_  
\_\_\_\_\_
  
7. What was the approximate volume of water released from the containment (gallons or cubic feet)?  
\_\_\_\_\_  
\_\_\_\_\_
  
8. Following the release of the water, was the valve locked in the closed position and functioning (or drain plug screwed in)? ..... Yes / No
  
9. Note any deficiencies and action taken to have them corrected, including notification to Camp Ravenna Range Control (614-336-6041) and Environmental (6568) if POL was released to the environment.  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
  
10. Person(s) who completed this form: \_\_\_\_\_  
  
Phone: \_\_\_\_\_

**SECONDARY CONTAINMENT INSPECTION FORM**

1. Date: \_\_\_\_\_
2. Building/Reference Number and Site Location: \_\_\_\_\_  
\_\_\_\_\_
3. Are the access panels locked and secure? Yes / No
4. Are the valves and/or drain plugs intact and functional? ..... Yes / No
5. Are there two filters located at drainage points? ..... Yes / No
6. Are the filters saturated with POL or otherwise non-functional? ..... Yes / No
7. If yes to 6, did you replace the filters (if no explain in 14 below)? ..... Yes / No
8. Is the system intact with no noticeable breaches? ..... Yes / No
9. Are the ramps in place? ..... Yes / No
10. Is the system grounded? ..... Yes / No
11. Is there water in the system? ..... Yes / No
12. If yes on question 10, Complete "Release of Rain Water from Secondary Containment" form.
13. Is the system functional and acceptable for use? ..... Yes / No
14. Note any deficiencies and action taken to have them corrected, including notification to Camp Ravenna Logistics (614-336-6790) and Environmental (6568) if the system is not functional and needs to be dead lined.  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
15. Person(s) who completed this form: \_\_\_\_\_ Phone: \_\_\_\_\_

## Stormwater Construction Site Inspection Report

| General Information  |  |                |  |
|--|--|----------------|--|
| Project Name   |  |                |  |
| NPDES Tracking No.   |  | Location       |  |
| Date of Inspection   |  | Start/End Time |  |
| Inspector's Name(s)  |  |                |  |
| Inspector's Title(s)   |  |                |  |
| Inspector's Contact Information  |  |                |  |
| Describe present phase of construction   |  |                |  |
| <b>Type of Inspection:</b><br><input type="checkbox"/> Regular <input type="checkbox"/> Pre-storm event <input type="checkbox"/> During storm event <input type="checkbox"/> Post-storm event  |  |                |  |
| Weather Information  |  |                |  |
| <b>Has there been a storm event since the last inspection?</b> <input type="checkbox"/> Yes <input type="checkbox"/> No<br><b>If yes, provide:</b><br>Storm Start Date & Time:                      Storm Duration (hrs):                      Approximate Amount of Precipitation (in):   |  |                |  |
| <b>Weather at time of this inspection?</b><br><input type="checkbox"/> Clear <input type="checkbox"/> Cloudy <input type="checkbox"/> Rain <input type="checkbox"/> Sleet <input type="checkbox"/> Fog <input type="checkbox"/> Snowing <input type="checkbox"/> High Winds<br><input type="checkbox"/> Other:    Temperature: |  |                |  |
| <b>Have any discharges occurred since the last inspection?</b> <input type="checkbox"/> Yes <input type="checkbox"/> No<br><b>If yes, describe:</b>  |  |                |  |
| <b>Are there any discharges at the time of inspection?</b> <input type="checkbox"/> Yes <input type="checkbox"/> No<br><b>If yes, describe:</b>  |  |                |  |

### Site-specific BMPs

- Number the structural and non-structural BMPs identified in your SWPPP on your site map and list them below (add as many BMPs as necessary). Carry a copy of the numbered site map with you during your inspections. This list will ensure that you are inspecting all required BMPs at your site.
- Describe corrective actions initiated, date completed, and note the person that completed the work in the Corrective Action Log.

|    | BMP | BMP Installed?   | BMP Maintenance Required?                                | Corrective Action Needed and Notes |
|----|-----|--|--|------------------------------------|
| 1  |     | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No |                                    |
| 2  |     | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No |                                    |
| 3  |     | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No |                                    |
| 4  |     | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No |                                    |
| 5  |     | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No |                                    |
| 6  |     | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No |                                    |
| 7  |     | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No |                                    |
| 8  |     | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No |                                    |
| 9  |     | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No |                                    |
| 10 |     | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No |                                    |

### Overall Site Issues

Below are some general site issues that should be assessed during inspections. Customize this list as needed for conditions at your site.

|    | <b>BMP/activity</b>  | <b>Implemented?</b>                                      | <b>Maintenance Required?</b>                             | <b>Corrective Action Needed and Notes</b> |
|----|--|--|--|---|
| 1  | Are all slopes and disturbed areas not actively being worked properly stabilized?  | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No |   |
| 2  | Are natural resource areas (e.g., streams, wetlands, mature trees, etc.) protected with barriers or similar BMPs?            | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No |   |
| 3  | Are perimeter controls and sediment barriers adequately installed (keyed into substrate) and maintained?                     | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No |   |
| 4  | Are discharge points and receiving waters free of any sediment deposits?   | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No |   |
| 5  | Are storm drain inlets properly protected?   | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No |   |
| 6  | Is the construction exit preventing sediment from being tracked into the street?   | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No |   |
| 7  | Is trash/litter from work areas collected and placed in covered dumpsters?   | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No |   |
| 8  | Are washout facilities (e.g., paint, stucco, concrete) available, clearly marked, and maintained?                            | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No |   |
| 9  | Are vehicle and equipment fueling, cleaning, and maintenance areas free of spills, leaks, or any other deleterious material? | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No |   |
| 10 | Are materials that are potential stormwater contaminants stored inside or under cover?                                       | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No |   |
| 11 | Are non-stormwater   | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No |   |

|    | <b>BMP/activity</b>  | <b>Implemented?</b>                                      | <b>Maintenance Required?</b>                             | <b>Corrective Action Needed and Notes</b> |
|----|--|--|--|---|
|    | discharges (e.g., wash water, dewatering) properly controlled?   |  |  |   |
| 12 | Are spoil piles stabilized with vegetations and/or contained by silt fence or other appropriate and required controls? | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No |   |
| 13 | Are wastes properly stored with no risk of discharge?  | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No |   |
| 14 | (Other)  | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> Yes <input type="checkbox"/> No |   |

**Non-Compliance**

Describe any incidents of non-compliance not described above:

\_\_\_\_\_  
**Prepared By**

\_\_\_\_\_  
**Date**

\_\_\_\_\_  
**Reviewed By**

\_\_\_\_\_  
**Date**





**APPENDIX F**  
**PLACEHOLDER FOR OHIO EPA COMMENT LETTER**



April 8, 2024

**Received April 9, 2024**

**TRANSMITTED ELECTRONICALLY**

Mr. Kevin M. Sedlak  
Army National Guard  
Installations & Environment - Cleanup  
Branch IPA Designation  
1438 State Route 534 SW  
Newton Falls, OH 44444

RE: US Army Ravenna Ammunition Plt  
RVAAP  
Remediation Response  
Correspondence  
Remedial Response  
Portage County  
267000859276

Sent via e-mail to: [kevin.m.sedlak.ctr@army.mil](mailto:kevin.m.sedlak.ctr@army.mil)

**Subject: Ohio EPA Comments on the Draft Remedial Action Work Plan, Removal Action, at CC RVAAP-70 East Classification Yard, Ravenna Army Ammunition Plant Restoration Program, dated January 2024**

Dear Mr. Sedlak:

The Ohio Environmental Protection Agency (Ohio EPA) has received and reviewed the Draft Remedial Action Work Plan, Removal Action at t CC RVAAP-70 - East Classification Yard, Ravenna Army Ammunition Plant (RVAAP) Restoration Program, Portage/Trumbull Counties<sup>1</sup>. This plan was received via email at Ohio EPA's Northeast District Office (NEDO), Division of Environmental Response and Revitalization (DERR) on January 12, 2024. The plan was prepared by PIKA-Insight, JV for the Army National Guard in support of the RVAAP Restoration Program.

Comments on the document based on Ohio EPA review are provided below. Please provide responses to the enclosed comments in accordance with the Directors Findings and Orders.

**Comment 1: Section 5.4.3 Borrow Characterization Sampling**

Section 5.4.3 states in part: "(t)he borrow area soil analytical results will be screened against a provided list of facility background concentrations."

<sup>1</sup> <http://edocpub.epa.ohio.gov/publicportal/ViewDocument.aspx?docid=2704554>

US Army Ravenna Ammunition Plt RVAAP

April 8, 2024

Page 2 of 2

Ohio EPA does not accept the background values for polycyclic aromatic hydrocarbons (PAHs) developed for RVAAP projects. PAH results from the borrow soil shall be compared to the facility-wide clean up goals (CUGs) or U.S. EPA Regional Screening Levels (RSLs) (<https://www.epa.gov/risk/regional-screening-levels-rsls>) set at the risk and hazard goal of 1E-5 excess lifetime cancer risk, or hazard quotient of 1, for residential land use. Revise the removal action workplan to clarify that borrow soil results will be compared to facility wide CUGs or RSLs.

If you have any questions, please contact me at (330) 963-1109 or by e-mail at [craig.kowalski@epa.ohio.gov](mailto:craig.kowalski@epa.ohio.gov).

Sincerely,



Craig Kowalski  
Environmental Specialist  
Division of Environmental Response and Revitalization

CK/cm

ec: Nat Peters, USACE  
Katie Tait, OHARNG RTLS  
Steven Kvaal, USACE  
Angela Cobbs, Chenega Reliable Services  
Jennifer Tierney, Chenega Reliable Services  
Natalie Oryshkewych, Ohio EPA, DERR, NEDO  
Megan Oravec, Ohio EPA, DERR, NEDO  
Thomas Schneider, Ohio EPA, DERR, SWDO  
Brian Tucker, Ohio EPA, DERR, CO  
Tim Christman, Ohio EPA, DERR, CO



August 6, 2024

**Received August 7, 2024**

**TRANSMITTED ELECTRONICALLY**

Mr. Kevin Sedlak  
Restoration Program Manager  
ARNG-ILE Clean Up  
Camp James A Garfield JTC  
1438 State Route 534 SW  
Newton Falls, OH 44444

RE:    US Army Ammunition Plt RVAAP  
      Remediation Response  
      Plans  
      Remedial Action  
      Remedial Response  
      Portage County  
      ID # 267000859276

Sent via email to:

[Kevin.m.sedlak.ctr@army.mil](mailto:Kevin.m.sedlak.ctr@army.mil)

**Subject:    Former Ravenna Army Ammunition Plant  
              Draft Remedial Action Work Plan for CC RVAAP-70 East Classification Yard  
              Ohio EPA Comment and Request for Final**

Dear Mr. Sedlak:

The Ohio Environmental Protection Agency (Ohio EPA) has received and reviewed the Draft Remedial Action Work Plan for CC RVAAP-70 East Classification Yard at the Former Ravenna Army Ammunition Plant, Portage and Trumbull Counties, Ohio (Camp James A. Garfield)<sup>1</sup>. This document was received at Ohio EPA's Northeast District Office (NEDO), Division of Environmental Response and Revitalization (DERR) via email on January 17, 2024.

Ohio EPA provided comments on the draft Remedial Action Work Plan on April 8, 2024<sup>2</sup> and the Army National Guard (ARNG) provided response to comments on April 26th, 2024<sup>3</sup>. The document was prepared for the United States Army Corps of Engineers (USACE) on behalf of the National Guard Bureau by PIKA-Insight.

Ohio EPA has one final comment on the Remedial Action Work Plan. The ARNG will need to supply borrow source data to the agency with the Removal Action Summary Report.

<sup>1</sup> <http://edocpub.epa.ohio.gov/publicportal/ViewDocument.aspx?docid=2704554>

<sup>2</sup> <http://edocpub.epa.ohio.gov/publicportal/ViewDocument.aspx?docid=2798266>

<sup>3</sup> <http://edocpub.epa.ohio.gov/publicportal/ViewDocument.aspx?docid=2819084>

US Army Ammunition Plt RVAAP

August 6, 2024

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Ohio EPA has no further comments. Please provide the final Remedial Action Work Plan for CC RVAAP-70 East Classification Yard for Ohio EPA approval.

If you have any questions, please contact me at (330) 963-1109, or via email at [craig.kowalski@epa.ohio.gov](mailto:craig.kowalski@epa.ohio.gov).

Sincerely,



Craig Kowalski  
Site Coordinator  
Division of Environmental Response and Revitalization

CK/cm

cc: Katie Tait, OHARNG RTLS, CJAG  
Steve Kvaal, USACE Louisville  
Nathaniel Peters, USACE Louisville  
Angela Cobbs, Chenega Reliable Services  
Jennifer Tierney, Chenega Reliable Services  
Megan Oravec, Ohio EPA, NEDO DERR  
Natalie Oryshkewych, Ohio EPA, NEDO DERR  
Thomas Schneider, Ohio EPA, SWDO DERR  
Brian Tucker, Ohio EPA, CO DERR