

**FINAL  
ACCIDENT PREVENTION PLAN**

**REMEDIAL INVESTIGATION AT FOUR (4) KNOWN PFAS SITES  
AND PRELIMINARY ASSESSMENT/SITE INSPECTION AT  
SUSPECTED PFAS SITES  
FORMER SENECA ARMY DEPOT ACTIVITY  
ROMULUS, NEW YORK**

**Contract No. W912DY-20-D-0017  
Task Order No. W912DY21F0310**

**Prepared for:**



**U.S. Army Corps of Engineers, New York District**

**U.S. Army Engineering & Support Center, Huntsville**

**Prepared by:  
HydroGeoLogic, Inc.  
Northway 10 Executive Park  
313 Ushers Road  
Ballston Lake, NY 12019**

**February 2023**

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**EMERGENCY INFORMATION**

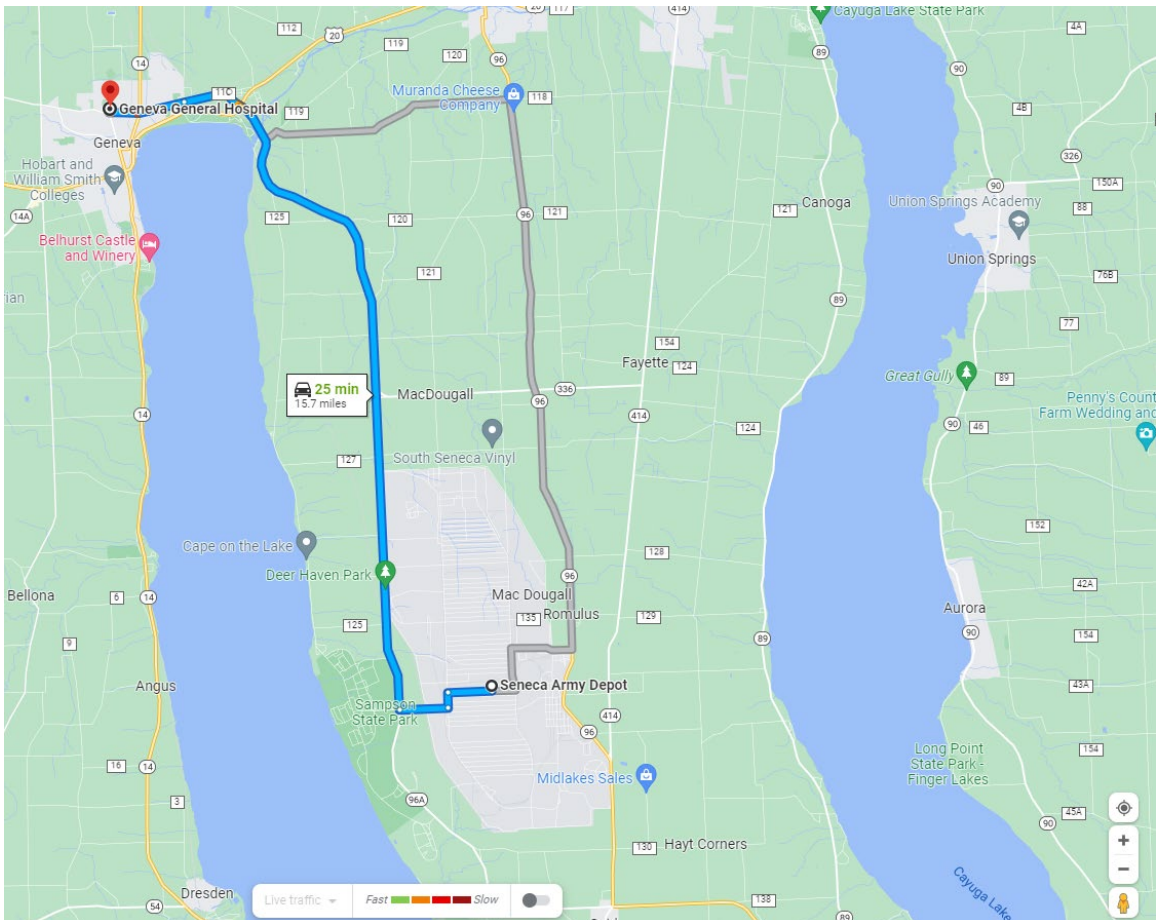
To facilitate the quick retrieval of information in the event of an emergency, this summary has been placed in the front of this Accident Prevention Plan. A copy must be posted in a conspicuous location on site and carried in field vehicles. For emergency situations, telephone contact should be made with the site point of contact who will then contact the appropriate response teams. In the event of a serious, life-threatening emergency, emergency personnel should be contacted prior to contacting the site point of contact.

**Emergency Telephone Numbers and Project Contacts**

<b>EMERGENCY (Police, Fire, Hospital)</b>		<b>911</b>
<b>Fire – Romulus Fire Department</b>	Operations Commander	(607) 869-5282
<b>Police – Seneca County Sheriff’s Office</b>	Patrol Section	(315) 220-3200
<b>Emergency Medical Services – Geneva General Hospital</b>		(315) 787-4000
<b>U.S. Army Corp of Engineers</b>		
MM Design Center Technical Lead Contracting Officer's Representative	Charles “Hud” Heaton	(256) 324-9097
Safety & Occupational Health Specialist Ordnance & Explosives Directorate	Anthony Isadore	(256) 895-8098
Project Manager	Chris Gallo	(917) 790-8230
Baseline Realignment and Closure Environmental Coordinator	Jim Moore	(347) 271-0226
<b>HydroGeoLogic, Inc. (HGL) and Parsons Team Contacts</b>		
HGL 24/7 Emergency number	(800) 341-3647	
HGL Program Manager	Derek Anderson	(706) 372-5138
HGL Senior Project Manager	John Blaum	(518) 369-1733
HGL Site Manager	Mike Jackson	(518) 877-3789
HGL Site Safety and Health Officer	Mike Jackson	(518) 877-3789
Corporate Health and Safety Director (CHSD)	Steve Davis, CSP, CIH	Cell: (865) 659-0499
Safety and Health Manager (SHM)/Project Certified Industrial Hygienist (CIH)	Edie Scala-Hampson, CIH, CHMM	Cell: (847) 409-6384
WorkCare 24/7 Incident Intervention Service (first aid and injury management guidance)	To be contacted for all work-related injuries and illnesses.	(888) 449-7787
Parsons Project Manager	Beth Badik	(617) 429-9624
Parsons Field Team Manager	Todd Belanger	(202) 591-6826
Parsons Project Safety, Health and Environmental Officer	Todd Belanger	(202) 591-6826

**Directions and map to nearest hospital:** Map and travel time to nearest hospital will be noted in Attachment 5 of the Site-Specific Site Safety and Health Plan.

1. Seneca Army Depot  
6600 NY-96, Romulus, NY 14541
2. Take Seneca Army Depot and Smith Vineyard Rd to NY-96A N  
7 min (1.8 mi)
3. Follow NY-96A N to Sessler Dr in Waterloo  
12 min (11.4 mi)
4. Take Border City Rd and E North St to your destination in Geneva  
6 min (2.4 mi)
5. Geneva General Hospital  
196 North St, Geneva, NY 14456



**Evacuation and rally points for severe weather:** HGL will coordinate a safe place of refuge with all site personnel to include rally points and evacuation methods to be identified on site.

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### Appendix A Site Safety and Health Plan

Attachment 1 – Activity Hazard Analysis Forms

Attachment 2 – Safety Personnel Proof of Training and Competency and Certifications  
Employee Medical Surveillance Program Participation

Attachment 3 – Fact sheet PFOA & PFOS Drinking Water Health Advisories

Attachment 4 – List of Prohibited and Acceptable Items for Sampling of PFAS

Attachment 5 – Hospital Map and Emergency Contacts List

Attachment 6 – HGL Standard Operating Procedures

201.506 (Personal Protective Equipment)

408.507 (MEC Anomaly Avoidance Support)

### Appendix B Health and Safety Field Forms

## LIST OF ACRONYMS AND ABBREVIATIONS

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°F	degrees Fahrenheit
3Rs	Recognize, Retreat, Report
ACGIH	American Conference of Governmental Industrial Hygienists
AED	Automatic External Defibrillator
AHA	Activity Hazard Analysis
ANSI	American National Standards Institute
APP	Accident Prevention Plan
BEI	Biological Exposure Indices
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CHMM	Certified Hazardous Materials Manager
CHSD	Corporate Health and Safety Director
CIH	Certified Industrial Hygienist
COR	contracting officer's representative
CPR	cardiopulmonary resuscitation
CSP	Certified Safety Professional
dBA	decibels on the A scale
DEET	n,n-diethyl-m-toluamide
DFW	definable feature of work
ECT	equivalent chill temperature
EM	Engineer Manual
EMS	Emergency Medical Service
ENG	Engineering (Form)
FS	field supervisor
GDA	government-designated authority
GPS	global positioning system
HAZWOPER	Hazardous Waste Operations and Emergency Response
HCP	Hazard Communication Program
HGL	HydroGeoLogic, Inc.
HSP	Health and Safety Program
HTRW	hazardous, toxic, and radioactive waste
MEC	munitions and explosives of concern
mph	miles per hour

## LIST OF ACRONYMS AND ABBREVIATIONS (continued)

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NCR	Nonconformance Report
NFPA	National Fire Protection Association
NIOSH	National Institute for Occupational Safety and Health
OSHA	Occupational Safety and Health Administration
PA	Preliminary Assessment
PFAS	per- and polyfluorinated alkyl substances
PFOA	perfluorooctanoic acid
PFOS	perfluorooctane sulfonate
PM	Project Manager
PPE	personal protective equipment
RAC	risk assessment code
RI	Remedial Investigation
SDS	Safety Data Sheet
SEDA	Seneca Army Depot Activity
SHM	Safety and Health Manager
SI	Site Inspection
SM	Site Manager
SOP	Standard Operating Procedure
SSHO	Site Safety and Health Officer
SSHP	Site Safety and Health Plan
TBD	To Be Determined
TLV	Threshold Limit Value (ACGIH 8-hour, time-weighted average)
TSM	tailgate safety meeting
USACE	U.S. Army Corps of Engineers
UXO	unexploded ordnance
WBGT	wet bulb globe temperature



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## A. SIGNATURE SHEET

<b>Prepared by:</b>	<u>Totino, Richard</u> Richard S. Totino HydroGeoLogic, Inc. Project Manager	<small>Digitally signed by Totino, Richard Date: 2023.02.09 11:33:11 -05'00'</small>	<u>2/9/2023</u> Date
<b>Approved by:</b>	<u>Blaum, John</u> John P. Blaum, P.E. HydroGeoLogic, Inc. Senior Project Manager	<small>Digitally signed by Blaum, John Date: 2023.02.09 13:28:21 -05'00'</small>	<u>2/9/2023</u> Date
<b>Review/ Concurrence:</b>	<u>Scala-Hampson, Edie</u> Edie Scala-Hampson CIH, CHMM HydroGeoLogic, Inc. Safety and Health Manager	<small>Digitally signed by Scala- Hampson, Edie Date: 2023.02.09 12:58:52 -06'00'</small>	<u>2/9/2023</u> Date

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## **B. BACKGROUND INFORMATION**

### **B.1 CONTRACTOR**

HydroGeoLogic, Inc. (HGL)  
Northway 10 Executive Park  
313 Ushers Road  
Ballston Lake, NY 12019  
(518) 877-0390

HGL (Corporate Office)  
11107 Sunset Hills Road Suite 400  
Reston, VA 20190  
(703) 478-5186

### **B.2 CONTRACT NUMBER**

Contract Number: W9128DY-20-D-0017  
Delivery Order: W912DY21F0310

### **B.3 PROJECT NAME**

Remedial Investigation (RI) at Four (4) Known Per- and Polyfluorinated Alkyl Substances (PFAS) Sites and Preliminary Assessment (PA)/Site Inspection (SI) at Suspected Sites

### **B.4 PROJECT**

#### **B.4a Project Description**

HGL prepared this Accident Prevention Plan (APP) for the Seneca Army Depot Activity (SEDA) to successfully complete a RI at four known PFAS sites and a PA/SI at 34 suspected sites as required under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This APP covers activities common to all installations and in accordance with Engineer Manual (EM) 385-1-1 and the health and safety scope of services. The Site Safety and Health Plan (SSHP) is included in Appendix A.

SEDA is a 10,587-acre former military facility located in the towns of Romulus and Varick, Seneca County, NY. The facility was owned by the U.S. Government and operated by the Department of the Army from 1941 to 2000. In 1999, the SEDA military mission was terminated, and the installation was closed in 2000. The U.S. Army has been the caretaker of the installation pending the closure of environmental investigations, studies, and remedial activities. As part of the SEDA closeout, approximately 8,250 acres have been transferred to new owners for reuse. The HGL Team, comprised of HGL and Parsons staff, will conduct an RI at 4 known PFAS sites and an SI at 34 suspected PFAS sites within SEDA.

#### **B.4b Scope of Work to be Performed**

The overall objective for this delivery order is to achieve USACE acceptance of the following;

- PA/Historical Records Review for SEDA to determine if there is historical evidence of PFAS use and potential release at additional sites and investigate the potential release at each site during the SI.
- Perform an SI at 34 suspected sites and any new sites discovered during the PA/Historical Records Review at SEDA to determine if there is sufficient PFAS contamination to warrant a future RI.
- Perform an RI at the four known PFAS sites and collect data of sufficient quantity and quality to determine horizontal and vertical extent of PFAS contamination.

The HGL Team will:

- Install new groundwater monitoring wells at RI and SI sites;
- Develop new groundwater wells;
- Collect surface and subsurface soil samples;
- Collect groundwater from existing and newly installed wells;
- Collect sediment and surface water samples; and
- Practice munitions and explosives of concern (MEC)/unexploded ordnance (UXO) anomaly avoidance on former munition sites where investigations will be conducted. Refer to HGL SOP 408.507 and the 3Rs (Recognize, Retreat, Report) Explosive Safety Education Program Guidance (Appendix A, Attachment 6).

### B.4c Project Map

An overall SEDA project map is provided below.

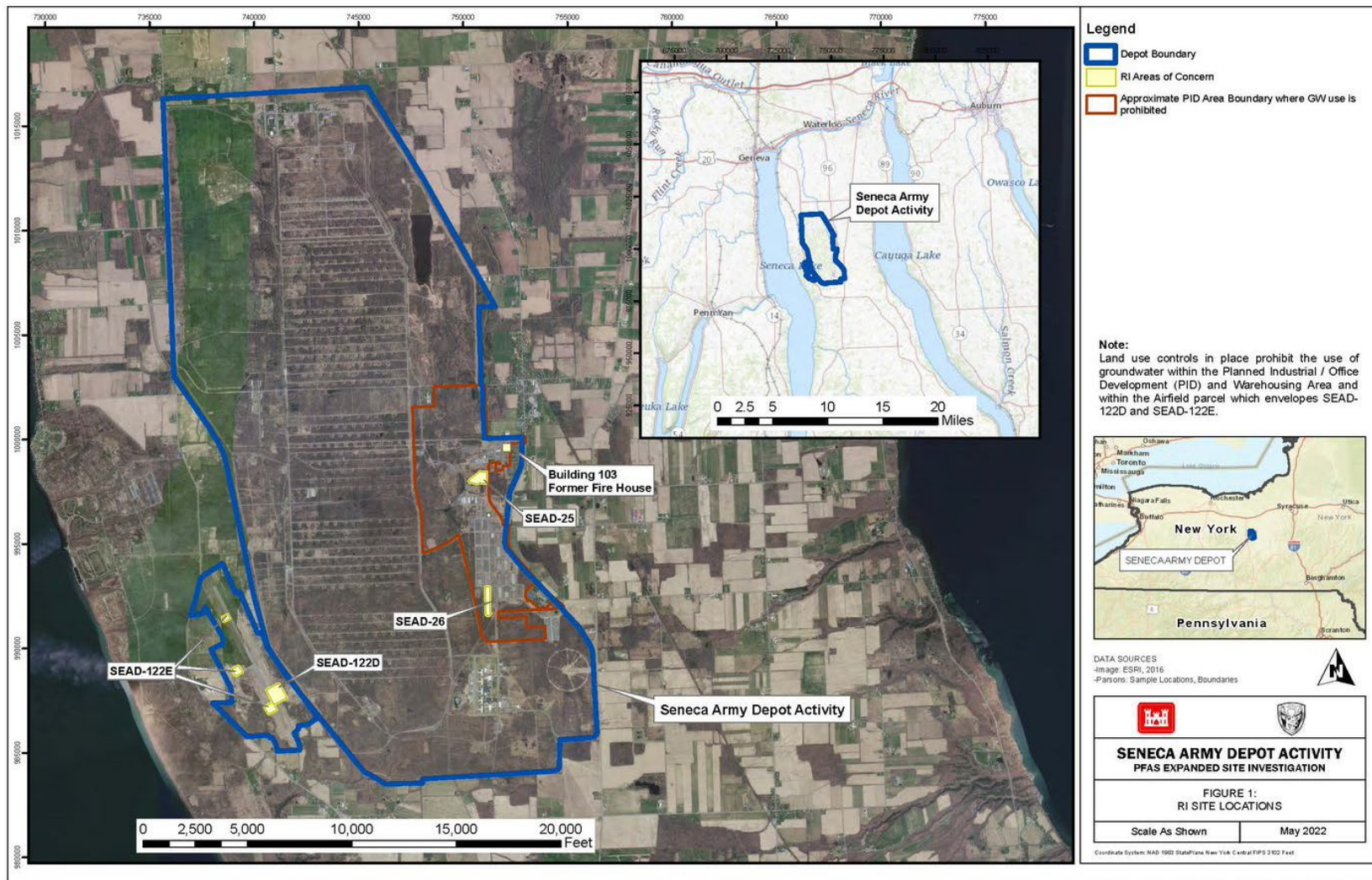


Figure B.1 Site Location Map

#### **B.4d Equipment to be Used**

- Vehicles
- Trimble® global positioning system (GPS) unit
- Air monitoring – photoionization detector
- Hand sampling tools
- Drilling equipment – direct-push technology, sonic drill rig (subcontractor)
- Split-spoons or macrocore samplers for subsurface soils
- Surface soil sampling equipment – hand augers, disposable sample scoops
- Monitoring well construction supplies
- Well sampling equipment
  - Water Quality Meter
  - Peristaltic pumps
  - Water level meter

A detailed list of equipment to be used for each definable feature of work (DFW) is provided in the Activity Hazard Analysis (AHA) for each task. AHAs are included in Appendix A, Attachment 1 in this APP.

#### **B.4e Anticipated High Risk Activities**

- Brush Cutting
- Drilling
- MEC/UXO avoidance on former munition sites listed:
  - SEAD-002-R-01, Explosive Ordinance Disposal Areas #2 and #3, OU11
  - SEAD-003-R-01, Explosive Ordinance Disposal Area #1 (SEAD 57), OU11
  - SEAD-16, Building 5311, Abandoned Deactivation Furnace, OU11
  - SEAD-17, Building 367, Active Deactivation Furnace, OU4
  - SEAD-23, Open Burning Grounds, OU2
  - SEAD-45, Open Detonation Grounds (SEAD-006-R-01), OU17
  - SEAD-46, Small Arms Range (aka 3.5-inch Rocket Range), OU11
  - SEAD-007-R-01, Grenade Range, OU11
- The Risk Assessment Codes (RACs), for the above-mentioned activities, will be reduced to low or medium with implementation of the controls that are included in the AHA forms.

#### **B.5 PHASES OF WORK AND HAZARDOUS ACTIVITIES REQUIRING AHAS/ PHASES/ ACTIVITIES/ DEFINABLE FEATURES OF WORK**

The following are the anticipated DFWs requiring AHAs:

- AHA Mobilization-Demobilization
- MEC/UXO Avoidance, Refer to HGL SOP 408.507 (Appendix A, Attachment 6) and the 3Rs (Recognize, Retreat, Report) Explosive Safety Education Program Guidance (Appendix A, Attachment 1).
- AHA General Site Work
- AHA Drilling
- AHA Drilling Sample Processing
- AHA Direct-Push Technology Drilling and Groundwater Sampling
- AHA Groundwater Monitoring Well Installation
- AHA Groundwater Well Development
- AHA Groundwater Well Sampling
- AHA Surface Water and Sediment Sampling
- AHA Sampling and Analysis
- AHA Decontamination of Equipment
- AHA Investigation-Derived Waste Management and Disposition
- AHA Surveying

The AHAs for the above activities are provided in Attachment 1 of the SSHP, which is Appendix A of this APP. The specific tasks required for each RI or SI phase are identified in the SSHP.

On USACE projects, the DFWs are to have three phases of control: Phase 1: Preparatory (requirement review, site inspection, preparatory meeting); Phase 2: Initial (job ready inspection before work begins and then again shortly after work has begun); and Phase 3: Follow-up (site supervisor performs daily monitoring of work to assure all job requirements are met). Preparatory reviews and inspections are referenced in the AHAs.

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## C. STATEMENT OF SAFETY AND HEALTH POLICY

### C.1 CORPORATE HEALTH AND SAFETY POLICY STATEMENT

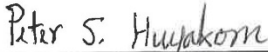


#### HGL's Commitment to Employee Health and Safety - 2023

HydroGeoLogic, Inc. (HGL) is committed to providing safe and healthful working conditions for our employees and we pursue this commitment through a management system based on ANSI/ASSP Standard Z10.0 - 2019 Occupational Health and Safety Management Systems; ISO 45001:2018, Occupational Health and Safety Management Systems; and the Occupational Safety and Health Administration's (OSHA's) Recommended Practices for Safety and Health Programs.

HGL takes the following actions to implement our health and safety management system:

- **Leadership:** Our senior managers have established a culture in which all our managers understand that ensuring safe work is a crucial part of their responsibility. Managers at every level are expected to provide the active leadership and budgeted resources required to facilitate a safe and positive work environment. Our managers participate in risk assessments, safety training, incident investigations, and other core functions of the health and safety program.
- **Commitment:** We maintain a formally established and fully funded corporate health and safety (H&S) organization managed by the Corporate H&S Director, who reports directly to the Chief Operating Officer. We also maintain written H&S procedures, guidance documents, and implementing documents such as standard operating procedures (SOPs), and we update these documents at least annually.
- **Employee Participation:** All personnel are encouraged and expected to offer safety suggestions, to report incidents, and to stop work, as needed, to prevent accidents. We conduct annual internal safety training, and employee feedback is an integral part of this training.
- **Planning:** We assess the hazards of each project and each new task, identify effective hazard controls, and document the hazards and controls. We ensure that health and safety plans and activity hazard analyses are reviewed by qualified specialists such as Certified Industrial Hygienists, Certified Safety Professionals, or Certified Health Physicists.
- **Training:** We ensure that personnel are adequately trained to perform their jobs safely by conducting annual training that is focused on our incidents, our lessons learned, and our improvement actions. In addition to this internally developed refresher training, our personnel complete other training, as appropriate, such as OSHA 40-hour HAZWOPER, OSHA 30-hour Construction, confined space entry, excavation competent person, and site-specific initial and routine (tailgate) training. We provide ongoing communication through monthly safety bulletins and monthly office staff meetings.
- **Diligence in Procurement:** We ensure that we work with qualified and safe subcontractors by screening potential subcontractors and excluding those that do not implement effective safety programs. This process addresses written programs, training, incident rates, and citations.
- **Readiness Reviews:** Prior to conducting fieldwork, we conduct readiness reviews as specified by our quality assurance program. The responsible manager conducts a meeting with project personnel to assess whether the required personnel, equipment, supplies, and documents are in place and to establish schedules for completing any missing components.
- **Verification:** Our site safety and health officers and corporate safety personnel regularly inspect work in progress and correct or suspend work that may be unsafe.
- **Management Review:** Our senior managers receive a monthly briefing from our Corporate H&S Director on incidents, incident trends, and pending improvement actions and provide feedback and direction aimed at seeking continual improvement.

  
Peter S. Huyakorn, Ph.D.  
President

1-6-2023

Date

## **C.2 HEALTH AND SAFETY PROGRAMS GOALS**

HGL considers worker safety a priority and has established a goal of zero incidents throughout the company. HGL strives to provide the education and tools required to deliver a safe and compliant work environment for its employees, project personnel, subcontractors, and the general public as the nature of the work allows. The Health and Safety Program (HSP) includes written policies and procedures; new employee orientation; project-specific training, refresher training, and customized classes; a project-specific medical monitoring program and worker exposure monitoring; an incident reporting system that includes reporting and evaluating near misses; review and approval of subcontractors' health and safety performance prior to hiring; and annual management-level health and safety performance goals and objectives.

## **C.3 SAFETY PROGRAM OBJECTIVES**

HGL's safety program objectives are as follows:

- The written safety program provided in the APP, SSHP, and AHAs shall conform to the standards and expectations of HGL, client needs and expectations, and comply with applicable regulations and consensus standards required by USACE EM 385-1-1.
- Permanent and temporary staff assigned to work at HGL sites will have read, understood, been given the opportunity to question, and sign off on these safety program documents. HGL and subcontractor staff will be briefed by the appropriate safety and health official before starting new or non-routine tasks on the field conditions to be faced, the tasks to be performed, the hazards expected and the control methods that will be used to eliminate or control those hazards to an acceptable level of risk.
- No employee or subcontractor shall be allowed to work on a task unless they have been trained and/or certified in accordance with regulatory requirements and approved for safety related responsibilities by the Site Safety and Health Officer (SSHO).
- Equipment shall be inspected within the frequency prescribed by the manufacturer, this APP, regulatory and consensus standards, and requirements of USACE EM 385-1-1. These inspections shall be documented.

## **C.4 CONTRACTOR ACCIDENT EXPERIENCE**

All HGL offices have received National Safety Council Perfect Record Awards for our most recent safety performance.

HGL qualified for the awards by executing our health and safety policy statement and management system, and specifically by including safety in task planning, staffing our projects with knowledgeable and skilled personnel, selecting good subcontractors, and by managing our work to ensure it is conducted safely. HGL achieved a rate of injuries and illnesses that was less than one-half of the average for similar companies, as reported by the Bureau of Labor Statistics. This excellent safety performance was achieved through the diligent efforts of HGL's management teams to identify and control hazards and through the prudent execution of our work by everyone.

HGL has successfully implemented a health and safety management system including management involvement, hazard recognition, hazard control, and employee input. The safety management system has been used to develop and implement our HSP and manage risks by defining responsibilities, practices, procedures, processes, resources, and setting objectives.

HGL tracks incidents and significant near misses to the organization and office or location. Offices and locations with excellent safety performance are recognized by presentation of National Safety Council Award Certificates. HGL also awards items such as HGL branded sweatshirts and jackets to crews, on a case-by-case basis, to encourage personnel in the development of a positive safety culture.

Occupational Safety and Health Administration (OSHA) 300 and 300 A forms are included as Figure C.1.

Figure C.1 OSHA 300 and 300 A Forms

**OSHA's Form 300 (Rev. 01/2004)**  
**Log of Work-Related Injuries and Illnesses**

**Attention:** This form contains information relating to employee health and must be used in a manner that protects the confidentiality of employees to the extent possible while the information is being used for occupational safety and health purposes.

Year 2022  
 U.S. Department of Labor  
 Occupational Safety and Health Administration

You must record information about every work-related injury or illness that involves loss of consciousness, restricted work activity or job transfer, days away from work, or medical treatment beyond first aid. You must also record significant work-related injuries and illnesses that are diagnosed by a physician or licensed health care professional. You must also record work-related injuries and illnesses that meet any of the specific recording criteria listed in 29 CFR 1904.8 through 1904.12. Feel free to use two lines for a single case if you need to. You must complete an injury and illness incident report (OSHA Form 301) or equivalent form for each injury or illness recorded on this form. If you're not sure whether a case is recordable, call your local OSHA office for help.

Form approved OMB no. 1218-0176

Establishment name HydroGeologic, Inc.

City Reston State VA

Identify the person			Describe the case			Classify the case				Enter the number of days the injured or ill worker was:								
(A) Case No.	(B) Employee's Name	(C) Job Title (e.g., Welder)	(D) Date of injury or onset of illness (mo./day)	(E) Where the event occurred (e.g. Loading dock north end)	(F) Describe injury or illness, parts of body affected, and object/substance that directly injured or made person ill (e.g. Second degree burns on right forearm from acetylene torch)	CHECK ONLY ONE box for each case based on the most serious outcome for that case:				Enter the number of days the injured or ill worker was:		Check the "injury" column or choose one type of illness:						
						Death	Days away from work	Remained at work		Away From Work (days)	On job transfer or restriction (days)	(M)						
						(G)	(H)	Job transfer or restriction (I)	Other recordable cases (J)	(K)	(L)	Injury (1)	Skin Disorder (2)	Respiratory Condition (3)	Poisoning (4)	Hearing Loss (5)	All other illnesses (6)	
1		Senior Program Administrator	10/25/2022	HyVee Grocery Store	Employee was picking up food for a business meeting and fell in the grocery store. Suffered strains and tearing in pelvic joint(s).				x			x						
<b>Page totals</b>						0	0	0	1	0	0	1	0	0	0	0	0	0

Be sure to transfer these totals to the Summary page (Form 300A) before you post it.

Public reporting burden for this collection of information is estimated to average 14 minutes per response, including time to review the instruction, search and gather the data needed, and complete and review the collection of information. Persons are not required to respond to the collection of information unless it displays a currently valid OMB control number. If you have any comments about these estimates or any aspects of this data collection, contact: US Department of Labor, OSHA Office of Statistics, Room N-3644, 200 Constitution Ave, NW, Washington, DC 20210. Do not send the completed forms to this office.

Page 1 of 1

Injury (1)  
 Skin Disorder (2)  
 Respiratory Condition (3)  
 Poisoning (4)  
 Hearing Loss (5)  
 All other illnesses (6)



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## **D. RESPONSIBILITIES AND LINES OF AUTHORITY**

### **D.1 ULTIMATE RESPONSIBILITY**

This section provides information on the project team, particularly those with worker health and safety responsibilities, competent persons, and the lines of authority for implementing this APP/SSHP. HGL has ultimate responsibility for the implementation and enforcement of the HSP for our own employees, all subcontractors and, all others on HGL worksites.

All HGL and subcontractor staff have stop-work authority (i.e., the authority to temporarily stop work if they observe an unsafe act or condition).

#### **Job Responsibilities**

HGL, as the prime contractor, will manage health and safety activities on this project in accordance with its corporate health and safety procedures and project-specific documents.

HGL's HSP is detailed in the Corporate Health and Safety Manual, available in print or electronically, and implemented/overseen by HGL's Corporate Health and Safety Director (CHSD), Steve Davis, Certified Industrial Hygienist (CIH), Certified Safety Professional (CSP). HGL managers and employees are expected to conduct business in compliance with governmental environmental and safety regulations, client programs, and company policies and procedures. The "rules of construction" for subcontractors apply, as specified in 29 Code of Federal Regulations (CFR) 1926.16.

### **D.2 PERSONNEL IDENTIFICATION AND ACCOUNTABILITY**

HGL will manage this project from the Ballston Lake, NY, office. Personnel will be drawn from this and other HGL offices as needed. The following personnel are designated to perform the stated health and safety functions:

- HGL Senior Project Manager (PM): John Blaum
- HGL Site Manager (SM)/Field Supervisor (FS): Michael Jackson
- HGL SSHO: TBD
- Safety and Health Manager (SHM), Project CIH: Edie Scala-Hampson CIH, Certified Hazardous Materials Manager (CHMM)
- CHSD: Stephen Davis, CIH, CSP

HGL's Occupational Medicine Physician is Peter Greaney, MD, President of WorkCare, Inc. Applicable certifications for key field project personnel responsible for safety will be included in Attachment 2 of the SSHP (Appendix A to this APP).

HGL policies and procedures regarding non-compliance with safety requirements follow Human Resources Performance Improvement Policy No. 45 (disciplinary procedures), which involves a three-step process of identification, performance improvement, and employment action.

Employees who violate a company policy, whose actions pose a threat to co-workers, whose actions constitute harassment, or who violate the law may have their employment terminated without following the HGL Performance Improvement Policy.

### **All Personnel**

All personnel have received new hire hazard communication safety training via HGL's e-learning video platform and have completed quizzes to verify understanding of safety and occupational health hazards. Each person is responsible for completing tasks in a safe manner, and for reporting any unsafe acts or conditions to the SSHO. All persons on site are responsible for continuous adherence to the APP/SSHP provisions during the performance of project work. All employees/personnel have the authority and responsibility to stop work on the site if an imminent hazard is observed. Even when a hazard is not imminent, employees/personnel should intercede if unsafe behavior or conditions are observed.

### **Program and Project Managers**

The HGL PM is the single point of contact with the USACE Contracting Officer's Representative (COR). The PM has the overall responsibility for the health and safety of personnel on the project, including:

- 1) Ensuring project team adherence to company policy and this APP/SSHP;
- 2) Confirming the proper review and distribution of health and safety documents;
- 3) Communicating with the SHM/CHSD/Project CIH for any variances or modifications in a timely manner;
- 4) Verifying that HGL personnel assigned to the project:
  - a. Are current participants in the medical surveillance program,
  - b. Have a current (within the last calendar year) respiratory fit test (if applicable), and
  - c. Have completed required safety and health training.
- 5) Determining that subcontractors have submitted required health and safety documents to the SSHO; and
- 6) Maintaining and reporting records of exposure hours and work-related accidents, injuries, and illnesses of HGL and subcontractors.

### **Site Manager/Field Supervisor**

The SM/FS directs site activities in accordance with the approved work plan; the APP/SSHP; and federal, state, and applicable local laws and regulations. The SM/FS has the responsibility and authority to halt or modify any working condition and to remove from the site any person who refuses to comply with the APP/SSHP or whose behavior endangers his or her own safety or the safety of others. Should the SM/FS become aware that a subcontractor is not following the APP/SSHP, the SM/FS will notify HGL and the subcontractor and require that the subcontractor begin immediate corrective actions. The SM/FS also may have collateral duties as the SSHO if there is no exposure to mechanical or explosive hazards (e.g., field walk-overs, surface soil sampling, long-term water sampling).



### **Corporate Health and Safety Director/Safety and Health Manager/Project CIH**

The CHSD/SHM and/or Project CIH will advise the PM and SSHO on safety and health issues that may have an impact on project operations, and provide technical assistance to the project team, based upon a review of the APP/SSHP and contributing documents. The CHSD/SHM or Project CIH is also responsible for reviewing and approving the APP/SSHP, suggesting modifications to the APP/SSHP, and reviewing and approving all changes and updates suggested by the field team. In addition, the CHSD/SHM and/or Project CIH is responsible for:

- Providing general safety and health program administration;
- Conducting field safety and health audits for APP/SSHP conformance;
- Establishing air-monitoring parameters based on expected contaminants;
- Establishing employee exposure monitoring notification programs;
- Establishing random and for cause drug and alcohol testing, as warranted;
- Providing technical assistance to the PM and the SM/FS/SSHO;
- Investigating significant incidents, illnesses, and near-misses; and
- Providing support for evaluation of subcontractor actions as they pertain to protecting the safety and health of workers and the public.

### **Occupational Medicine Physician and/or WorkCare Incident Intervention Service**

The occupational physician's responsibilities include:

- Performing medical surveillance as directed by 29 CFR 1910.120;
- Determining if medical clearance per 29 CFR 1910.120 is needed on an annual or biennial basis;
- Providing Medical Review Officer services for drug and alcohol test results review;
- Providing clinical consultation to injured employees prior to them traveling to an emergency room and consulting with treating physicians as necessary;
- Maintaining contact with injured employees to determine if there are issues or barriers to rapid healing, rehabilitation, and return to full duty status; and
- Providing technical support, as needed, for determination of project-specific medical monitoring.

### **Subcontractors**

The management of each subcontractor is responsible for the compliance of its personnel with applicable laws and regulations, applicable provisions of HGL's APP/SSHP as well as its own safety and health programs and AHAs. Subcontractors are directly responsible for the safety and health of their personnel. HGL will communicate significant site hazards and recommended controls to the subcontractor(s), review and comment on health and safety related document

submissions, and verify subcontractor staff qualifications to safely complete their tasks. HGL will monitor activities to confirm the subcontractors are performing their operations in accordance with the provisions of HGL's APP/SSHP, relevant HGL AHAs, the subcontractor's AHAs, and the contract documents.

All the same APP/SSHP requirements that apply to HGL personnel (e.g., training, substance abuse screening, and incident reporting) also apply to subcontractors and their field personnel.

Additional subcontractor safety responsibilities are detailed in Section E.2.

### **Visitors**

A Site Entry Log for visitors will be maintained on site (Appendix B). Visitors and unauthorized personnel will not be allowed within the regulated work areas area(s) without authorization from the SM/FS and without the knowledge of the SSHO.

Visitors requesting authorization to enter a designated regulated area must meet the additional requirements for appropriate medical exams, training, and personal protective equipment (PPE) as required by this APP/SSHP. All persons entering the site during site operations must first sign in at the HGL trailer and be given a site hazard briefing.

### **D.3 SITE SAFETY AND HEALTH OFFICER 30-HOUR TRAINING**

The SSHO will meet the administrative, educational, experience, and training requirements detailed in Section 01.A.17.a-d of EM 385-1-1.

The SSHO on a hazardous, toxic, and radioactive waste (HTRW) site will have completed 40 hours of HTRW training that meets 29 CFR 1910.120/29 CFR 1926.65 requirements for 40-hour initial, 3 days of supervised field experience, 8-hour supervisor training, and annual 8-hour refreshers. SSHOs will maintain competency through having taken 8 hours of documented formal, on-line, or self-study safety and health related coursework every year.

The specialized training includes topics such as, but not limited to, program management, medical and first aid, personal protective and safety equipment, hazardous or toxic agents and environments, material handling, rigging, fall protection, confined space entry, intrusive investigations/excavations, respiratory protection, hazard communication, hearing conservation, spill containment program, and health hazard monitoring procedures and techniques.

The SSHO will also have official OSHA 30-hour training. The SSHO will be present when field activities are being performed. If the SSHO must be off site for any reason, the alternate SSHO or designated representative will provide and fulfill the same roles and responsibilities.

The SSHO will provide day-to-day safety and industrial hygiene support; provide site safety orientations, oversee air monitoring, training and confirming appropriate PPE selection; conduct tailgate safety meetings (TSMs); conduct daily site safety inspections; confirm work zone delineations; verify training and medical clearances of HGL on-site personnel; and report activities to the PM and SHM/CHSD/Project CIH. The SSHO is the main contact in any on-site emergency. The SSHO is responsible for facilitating and coordinating the field implementation of the

APP/SSHP and has the responsibility and authority to halt or modify hazardous activities or working conditions. The SSHO has the authority to request (in accordance with the chain of command) the removal from the site any person who refuses to comply with the APP/SSHP or whose behavior endangers his or her own safety, or the safety of others. Should the SSHO become aware that a subcontractor's employee is not following the APP/SSHP, the SSHO will notify the most senior member of the relevant subcontractor's field team and require that the subcontractor begin immediate corrective actions.

The SSHO will oversee and conduct the job steps, such as briefings, training, and inspections involved with safety. Specific tasks assigned to the SSHO include:

- Verifying the APP/SSHP and AHAs are followed by HGL and subcontractors;
- Verifying the training and medical clearances of HGL on-site personnel;
- Verifying that the specified PPE is available and used;
- Participating in accident/incident and near-miss investigations;
- Reviewing pertinent safety and health documentation from the field for compliance with this APP/SSHP;
- Updating and reviewing AHAs, as indicated;
- Developing a schedule for safety observations and inspection checklists;
- Establishing appropriate site control zones and control the entry and exit points;
- Conducting or presenting initial site training;
- Conducting and documenting regular update training (TSMs);
- Conducting site safety inspections;
- Monitoring the field team for signs of thermal stress, fatigue, and exposure symptoms;
- Monitoring site weather conditions (heat, cold, inclement weather) and implementing hazard controls as needed;
- Knowing emergency procedures, evacuation routes, shelters, and telephone numbers;
- Reporting all near-miss, injury, illness, and vehicle accidents or incidents to the PM and CHSD within 24 hours, and confirming that an Accident Investigation Form is completed;
- Holding a safety stand-down meeting to conduct training at any time a deviation or degradation of safety warrants a review;
- Seeking guidance from the SHM/CHSD/Project CIH when unanticipated conditions develop; and
- Stopping work if any operation threatens worker or public safety or health.

#### **D.4 COMPETENT AND QUALIFIED PERSONS**

A competent person, as defined by 29 CFR 1926.651(k)(1), is required to supervise activities requiring excavation and trenching, fall protection, scaffolding, permit-required confined space entry, and lockout/tagout.

EM 385-1-1 also has additional requirements for competent persons for: cranes and rigging, trainers, rescuers, equipment operators, HTRW competent persons (lead, asbestos control, radiation), site safety and occupational health, hazardous energy, PPE selection use and maintenance and health hazard evaluation and control of chemical, physical, and biological agents.

Proof of competency are provided in Attachment 2 of the SSHP. The names of the competent person(s) required for a particular activity (e.g., excavation, scaffolding, fall protection, or other activities as specified by OSHA and EM 385-1-1 will also be identified and included in the AHA). Subcontractors shall provide licensing/qualifications of equipment operators and provide letters on company letterhead stating the competency on the equipment for which they are qualifying and the name of the qualified person.

#### **D.5 RISK MANAGEMENT PROCESS**

A Risk Management Process/Plan is required for every project. Detailed project-specific hazards and controls are provided by AHAs for each activity (DFW).

AHAs will be used to document a risk management process/plan by which the steps (procedures) required to accomplish a work activity/task are outlined and the actual/potential hazards of each step are identified. Safety measures, precautions, and controls will be identified and put into place to reduce the level of hazard for each step. The RAC assigned to the entire activity is the highest RAC of all the steps in the AHA.

AHA's are intended to be created by the contractor field crews/workers performing the work, with the assistance of others (SSHO, etc.), as needed. They are living documents and are intended to be created in the field and updated (by the workers) as needed.

Once accepted, the AHA will updated in the field by the field crews so that it constantly reflects current equipment, personnel, conditions, PPE, etc. Government-designated authority (GDA) acceptance of changes made to an AHA is not necessary if the changes do not increase the original RAC level for the activity, requirements are being met, and a copy is made available upon request.

#### **D.6 ACTIVITY SPECIFIC AHAS TO BE SUBMITTED AT PREPARATORY MEETINGS**

No work will begin on an activity (DFW) until the GDA has accepted the initial AHA.

#### **D.7 COMPETENT PERSON REQUIREMENT**

No work will be performed unless the competent person or the designated alternate competent person is present on the job site.

## **D.8 NONCOMPLIANCE WITH SAFETY REQUIREMENTS**

HGL policies and procedures regarding non-compliance with safety requirements follow our Human Resources Performance Improvement Policy No. 45 (disciplinary procedures), which involves a three-step process of identification, performance improvement, and employment action. Intentional or egregious acts that pose a threat to co-workers or violate legal requirements, may trigger immediate termination without following the HGL Performance Improvement Policy No. 45.

## **D.9 LINES OF AUTHORITY**

The lines of authority and communication for this task order are presented in Figure D.1. The PM has the overall responsibility for this project and will execute the contract in a manner consistent with this APP/SSHP and other contract-specific requirements. The PM will coordinate with the SM/FS, SSHO, and SHM/CHSD to complete the work in a manner consistent with this APP/SSHP.

The SM/FS directs site activities in accordance with the approved work plan; the APP/SSHP; and all federal, state, and local laws and regulations. The SM/FS is responsible for maintaining contact with the PM and the HGL SHM/CHSD for matters regarding project health and safety. The SM/FS reports to the PM.

The SSHO will monitor and confirm operations are conducted in accordance with this APP/SSHP, USACE requirements, and OSHA regulations. The SSHO communicates with the PM on technical matters during execution of project activities but reports directly to the SHM/CHSD or Project CIH with functional issues regarding safety.

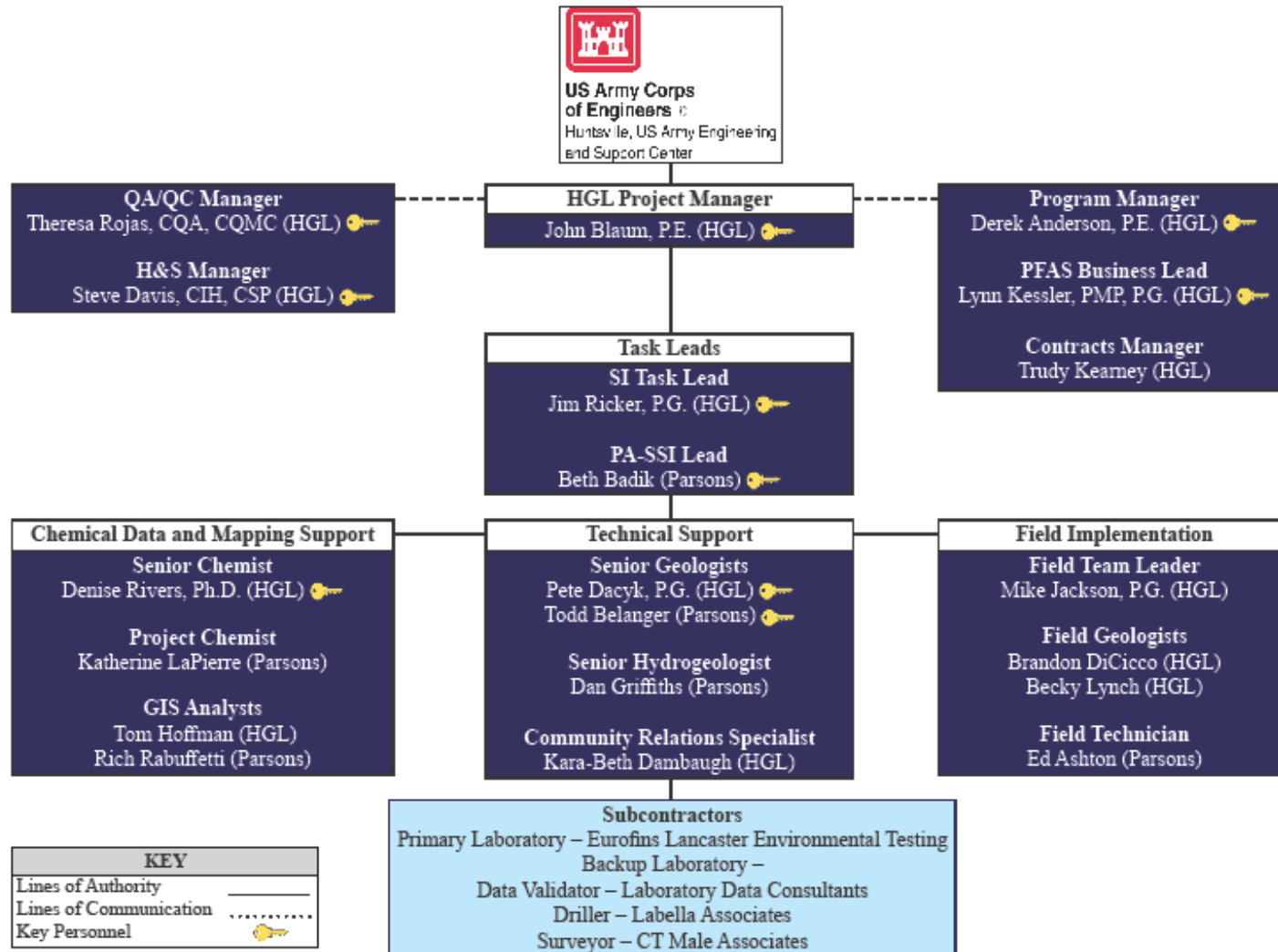
## **D.10 MANAGEMENT ACCOUNTABILITY**

Annually, written health and safety goals are developed for members of the senior, office, and project management team. The goals are designed to advance development of the HSP at HGL, involve all levels of employees, proactively address health and safety issues, and reinforce accountability for staff health and safety with the management team. Management personnel are held accountable for completion of these goals and compensation is tied to the success of an individual's performance in meeting the goals.

HGL holds managers and supervisors accountable for safety through implementation of Health and Safety Procedure No. 1 "Health and Safety Management System" and corporate policy number 7 "Employee Performance Appraisals." Manager and supervisor safety-related responsibilities are listed in Health and Safety Procedure No. 1 and the following is a partial list of those expectations:

- Be a role model for safety;
- Actively participate in safety and health activities at all levels;
- Promptly address any unsafe conditions or unsafe acts;
- Report all accidents, incidents and near misses; and
- Implement disciplinary procedures as warranted, for those violating safety rules.

**Figure D.1 HGL Team Proposed Organizational Structure**



## E. SUBCONTRACTORS AND SUPPLIERS

The subcontractors listed on Table E.1 will be used for the project.

### E.1 SUBCONTRACTOR AND SUPPLIERS

**Table E.1  
HGL Subcontractor List**

Expertise	Subcontractor Name
Primary Laboratory	SGS Orlando
Backup Laboratory	TBD
Data Validator	Laboratory Data Consultants
Driller	Labella Associates
Surveyor	CT Male Associates

TBD = to be determined

### E.2 SAFETY RESPONSIBILITIES OF SUBCONTRACTORS AND SUPPLIERS

Subcontractors report to the HGL PM and the SM/FS. Subcontractors conducting fieldwork on HGL projects shall establish an effective safety program applicable to their work and employees. Subcontractors will review and accept HGL’s APP/SSHP and prepare their own safety AHAs for presentation to HGL’s PM at least 10 days before site mobilization. All AHAs must be reviewed/accepted by the GDA. At a minimum, the subcontractor must meet the requirements of this APP/SSHP and provide safety equipment and safeguards suitable for the tasks and hazards involved. Subcontractors must provide the appropriate safety and health hazards and controls information for their project tasks to their personnel.

The subcontractor’s FS(s) and competent person(s) are responsible for performing daily safety inspections of their operations (29 CFR 1926.20[b][2]). A copy of this inspection report will be submitted to HGL’s SSHO each day.

Subcontractors using heavy earth-moving equipment must comply with the safety and inspection provisions in Section 18 and 18.G of EM 385-1-1. Subcontractors shall provide certification that heavy equipment is current with regard to maintenance and repairs and shall provide a thorough inspection according to Section 18 and 18.G -18.H of EM 385-1-1 before bringing the equipment on site. The subcontractor must also inspect the safety critical functions of heavy equipment daily. Inspection forms need to be completed by the designated equipment competent person.

The subcontractor shall provide documentation to the SSHO for equipment operators noting that they are authorized by their employer to operate the equipment, that they are fit to operate the equipment in a safe and efficient manner, and that they have been properly trained.

Each subcontractor must:

- Provide documentation for each on-site worker of successful completion of applicable training;

- Provide documentation of medical approval on an as-needed basis before the worker arrives on site;
- Provide all PPE required by their employees for this project [subject to the provisions of 29 CFR 1910.132(h)];
- Provide awareness-level training to affected HGL employees and other subcontractor workers regarding any material, equipment, or operation that may pose a hazard;
- Participate in the daily TSMs and in routine site inspection activities;
- Report immediately all unsafe conditions, faulty equipment, incidents, and close calls to HGL's SSHO so that lessons learned can be discussed at TSMs. All deficiencies must be tracked on the Safety and Health Deficiency Tracking Log through resolution; and
- Document that all equipment brought to the site is new or in like new condition, is inspected before use and routinely during use, and is maintained in safe working order.



## **F. TRAINING**

### **F.1 SAFETY INDOCTRINATION AND TAILGATE SAFETY MEETINGS**

Before the start of the project, field personnel assigned to this project will participate in an initial meeting with the PM, SM/FS, and SSHO to review and discuss the APP/SSHP and sign the APP acknowledgment form located at the beginning of the document. All new personnel assigned to the project after the initial safety meeting will review the APP, receive site-specific health and safety training, and sign the APP acknowledgement page. A record of all training will be maintained on a Safety Meeting Training Log (Appendix B).

The following subjects will be discussed during the initial safety indoctrination:

- Lines of authority, organization, and responsibilities;
- Communication methods and cell phone access locations;
- Site facilities, locations of utilities, access/egress, and work zones;
- Site chemicals and contaminants;
- Phases and sequence of work, equipment, and chemicals used;
- Potential physical and chemical hazards, hazard controls, and safe work practices;
- Potential weather-related hazards, controls, and monitoring;
- Lifting and material handling (if applicable);
- Required PPE;
- Fatigue management;
- Decontamination procedures;
- Hospital route;
- Evacuation routes, emergency response plan, places of safe refuge, and route to hospital;
- Emergency notifications;
- Emergency contact information;
- On-site persons certified in first aid and cardiopulmonary resuscitation (CPR);
- Spill kits, first aid kits, and fire extinguishers;
- MEC/UXO awareness;
- Fire prevention; and
- AHAs.

The SSHO will conduct a safety briefing for all HGL and subcontractor site personnel at least weekly or more often as appropriate based on-site activities and changing tasks or conditions. These briefings will be used as an opportunity to address site-specific safety issues, refresh workers on specific procedures, address new hazards and controls, and discuss any lessons learned. A Safety Meeting Training Log sheet is included in Appendix B.

Topics to be discussed at the TSM include:

- Daily activities;
- Potential health and safety issues;
- Changes in activities and operations;
- Changes in conditions;

- Weather conditions and heat/cold stress or other precautions;
- Methods of risk reduction;
- Required PPE for each task;
- Recent significant incidents;
- Biological hazards;
- Changes to the safety requirements; and
- Other applicable information that will increase safety awareness on the project.

Employee feedback regarding health and safety also will be solicited. Documentation of each meeting will be retained.

## **F.2 SAFETY AND HEALTH TRAINING**

The CHSD/SHM organizes and/or conducts yearly 8-hour Hazardous Waste Operations and Emergency Response (HAZWOPER) annual refresher training. HGL also has developed an 8-hour HAZWOPER supervisory training course that supervisors and SSHOs must complete. SSHOs also have, in addition to the above training, OSHA 30-hour Construction or General Industry training. Records of due dates, certifications, 30-hour OSHA training cards and 3-day supervised on the job training are maintained in HGL's Health and Safety certifications and training database. There are more than 130 professional, medical, safety courses/certifications and clearances that are tracked in the HGL training and certification database. Additional competent person and qualified person training is given per OSHA and construction standards, which includes fall protection awareness, fall protection competent person, and confined space entry. Periodic retraining/recertification dates are maintained in the HGL Training and Certification database and monitored to ensure up-to-date certificates are maintained.

Topics covered in the annual training include:

- 29 CFR 1910.120 overview;
- HGL's HSP;
- Medical surveillance program;
- Hazard communication standard;
- Hazards (chemical, biological, and physical);
- Site controls;
- PPE selection and use;
- Confined spaces/trenching and excavation;
- SSHP contents;
- Roles and responsibilities;
- Leadership and supervision;
- Emergency response;
- Spills;
- Air monitoring equipment;
- Respiratory protection;
- Lessons learned and work experience; and
- OSHA recordables and incident review.

In addition to the training listed above, workers on this task order will have successfully completed a First Aid/CPR/Automated External Defibrillator (AED) course every 2 years.

### **F.3 EMERGENCY RESPONSE TRAINING**

The SSHO and SM/FS will review site-specific emergency action procedures as a part of the site safety orientation training and periodically as a component of site indoctrination and TSMs. All site personnel shall be trained in the emergency response procedures. This training shall include the following:

- Identification of the emergency coordinator(s) and contacts;
- Procedures for emergency communications and notifications;
- Procedures for contacting emergency services;
- Locations of functioning communication devices for personnel not equipped with cellular telephones and for personnel working in areas with limited or no cellular telephone reception;
- Locations of emergency telephone contact lists;
- Locations of emergency medical facilities;
- Site emergency evacuation procedures;
- Locations of emergency evacuation rally points and safe refuge areas; and
- Identification of trained first aid and CPR providers.

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## **G. SAFETY AND HEALTH JOBSITE INSPECTIONS**

### **G.1 RESPONSIBILITIES FOR DAILY SITE SAFETY INSPECTIONS**

#### **G.1a Personnel Responsible for Safety Inspections**

Job site safety and health inspections will be conducted by SSHOs. Other personnel, quality control officers, PMs and SHM/CHSD, or Project CIH may also conduct inspections. The following reviews shall be performed:

- The SSHO shall inspect the job site daily or more often if warranted by ongoing activities. Findings shall be documented on the Daily Project Safety Inspection Report (Appendix B).
- The PM or SHM/CHSD or designee may conduct unannounced job site safety audits.

#### **G.1b Inspector Training/Qualifications**

The name and qualifications of the SSHO qualifications can be found in Attachment 2 of the SSHP.

#### **G.1c Frequency of Inspections**

Site safety inspections will be conducted daily and recorded on a Daily Project Safety Inspection Report (Appendix B).

#### **Portable Fire Extinguishers**

The SSHO is responsible for performing monthly inspections of and obtaining annual service for portable fire extinguishers that are not mounted on vehicles or equipment. The inspections shall be documented on the inspection tag on each extinguisher. Vehicle and equipment operators are responsible for the daily inspection of fire extinguishers on vehicles or equipment. Each field crew will have one portable fire extinguisher (10-B:C) in their field vehicle.

#### **First Aid Kits**

First aid kits shall be inspected monthly by the SSHO, or designee. A seal may be placed on first aid kits to allow for less frequent inspections. If the seal is not broken, then an inspection is not required for up to 3 months.

#### **Eye Wash**

An emergency eyewash unit capable of delivering at least 0.4 gallons of water per minute for 15 minutes or more shall be located immediately adjacent to employees who handle hazardous or corrosive materials, such as treatment plant operational chemicals. The emergency eyewash units shall be inspected monthly by the SSHO. The inspection shall be documented on the inspection tag on each eyewash station.

### **G.1d Inspector Forms**

See Appendix B for Daily Project Safety Inspection Report forms.

### **G.1e Deficiency Tracking System**

All unsafe conditions, faulty equipment, incidents, and close calls will be immediately reported to HGL's SSHO so that lessons learned can be discussed at TSMs. All safety deficiencies identified during the inspection processes shall be tracked until closed on the Safety and Occupational Health Deficiency Tracking Log (Appendix B), which will be retained in the field or facility office. The log will include the following:

- Date deficiency is identified,
- Description of deficiency,
- Name of person responsible for correcting deficiency,
- Projected resolution date, and
- Date resolved.

## **G.2 EXTERNAL INSPECTIONS**

USACE or regulatory agencies may, at any time, perform inspections or audits of HGL's field health and safety practices. The PM and SHM/CHSD shall be immediately notified when a regulatory agency inspector requests access to an HGL work site for the purpose of a compliance inspection.

The COR shall be immediately notified by the PM of any regulatory agency inspection. The inspection should not be delayed due to non-availability of the COR or their designee. If a citation is issued to HGL or its subcontractors, a copy of the citation will be submitted to the USACE COR along with a Corrective Action Plan.

## **H. MISHAP REPORTING AND INVESTIGATION**

### **H.1 EXPOSURE DATA (LABOR-HOURS WORKED)**

The PM is responsible for reporting and maintaining records of all exposure and accident experience incidental to the work (this includes exposure and accident experience of HGL and its subcontractors) and reporting same to USACE. At a minimum, these records shall include exposure work hours and equivalent as prescribed by 29 CFR 1904. This exposure data will be provided to USACE, upon request, using the USACE Prime Contractor Monthly Record of Work-Related Injuries/Illnesses and Exposure Form (Appendix B).

### **H.2 MISHAP INVESTIGATIONS, REPORTS AND LOGS**

#### **H.2a Personnel Responsible for Completing Investigations**

Project personnel are required to report near misses, injuries, illnesses, and incidents to the SM/FS and SSHO immediately. The SSHO will summon/arrange appropriate medical care if required.

On-site management personnel will investigate near misses, injuries, illnesses, and incidents and accidents to identify unsafe acts or conditions that occurred or existed at the time of the accident. Corrective actions will be determined and implemented to prevent recurrence of the incident, and responsibility for implementation of corrective actions will be assigned. The final report and required forms will be submitted to the PM for signature and forwarded to the USACE COR. Engineering (ENG) Form 3394 (Appendix B) will be completed and submitted to the COR within 5 working days of the incident.

In the event an accident results in an employee being sent to a doctor, a medical assessment/work capacity form will be completed by the attending physician on the date of treatment and will state one of the following conditions:

- Employee may return to full duty work,
- Employee may return to limited duty (with type of limitations), and
- Employee is unable to return to work.

Supervisors are responsible for reporting all recordable mishaps to the GDA within 24-hours after notification from the affected employee. HGL is required to report:

- Property damage (exceeding \$5,000 is recordable);
- Days Away Injuries;
- Days Away Illnesses; and
- Restricted/Transfer Injuries.

A copy of the completed medical assessment/work capacity report must accompany the completed accident reports.

At the discretion of the COR, HGL will provide a face-to-face briefing of all lost work-day accidents to USACE within 5 days of the accepted ENG Form 3394. HGL management, the SSHO, and others deemed necessary will be present at the briefing.

## **H.2b Immediate Notification Requirements**

The SM/FS will make immediate notifications to the PM, SHM/CHSD and others as required by HGL's incident reporting policy. The SSHO will complete and submit the HGL Incident Report form within 24-hours as directed by HGL's HSP Incident Reporting Policy. The PM will report incidents to the COR and USACE PM as soon as the facts are known, but no longer than 24 hours after the incident. The appropriate forms to be completed are in Appendix B and include the following:

- Automobile Accident Report;
- HGL Incident Report;
- USACE ENG Form 3394 – USACE Accident Investigation Report (submitted within 5 days); and
- Personnel Accident Notification Form.

Subcontractors and other non-HGL employees shall report all close calls, equipment property damage, injuries, or illnesses. The subcontractor's safety personnel shall investigate and analyze the incident so that the situation can be corrected. A copy of the subcontractor's investigation report shall be made available to the HGL PM. The PM will then forward the report to the SHM/CHSD/Project CIH.

Immediate notification of USACE through the HGL PM is required for:

- A fatal injury;
- An arc flash incident;
- Three or more individuals become ill or have a medical condition that is suspected to be related to a site condition, or a hazardous or toxic agent on the site. OSHA must be contacted for all: work-related fatalities, work-related in-patient hospitalizations of one or more employees; and work-related amputations and eye loss. Employers must report work-related fatalities within 8 hours of finding out about it. For any in-patient hospitalization, amputation, or eye loss, employers must report the incident within 24 hours of learning about it. The CHSD is responsible for contacting OSHA;
- The hospitalization of one or more people resulting from a single occurrence; and/or
- Property damage of \$500,000 or more.

The HGL Program Manager will notify USACE immediately when the following injury classifications have been made:

- A permanent total disability, or
- A permanent partial disability.



## **H.2c Notification to COR of Completed Corrective Actions**

Work, field testing, laboratory testing, or materials not conforming to the specifications or contract requirements, including non-compliances and deficiencies identified by USACE will be documented on a Nonconformance Report (NCR) as presented in the Contractor Quality Control Plan. At a minimum, the NCR will detail the nonconforming conditions, recommended corrective action(s), and disposition of the corrective action(s). HGL will immediately correct any non-compliances or deficiencies identified by USACE. The NCR will remain open until the nonconforming condition has been satisfactorily resolved and verified as acceptable by USACE. RMS3, the government's Resident Management System, will be used to track non-conformances/deficiencies. Deficiency tracking and corrective maintenance will be discussed during scheduled progress meetings, which will ensure that the list of non-conformances/deficiencies is kept up to date. During these meetings, discussions will be held on the inspection, addition, re-inspection, and ultimate removal of items from the deficiency list. Meeting minutes will be recorded, and copies of the minutes will be given to USACE.

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## I. PLANS REQUIRED BY THE USACE SAFETY MANUAL

The following sections address the plans required by USACE in the *Safety and Health Requirements Manual* (USACE, 2014)

### I.1 FATIGUE MANAGEMENT PLAN

#### Excessive Work Hours

The following workday duration limitations for hours worked on the projects are in effect:

- Personnel working on site, including those who are operating hoisting equipment or mobile construction equipment, may work up to 12 hours at the site, which does not include travel time to/from their home/motel or uncompensated lunch breaks. This workday duration is subject to reduction by the other requirements and factors described in the bullets below. The 12-hour limit is primarily due to motor vehicle driving restrictions.
- Personnel, while on duty, shall not operate motor vehicles after being in a duty status (regardless of their role or function) for more than 12 hours during any 24-hour period without at least 8 consecutive hours of rest. Personnel may work an additional 2 hours at the motel or their home (for a total 14-hour day), though still subject to reduction by the other requirements and factors described below. A minimum of 8 consecutive hours shall be provided for rest in each 24-hour period.
- No employee may drive continuously for more than 10 hours in any single on-duty period (continuous period of more than 10 hours in any 24-hour period without at least 8 consecutive hours of rest).

For each project effort, the SSHO is responsible for adjusting the workday duration within these limits. The following factors will be considered by the SSHO for adjusting the workday duration:

- Time of year (e.g., reduce workday duration because there is less daylight in winter).
- Temperature/weather (e.g., reduce workday duration when the temperature is very cold, very hot, or very windy).
- Type of work (e.g., reduce workday duration for personnel involved in physically demanding phases of work).
- Individual personnel limitations (e.g., reduce workday duration for personnel with minor head colds, suffering from temporary effects of allergies, or showing signs of heat stress).

The controls established at the worksite will include.

- Training that includes signs and symptoms of fatigue, habits and actions the worker may take to avoid fatigue, actions workers should take if they observe fatigue in a co-worker, and controls in place to prevent fatigue.
- Discussion of driving to and from work and any possible mitigation of driving as a factor of fatigue.

- Discussion of controls for fatigue that will include work scheduling (limit number of consecutive night shifts); rotating jobs to prevent repetitive work; breaks at critical times in the work cycle; control of environmental factors (heat, cold, use of PPE); buddy check-in for individuals working alone; and alternate transportation for long commutes.

Fieldwork will be performed at various times of the year. See the SSHP (Appendix B) for controls.

## **I.2 EMERGENCY RESPONSE PLAN**

All incidents, including equipment damage, property damage, vehicle accidents, work-related injuries and illnesses (including subcontractors and temporary employees), and close calls (with significant potential for harm) must be reported verbally to an HGL manager or supervisor immediately after the occurrence. If an employee has a work-related injury or illness, WorkCare should also be contacted as soon as practical at (888) 449-7787 (following initiation of emergency care, as needed). Ideally, WorkCare should be contacted within the first hour after the incident.

If an incident involves off-site medical care or significant equipment damage, the PM, Office Manager, Regional Manager, and the CHSD must be notified immediately after the initial response (first aid, transport to hospital, containment of spill, etc.).

In the event of a fire, the first priority is to ensure that personnel evacuate and that the nearest fire department is notified. HGL personnel should attempt to extinguish a fire only if the fire is clearly minimal and can safely be extinguished with an available fire extinguisher.

### **I.2a Procedures and Testing and Contingency Plan for Fire and Severe Weather**

Upon mobilization to the project, the SM/FS and SSHO shall verify that personnel have an effective means of communications (cellular telephone or two-way radio) from every work area on the site. Before project fieldwork commences, the provisions for emergency response will be confirmed. Emergency communication equipment will be tested. The route(s) to the local medical facility(ies) will be confirmed to be accessible and practical. A designated site emergency assembly point will be established, and the location communicated to the field team during the initial site safety orientation.

In the event an emergency arises, the appropriate immediate response must be taken by the first person to recognize the situation. The field crew shall contact emergency response services by calling 911 (or location specific emergency communication system) and then immediately notify the SSHO of the incident. The authority to order personnel to evacuate the area rests with the SM/FS, SSHO or a qualified USACE representative.

In the event site evacuation is required, a continuous, uninterrupted horn will be sounded for approximately 10 seconds. Air horns in the work area or a vehicle horn will be used. Continuous communication will be maintained between the site and the main office. Emergency alert systems shall be tested periodically. If employees are working alone in remote locations, a means of contact must be provided. Personnel shall evacuate to a designated safe, upwind location and the crew leader will perform a head count. Once the head count has been performed, the SSHO will be provided a status report of the event.

During any on-site emergency, work activities in the affected area will cease until the emergency is brought under control.

The SSHO or designated on-site personnel will be responsible for checking weather conditions at a minimum of twice daily. When there are warnings or indications of impending severe weather (heavy rains, thunderstorms, damaging winds, lightning, etc.), weather conditions will be monitored using the National Oceanic and Atmospheric Administration weather radio all hazards network or similar notification system. Appropriate precautions shall be taken to protect personnel and property from the effects of the severe weather. A safe place of refuge will be discussed during the TSMs.

### **Thunder and lightning**

If lightning is observed, all load handling equipment, drill rigs, work on elevated platforms or scaffolding, roofing activities, tree trimming activities or work in open areas shall stop. A determination shall be made as to the storm proximity of the operation being performed. Once lightning is seen, count the number of seconds until you hear the thunder. Divide number of seconds by 5 to get the distance the lightning is away from you. If lightning is 10 miles away or less, work should stop until 30 minutes after the last audible thunder or visible flash of lightning. An alternative approach is to use the “30-30 Rule” when visibility is good and there is nothing to obstruct the view of the thunderstorm. When lightning is seen, the time until thunder is heard is counted. If that time is 30 seconds or less, then the thunderstorm is within 6 miles and is dangerous. Activities with exposure shall cease at that time and shall not resume until at least 30 minutes after the last clap of thunder.

### **I.2b Spill Plans**

Subcontractors will maintain the following equipment and materials on site for use during spill response activities:

- Polyethylene sheeting,
- Spill control materials,
- Drums, and
- Shovels and assorted hand tools.

Potential spill events include vehicle and equipment fuels, oils and other fluids which may occur during fueling operations or because of equipment leaks. Materials that may cause contamination will be present in radiators, fuel tanks, hydraulic reservoirs, fuel cans, and oil cans. To prevent leaks:

- Vehicles and equipment will be inspected daily and immediately taken out of service in the event of leaks.
- Cans containing fuels or oils will be labeled and stored appropriately.
- Non-emergency maintenance of heavy equipment or vehicles will not be performed on site. In the event on-site equipment maintenance is required, precautions such as buckets and plastic sheeting will be used to so that contaminants are not released to the environment.

Waste stockpiles and other potential spills are not anticipated on this project.

If a hazardous material spill is observed at the site, the cause of the spill will be addressed (if possible) as soon as it is safe to do so. After addressing the cause, spill control materials will be applied to the spill if appropriate. The SSHO will then be notified. The SSHO will assess the magnitude and potential impact of the spill, including if the material represents a reportable quantity. Fuels or oils that are spilled in excess of 100 pounds or 25 gallons will be immediately reported to HGL's chain of command and the appropriate fire department. The fire department will be called to assist with spills that cannot be safely handled by on-site personnel. The SSHO will then notify the PM, and the HGL CHSD. The PM will notify the COR.

If a spill occurs during fueling operations, the vehicle tank will be capped, and fuel dispensing device moved away from the equipment. Spill control materials will be applied to the spill (usually kitty litter) and the solidified spill dug up and transferred to 55-gallon metal open top drums. The drums will be labeled with the location, date, time, and contents.

For other spills that can be safely handled by on-site personnel, the spilled material will be cleaned up when it is safe to do so as follows:

- The spill area will be approached from upwind.
- The spilled material will be identified based upon the source of the material (fuel tank, labeled container, etc.). The SM/FS and/or SSHO will review the Safety Data Sheets (SDS). The potential hazards will be evaluated to determine the proper personal protection levels, methods, and equipment necessary for response.
- Evacuate, isolate, and secure the spill area, if necessary.
- Work zones shall be set up.
- Spill containment will initially be made without entering the immediate hazard area. Priority will be given to prevent the spilled material from entering any streams, ditches, or sewers.
- Entry to the spill area for cleanup will be made by personnel with the proper PPE, training, methods, and equipment necessary to perform the work. Spill cleanup and collection typically involves shoveling or excavating the affected soil into drums or larger containers.

The spilled material shall be stored for disposal. Disposal options of the material will depend on the amount and type of material.

### **I.2c Fire Fighting Plans**

In the event of a fire or explosion, the SSHO will notify the [on-base or city] fire department and Emergency Medical Services (EMS), contact the HGL PM, and escort the response personnel to the location of the fire or explosions. The SSHO will determine the extent of the fire, use available on-site fire extinguishers on incipient stage fires only and provide emergency first aid as needed. Site personnel will not fight fires containing explosives. The responding fire department personnel will be informed of the nature of the fire and if explosives are present.

### **I.2d Posting of Emergency Telephone Numbers**

Emergency contact information and a map showing the route from the project site to the hospital are shown on pages 2 and 3 of this APP and are provided in Attachment 5 of the SSHP. A copy of this emergency information will be kept in all field vehicles and posted on-site offices bulletin boards (as applicable).

### **I.2e Man Overboard Ship**

Not applicable since there will be no boats, vessels, or skiffs used at the project under the current scope of work.

### **I.2f Plan for Prevention of Alcohol and Drug Abuse**

HGL implements a Substance Abuse Deterrence Program in support of the corporate drug-free workplace policy and will enforce the requirements of a drug-free workplace. The program is designed to maintain a safe workforce and prohibits the following:

- Engaging in any drug activity that is prohibited by federal, state, or local law. This includes, but is not limited to, the possession, use, manufacture, distribution, or sale of illegal drugs at any time or at any place; and
- Working under the influence of alcohol or illegal drugs.

The deterrence program includes post-offer/pre-employment drug testing, random testing, and post-accident testing when it appears that substance intoxication caused or contributed to the accident.

Failure to comply with any part of this policy may result in disciplinary action up to and including termination of employment.

## **I.3 SITE SANITATION PLAN**

HGL shall maintain hygienic sanitation provisions during the duration of this project. General requirements for a temporary, mobile field crew include:

- Drinking water – bottled drinking water will be maintained on site for use by all personnel.
- Washing and toilet facilities – Toilets will be available locally. Hand washing facilities with soap, towels, and/or anti-microbial gels will be available.
- Waste Disposal – investigation-derived waste generated during the field activities will be classified, handled, and disposed in accordance with the waste management procedures following applicable federal, state, and local regulations.
- Disposable materials (not classified as hazardous) such as gloves, used PPE, aluminum foil, paper towels, etc., will be placed and sealed in plastic garbage bags for disposal with sanitary waste from the site.

#### **I.4 MEDICAL SUPPORT PLAN**

The HGL occupational medical care provider will be available to provide patient-specific information in case medical treatment is needed. For injuries or illnesses requiring EMS, notification via the 911 system or equivalent system will be made by personnel at the scene. Emergency response personnel will determine the best course of treatment and the medical treatment facility where this will occur. Personnel may be transported to the nearest medical treatment facility as determined by EMS personnel.

For non-emergencies, the WorkCare 24-hour support hotline should be contacted.

Qualified first aid and CPR providers may treat minor injuries on site. Two field team members (HGL or subcontractor) must be trained to render both CPR and first aid. HGL and its subcontractor(s) qualification relating to CPR and first aid training will be provided in the SSHP. Each HGL first aid/CPR-certified employee is part of the HGL Bloodborne Pathogens Exposure Control Program.

A first aid kit (meeting American National Standards Institute [ANSI] Z308.1 content guidelines), including necessary protection against bloodborne pathogens, will be available in project vehicles or on site. An adequate supply of fresh potable water for emergency eye wash purposes or portable emergency eyewash will be available.

If additional treatment beyond first aid is required, the injured personnel will be transported to the identified emergency medical care facility. If the injury is not serious or if the ambulance response time is excessive, the injured party may be transported by the SM/FS to the nearest emergency room using an HGL field vehicle. The Emergency Information Sheet and the map and directions indicating the fastest route to the hospital emergency room will be retained in each field vehicle. In all cases, the SM/FS will accompany injured HGL workers to the hospital or medical care facility. A member of the subcontractor's field team will accompany subcontractor's workers to the hospital or medical care facility.

#### **I.5 BLOODBORNE PATHOGEN PLAN**

Qualified first aid and CPR providers may treat minor injuries on site. Two field team members (HGL or subcontractor) must be trained to render both CPR and first aid. If first aid response is necessary, all biological materials will be assumed to be infectious and universal precautions will be taken. Staff trained in first aid and CPR will wear PPE (nitrile gloves, eye protection, masks) dependent on exposure anticipated and will wash hands immediately after removal of gloves. Each HGL first aid/CPR-certified employee is part of the HGL Bloodborne Pathogens Program, which includes a Post Exposure Control Plan if exposed to bloodborne pathogens. The Post Exposure Control Plan covers instructions to seek medical attention within 2 hours and has provisions for a confidential medical examination and follow up with WorkCare for the Hepatitis B vaccine series.

A first aid kit, including necessary protection against bloodborne pathogens, will be available in project vehicles. An adequate supply of fresh potable water for emergency eye wash purposes or portable emergency eyewash will be available.



## **I.6 EXPOSURE CONTROL PLAN**

As a general policy, blood and related body fluids must be assumed to be infectious and must be treated as such. Contact with these fluids should be prevented through the prudent implementation of “universal precaution” such as PPE and disinfection.

Gloves will be worn when there is a potential for hand contact with blood, or other potentially infectious material, mucous membranes, and non-intact skin and when handling or touching contaminated items or surfaces. Disposable (single use) gloves, such as nitrile or examination gloves, should be replaced as soon as practical if they are torn, punctured, or if their ability to function as a barrier is compromised. Safety glasses and/or goggles are to be worn if there is any potential for splashing or other exposure to contaminated materials. A breathing barrier is located in the first aid kit if it is necessary to perform rescue breathing.

After contact with a potentially infectious material, wash hands, face, and any other body parts that may have been contaminated thoroughly with disinfectant soap or alcohol wipes as soon as possible after the incident. Disinfect all contaminated equipment or materials as soon as reasonable using a bleach solution, alcohol or similar. Items that cannot be disinfected must be bagged and discarded.

Immediately after an incident in which an employee may have been exposed to blood or other potentially infectious body fluids, the responsible manager or designee must do the following:

- Immediately contact the CHSD and HGL’s medical incident response service when an exposure incident occurs.
- Immediately investigate the exposure incident and document findings.
- Ensure involved employees understand and follow universal precautions.
- Assist health and safety staff in identifying employees that may have been occupationally exposed to blood or related body fluids.

## **I.7 AUTOMATIC EXTERNAL DEFIBRILLATOR (AED) PROGRAM**

The placement of AEDs is optional (except for health clinics). AEDs are not applicable to this project site.

## **I.8 SITE LAYOUT PLAN FOR TEMPORARY STRUCTURES**

Not applicable because temporary structures are not necessary to execute fieldwork for this project.

## **I.9 ACCESS AND HAUL ROAD PLAN**

Not applicable because access and haul roads will not be built to execute fieldwork for this project.

## **I.10 HEARING CONSERVATION PROGRAM**

Noise may be generated from the use of equipment and tools. Hearing loss resulting from occupational exposure to noise can be prevented through the use of hearing protection. As part of the criteria for the HGL hearing conservation program, audiometric testing of personnel will be

conducted and American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values (TLVs) will be used as the minimum for instituting hearing protection. Personnel will wear hearing protection when working with or around operating equipment or power tools that generate noise at 85 decibels on the A scale (dBA), or above levels that require raising the voice to carry on a conversation at a distance of three feet. Warning signs shall be posted in areas where noise greater than 85 dBA necessitates the use of hearing protection. The use of headphones for entertainment purposes is prohibited.

### **I.11 RESPIRATORY PROTECTION PLAN**

Respirators will not be worn.

### **I.12 HEALTH HAZARD CONTROL PROGRAM INCLUSIVE OF BIOLOGICAL HAZARD REVIEW**

The Health Hazard Control Program for this site consists of:

- Exposure monitoring/air sampling program;
- AHAs;
- Hazard/risk analysis;
- PPE;
- Standard safety procedures, work practices, and engineering controls; and
- Biological hazards.

#### **I.12a Exposure Monitoring/Air Sampling Program**

The site-specific exposure monitoring requirements and action levels are detailed in Section G of the SSHP.

#### **I.12b AHAs**

The process for developing AHAs is discussed in Section B.5. HGL's SM/FS and the SSHO will review activities and work environments to identify hazards not addressed in the relevant AHAs. The SM/FS or SSHO will keep subcontractor personnel informed of changing conditions and any new hazards and requirements.

#### **I.12c Hazard/Risk Analysis**

The anticipated hazards and the recommended control measures are presented in Section B of the SSHP (Appendix A). Exposure may occur through inhalation, skin absorption or physical contact, to a chemical or biological agent. Acceptable limits are specified in the current ACGIH guideline regarding TLVs and Biological Exposure Indices (BEIs) dated 2022 and published Department of the Army, or Department of Defense Exposure Limits, or by OSHA. In cases where there is a conflict between occupational exposure limits, the more stringent will generally apply. HGL's overall approach is to reduce and/or eliminate hazards when possible and feasible. If a hazard cannot be eliminated, then the National Institute for Occupational Safety and Health (NIOSH) hierarchy of controls should be applied, with substitution and engineering controls used preferentially over administrative controls and PPE. The NIOSH hierarchy is as follows:

- Elimination,
- Substitution,
- Engineering controls,
- Administrative controls, and
- PPE.

#### **I.12d PPE**

The HGL H&S Program is detailed in Standard Operating Procedures (SOPs). Information related to Personal Protective Equipment (PPE) is contained in SOP 201.506, which is included in Appendix A. A summary of the minimum work clothing requirements is provided below and specific PPE requirements are identified in Section E of the SSHP.

Employees will wear clothing suitable for the weather; however, minimum requirements for work will be a short-sleeved shirt, long pants (excessively long or baggy pants are prohibited) and leather work shoes. If analysis determines that safety-toed or other protective footwear is necessary, they will be worn.

Eye and face protection shall be worn as determined by an analysis of the operations being performed.

Hearing protection will be worn by all those exposed to high noise level activities (noise in excess of 85 dBA). A good rule of thumb is to wear hearing protection when normal conversation cannot be heard at approximately 3 feet. Hearing protection will have a minimum noise reduction rating of 25 dBA.

Head protection will be worn when head hazards exist. Hard hats will comply with ANSI Z89.1 and be worn with the brim facing forward.

High-visibility apparel will be worn by all workers exposed to vehicular or equipment traffic. The apparel will comply with ANSI/Industrial Safety Equipment Association 107, Class 2.

Specified gloves will be worn by those involved in activities that expose the hands to cuts, abrasions, punctures, burns, and chemical hazards.

If work is being performed around water and drowning is a hazard, a personal floatation device will be provided and worn.

#### **I.12e Standard Safety Procedures**

HGL will implement practices to eliminate, or reduce, the risk of exposure to recognized site hazards through work practices and engineering controls. The site-specific control measures are presented in Section I of the SSHP (Appendix A).

#### **I.12f Biological Hazards**

Personnel will be made aware of the various biological hazards that may be encountered while working at the site during the initial site safety orientation. Appropriate preventative measures

should be employed to minimize potential exposure to biological hazards, including personnel designating a field member to watch for biological hazards.

The SSHO will be responsible for instructing personnel in avoiding or minimizing exposure to biological hazards. The keys to avoiding biological hazards are awareness of one's surroundings and general knowledge of the habits of various species, which may present a threat. In general, vertebrates will escape to avoid human contact when encountered. Reptiles will often seek out warm sunny locations in the morning hours or during cold weather. A reconnaissance of the site work area should be conducted to identify the presence of potential threat species of plants, insects, and animals. Clearings of vegetation and soil excavation near burrows are activities that potentially disturb reptiles or hornet's nests in proximity to personnel. Extra care and caution should be exercised in any work area that disturbs vegetation or soil, or when entering any vegetated area where one cannot directly see the ground surface at all times.

### **Mosquitoes**

Mosquitoes may carry diseases, such as the West Nile and Zika viruses, as well as be bothersome. They are attracted by heat, sweat, body odor, fragrances, and carbon dioxide. Site personnel should use insect repellent containing n,n-diethyl-m-toluamide (DEET). Insect repellent should be reapplied at least every 4 hours.

The following suggestions should provide some protection from mosquitoes:

- Review the hazards associated with the Dengue virus, West Nile virus, and Zika virus through exposure to mosquito bites periodically during the TSMs. Zika virus prevention is an important issue because contracting this virus during pregnancy appears to pose a significant risk of neurological birth defects including microcephaly. Infection appears to be much less dangerous for healthy adults. Get regular updates on transmission and controls from: Centers for Disease Control – [www.cdc.gov/zika/](http://www.cdc.gov/zika/)
- Apply PFAS-free sunscreen first and then PFAS-free insect repellent. A list of prohibited and acceptable items for sampling of PFAS is provided in Attachment 4 of the SSHP.
- Increase protective measures when working at dawn, dusk, and in the early evening.
- Reduce the area of exposed skin when working outdoors.
- Avoid using fragrances.

### **Stinging Insects**

Workers should keep alert for bee and wasp activity and avoid wearing bright clothing and scented toiletries when working outside. Be wary of areas around structures where bees and wasps may live. If workers see bees or wasp activity, the area should be avoided, if possible. The use of insect repellants containing DEET is not effective in preventing stings. Anyone can have an allergic reaction to a bee sting, even if they were stung before with no reaction. Allergic reactions to bee stings may include swelling around the lips and eyes, rapid development of a rash, difficulty breathing, or signs of shock (pale skin, rapid pulse, and fainting). If any of these symptoms occur, call 911 immediately. If you have had a previous reaction, notify the SSHO before fieldwork

begins and carry a “bee-sting kit,” EpiPen®, or Ana-Kit. All personnel shall immediately report stings to the SSHO.

Nests should not be allowed to form near structures and areas where personnel will continue to have a need for access. If stung, personnel should wash the area with soap and water, apply cool compress to the area, elevate area on a pillow, and make a paste of baking soda and water for itching.

## **Ticks**

Working in tall grass, especially in or at the edge of wooded areas, increases the potential for ticks to bite workers. Ticks can be particularly numerous in the spring and fall. Ticks are vectors of many different diseases, including Lyme disease. Ticks attach to the skin and feed on blood, creating an opportunity for disease transmission.

The primary symptoms of tick-borne diseases are high fever, head and joint aches, nausea, and vomiting. Additionally, persons develop rashes or experience occasional coughs, chest pain, and severe pneumonia. Lyme disease usually presents a distinctive bull’s eye rash at the site of the bite in addition to flu-like symptoms and swollen lymph nodes.

If ticks are prevalent, treat clothing with a permethrin-based product like Permanone™ as directed by the manufacturer. Use an insect repellent containing approximately 30 percent DEET on any bare skin. Insect repellent will be available to personnel. Caution: some individuals may be sensitive to DEET—always read and follow label directions. Close pant legs with tape, elastic bands, or by tucking into socks. Tuck shirt into pants.

Periodically, during the workday, employees should inspect themselves for the presence of ticks. If a tick is discovered, the following procedure should be used to remove it:

- Do not try to detach a tick with bare fingers; bacteria from a crushed tick may penetrate even unbroken skin. Fine-tipped tweezers should be used.
- Grip the tick as close to the skin as possible and gently pull it straight away from you until it releases its hold.
- Do not twist the tick as you pull and do not squeeze its body; this may inject bacteria into your skin.
- Wash your hands and the bite area thoroughly with soap and water, and then apply an antiseptic to the bite area.

## **Snakes**

Every snake should be treated as venomous and avoided. If bitten by a snake, a person should pay attention to the characteristics of the snake, including color and pattern. The bitten person should be transported immediately to a medical facility, and the snake should be described to the attending physician. If immediate transportation to a medical facility is not possible, the victim should be placed at rest, and the extremity of the bite should be splinted.

To minimize contact with snakes, individuals walking on site shall avoid tall grass and vegetation and avoid placing hands in concealed areas. The following precautions should be followed:

- Learn to identify poisonous snakes; this process shall be reviewed during site-specific safety training.
- Be aware of surroundings at all times. Learn to check around with a sweeping glance to scan for camouflaged snakes in woodlands, weeds, trails, bushes, and other cover habitat.
- Avoid specific snake habitats such brush piles, rock piles, crevices, debris mounds, logjams, root systems, abandoned buildings, and watery areas. If movement of materials (such as rocks or brush) is necessary, use a remote means to initially relocate the material. Before entering an area, look and listen carefully.
- Never climb or step over obstacles anywhere without first carefully checking for snakes.
- Watch where you sit, where you place your hands and feet, and where you step at all times; use caution when exiting a vehicle parked off-road.
- Never handle “dead” snakes; they may not be completely dead.

**What to do if bitten by a venomous snake** – According to the American Red Cross, these steps should be taken:

- Keep the patient physically and emotionally calm. Unless it is unavoidable, DO NOT allow the patient to walk. Avoid any activity that would increase the heart rate.
- Gently wash the bite site.
- Apply an elastic roller bandage for a bite from an elapid snake (e.g., coral snake), after washing the wound.
- Splint bitten extremities, keeping the bite site at approximately the level of the patient’s heart.
- Try to identify the snake (but ONLY if safe to do so) to inform the medical facility.
- Have the snakebite evaluated by a health care provider as soon as possible.

**What NOT to do if bitten by a venomous snake:**

- DO NOT permit removal of pressure dressings or elastic bandage until at a facility ready and able to administer antivenin. As soon as the dressings are released, the venom will spread. The hospital must be prepared to immediately administer the antidote (antivenin).
- DO NOT eat or drink anything unless permitted by medical professionals.
- DO NOT engage in strenuous physical activity.
- DO NOT apply oral (mouth) suction to bite.
- DO NOT cut, suck, apply a constricting band or apply cold to a bite from a pit viper (e.g., rattlesnake, copperhead or cotton mouth).








- DO NOT drink any alcohol or use any medication.
- DO NOT apply either hot or cold packs.
- DO NOT apply a narrow, constrictive tourniquet such as a belt, necktie, or cord.
- DO NOT have a snake bite kit (the American Red Cross does not advocate use of kits).

### Poisonous and Thorny Plants

Typical poisonous plants that may affect the field team through contact include poison ivy or poison oak. Plants and other vegetation on sites may create a hazard due to the presence of thorns or sharp leaves. Vegetation with thorns can cause skin punctures or scratches that can lead to infection if not treated through first aid techniques. Some large grasses exhibit sharp edges which can cut exposed skin.

Personnel are advised to wear long-sleeved shirts and heavy work gloves as necessary to protect against skin punctures and cuts from cane grass and other plants. Sturdy work clothes and shoes will be worn by field personnel to help prevent injuries.

**Table I.1  
Poisonous Plants**

<b>COMMON POISON IVY (Rhus Radicans)</b>				
<ul style="list-style-type: none"> <li>• Grows as a small plant, vine, and shrub.</li> <li>• Grows everywhere in the United States except California and parts of adjacent states.</li> <li>• Eastern oak leaf poison ivy is one of its varieties.</li> <li>• Leaves always consist of three glossy leaflets.</li> <li>• Also known as three-leaf ivy, poison, creeper, climbing sumac, poison oak, markweed, picry, and mercury.</li> </ul>				
				
Spring	Summer	Fall	Winter	
<b>POISON SUMAC (rhus vernix)</b>				
<ul style="list-style-type: none"> <li>• Grows as a woody shrub or a small tree from 5 to 25 feet tall.</li> <li>• Grows in most of eastern third of United States.</li> <li>• Also knows as swamp sumac, poison elder, poison ash, poison dogwood, and thunderwood.</li> </ul>				
				

### I.13 HAZARD COMMUNICATION PROGRAM

HGL’s Hazard Communication Program (HCP) was developed to meet the requirements of the OSHA Hazard Communication Standard, Title 29 CFR 1910.1200 – 1201.

For hazardous chemicals brought to the site, HGL makes this information available to staff members through a written HCP, lists of chemicals in use, inventory of quantities and where they are located, current copies of SDSs, container labeling, and staff training.

As a part of the HCP, the project SSHO is responsible for:

- Bringing current SDSs for each hazardous chemical HGL introduces to the site.
- Developing and maintaining a comprehensive list of hazardous chemicals HGL introduces to the job site, and making it accessible to all staff on the site.
- Reviewing the SDSs that accompany incoming shipments and maintaining the SDSs in project files on site.
- Contacting the source of the hazardous chemicals if the SDSs are not complete or if an SDS is not supplied with an initial shipment.
- Labeling temporary and permanent hazardous chemical containers.
- At multi-employer sites, telling the other employers the location of the written HGL HCP and copies of SDSs for the site.
- Communicating with other employers (e.g., owner, contractors, subcontractors) to obtain information about the location of their written HCPs, labeling program, and SDSs, and, if applicable, information on the hazardous chemicals they may produce or introduce to the job site that HGL employees may be potentially exposed to.

#### **I.14 PROCESS SAFETY MANAGEMENT PLAN FOR HIGHLY HAZARDOUS CHEMICALS**

A Process Safety Management Program is not applicable under the current work scope, as no highly hazardous chemicals will be used.

#### **I.15 LEAD ABATEMENT PLAN**

A lead abatement plan is not applicable under the current scope of work.

#### **I.16 ASBESTOS ABATEMENT PLAN**

Asbestos is not anticipated to be encountered and therefore an Asbestos Abatement Program is not applicable in accordance with 29 CFR 1910.1001; 29 CFR 1926.1101; 40 CFR 61, Subpart M; applicable state regulations; and HGL's Standard Operating Procedure 06 Hazardous or Toxic Agents and Environments and the *Safety and Health Requirements Manual* (USACE, 2014).

#### **I.17 RADIATION SAFETY PROGRAM**

No radiological materials are anticipated to be found in the environment for this project.



## **I.18 ABRASIVE BLASTING PLAN**

An abrasive blasting plan is not applicable in accordance with the *Safety and Health Requirements Manual* (USACE, 2014) under the current scope of work.

## **I.19 HEAT STRESS MONITORING PROGRAM**

### **Heat Stress**

In hot environments, the following guidelines will be followed to prevent heat-related injury.

- a. Drinking water will be made available to employees and employees will be encouraged to frequently drink small amounts (e.g., 1 cup every 15 to 20 minutes; the water will be kept reasonably cool).
- b. Toolbox training will include training on the symptoms of heat-related problems, contributing factors to heat-related injuries, and prevention measures.
- c. When possible, work will be scheduled for cooler periods during the day.
- d. A buddy system will be established to encourage fluid intake and watch for symptoms of heat-related injury.
- e. SSHO will monitor those individuals who have had a previous heat-related illness, are known to be on medication, or exhibit signs of possibly having consumed large amounts of alcohol in the previous 24 hours for signs of heat-related illness.
- f. Breaks in shaded or air-conditioned areas will be taken at intervals to prevent harmful heat stress.
- g. Individuals who are not acclimatized will be allowed additional breaks. The period and number should be determined by the SSHO and provided to the supervisor and employee for implementation.
- h. Additional measures will be taken, as needed, to minimize heat stress. These measures may include pop-up tents over the work area, personal cooling products such as water-retentive bandanas and neck wraps, etc.

Use sunscreen with at least 30 Sun Protection Factor.

### **Heat Stress Monitoring**

The SSHO will monitor heat stress and will adjust heat stress controls to control the hazard to personnel. This monitoring will include visual monitoring of work and worksite conditions as well as feedback from work crews. The SSHO may also use local reports of heat index, applications such as OSHAs Heat Safety Tool, or a wet bulb globe temperature (WBGT) sensor and the heat stress TLV.

The risk of heat-related illness among healthy workers who are acclimatized to hot work is low if the WBGT value does not exceed the ACGIH “screening criteria” shown below in Table I.2.

**Table I.2**  
**ACGIH Screening Criteria and Action Limit for Heat Stress Exposure**  
**(WBGT Values in Degrees Celsius/Fahrenheit)**

Work/Recovery Cycle	TLV®				Action Limit			
	Light	Moderate	Heavy	Very Heavy	Light	Moderate	Heavy	Very Heavy
75 - 100% work	31/87.8	28/82.4	-	-	28/82.4	25/77	-	-
50 - 75% work	31/87.8	29/82.2	27.5/81.5	-	28.5/83.3	26/78.8	24/75.2	-
25 - 50% work	32/89.6	30/86	29/84.2	28/82.4	29.5/85.1	27/80.6	25.5/77.9	24.5/76.1
0 - 25% work	32.5/90.5	31.5/88.7	30.5/86.9	30/86	30/86	29/79	28/82.4	27/80.6

Values from the current edition of the ACGIH publication for TLVs and BEIs.

If impermeable clothing is worn in hot environments, additional controls such as cooling vests will be implemented. Physiological monitoring will also be conducted if impermeable clothing is being worn.

The following heart rate guidance should be used.

- Count the radial (wrist) pulse during a 30-second period as early as possible in the rest period.
- If the heart rate exceeds 110 beats per minute at the beginning of the rest period, shorten the next work cycle by one-third and keep the rest period the same.
- If the heart rate still exceeds 110 beats per minute at the next rest period, shorten the following work cycle by one-third and keep the rest period the same.

Additional physiological monitoring, such as continual pulse or core temperature, may be implemented, as needed.

**I.20 COLD STRESS MONITORING PLAN AND REPETITIVE ACTION OR VIBRATION PREVENTION**

The potential for cold stress is determined primarily by two variables: the temperature of the air and the speed of the wind. The cooling effects of moving air on exposed flesh can be expressed as an equivalent chill temperature (ECT), which combines temperature and air speed. At a given temperature, calm air is less dangerous.

Table I.3 shows values of ECT for various temperature and speed combinations. The conditions represented by Zones B and C are extremely dangerous to exposed skin. Continuous exposure of exposed skin should not be permitted if the ECT is -25 degrees Fahrenheit (°F) or less. Work under conditions represented by Zone A is much less dangerous to exposed skin. However, workers can suffer frostbite injury in the less severe environment if they develop a false sense of security and fail to take precautions.

At low ECT values, precautions against hypothermia are necessary, even if workers are dressed in well insulating clothing. The danger of hypothermia is especially severe if immersion in water is possible during the work.

**Table I.3**  
**Equivalent Chill Temperature (°F) at Various Air Temperatures and Wind Speeds**

Estimated Wind Speed (mph)	Actual Temperature Reading (°F)											
	50	40	30	20	10	0	-10	-20	-30	-40	-50	-60
Calm	50	40	30	20	10	0	-10	-20	-30	-40	-50	-60
5	48	37	27	16	6	-5	-15	-26	-36	-47	-57	-68
10	40	28	16	4	-9	-24	-33	-46	-58	-70	-83	-95
15	36	22	9	-5	-18	-32	-45	-58	-72	-85	-99	-112
20	32	18	4	-10	-25	-39	-53	-67	-82	-96	-110	-121
25	30	16	0	-15	-29	-44	-59	-74	-88	-104	-118	-133
30	28	13	-2	-18	-33	-48	-63	-79	-94	-109	-125	-140
35	27	11	-4	-20	-35	-51	-67	-82	-98	-113	-129	-145
40	26	10	-6	-21	-37	-53	-69	-85	-100	-116	-132	-148
>40 has little additional effect	<b>Zone A</b>				<b>Zone B</b>				<b>Zone C</b>			
	<b>LITTLE DANGER</b> <i>In less than 1 hour with dry skin. Maximum danger is false sense of security.</i>				<b>INCREASING DANGER</b> <i>From freezing of exposed flesh within 1 minute.</i>				<b>GREAT DANGER</b> <i>Flesh may freeze within 30 seconds.</i>			
Trenchfoot and immersion foot may occur at any point on this chart.												

*Notes:*

\* Developed by U.S. Army Research Institute of Environmental Medicine, Natick, MA.

\* Equivalent chill temperature requiring dry clothing to maintain core body temperature above 96.8 °F per ACGIH cold stress TLV  
 mph = miles per hour

The SSHO will assess the potential for cold stress before fieldwork begins, primarily through local weather reports, but using thermometers or wind speed measuring equipment on site as needed.

Work rules related to the prevention of cold-related injury will be required if conditions of the type represented in Zones A, B, or C in the ECT table are anticipated. Under such conditions, the SSHO will measure temperature and wind speed when work commences each day and at routine intervals (at least every 4 hours) thereafter, unless s/he believes that some other means of hazard assessment is adequate. The HGL CHSD must approve any alternative means of hazard assessment. When work is conducted under conditions represented in Zones A, B, or C, the SSHO will implement work rules described below to manage the potential hazard.

- Employees will receive training on the dangers and symptoms of cold-related injury and the work rules adopted to prevent it.
- Site workers will be warned that older individuals and people with circulatory problems might be at increased risk for cold-related injury, and that added precautions might be necessary to protect them.
- Each employee will be under protective observation by someone else during work (i.e., use of the “buddy system” will be required).
- Employees who experience pain in the extremities or evident shivering will be removed from exposure to the cold work environment.

- Work must be halted if frostbite cannot be prevented. Continuous skin exposure will not be permitted when the ECT is -25°F or less (Zones B and C on the ECT table).
- Tasks should be scheduled to avoid long periods during which workers must sit or stand still.
- Work expectations for new employees should be adjusted downward for the first few days, to permit acclimatization to the cold conditions.
- Dehydration, which decreases blood flow to the extremities, should be avoided. Employees will be encouraged to replenish water lost to perspiration and respiration. The SSHO will provide soups and warm sweet drinks as appropriate.
- The SSHO will develop procedures that reduce the likelihood of immersion in water or soaking of the clothing by other means during project work. Such precautions should apply to any work with liquids like gasoline, alcohols, solvents, or cleaning fluids.
- The SSHO will plan for any likely scenarios that would lead to wet clothing (through immersion in water, soaking by mist, etc.), and provide for quick changing into dry clothing and treatment for hypothermia.
- Emergency plans will give special attention to the prevention of cold-related injury (hypothermia and freezing of damaged tissues).

If continuous work must be performed at an ECT below 19.4°F, then the SSHO or PM will provide a heated shelter (truck, car, tent, cabin, or similar space) for warming after exposure to the cold environment. Employees should be encouraged to use the shelter at frequent intervals, and upon (1) onset of pain or heavy shivering; (2) occurrence of minor frostbite; or (3) onset of feelings of excessive fatigue, drowsiness, irritability, or euphoria. For these conditions, the SSHO will monitor weather and environmental conditions and implement a mandatory work/warming regimen according to Table I.4.

The rules the SSHO will implement will require that employees wear adequately insulating dry clothing if conditions of the type represented in Zones A, B, or C in the ECT table are anticipated. Workers should wear cold-protective clothing appropriate for the environmental conditions and the level of physical activity. The following considerations should guide the selection and use of protective clothing:

- Layered clothing shall be used to preserve body heat. An easily removable outer windbreak garment should be worn in windy conditions.
- Inner garments and underwear shall be made of fabrics that dry quickly and wick moisture away from the body.
- Outer garments shall be made with provisions for easy ventilation to prevent inner layers to be wetted by sweat.
- An employee shall not enter or remain in a cold work environment if his or her clothing is wet as a consequence of sweating. If clothing is wet, then the employee shall change into dry clothing before returning to the cold environment.

- Gloves and/or mittens shall be used as necessary to protect the hands, and employees shall be warned not to touch very cold objects and surfaces with bare skin.
- Workers shall routinely change socks and removable felt insoles to reduce moisture around the feet.
- Eye protection suitable to the type of hazard shall be used. Special precautions against ultraviolet light and glare might be necessary in snow-covered terrain.
- Hardhat liners shall be used. If work must be done on slippery surfaces, then shoe attachments that enhance traction shall be used.

More information may be found in HGL HSP Procedure 14.2 Cold Stress Program.

**Table I.4  
Work/Warming Schedule for a 4-Hour Shift**

Air Temp. (°F)	Air Speed (mph)				
	Calm	5	10	15	20
- 15 to -19	Normal Breaks <sup>(1)</sup>	Normal Breaks <sup>(1)</sup>	75 min. max. work period with 2 breaks	55 min. max. work period with 3 breaks	40 min. max. work period with 4 breaks
- 20 to - 24	Normal Breaks <sup>(1)</sup>	75 min. max. work period with 2 breaks	55 min. max. work period with 3 breaks	40 min. max. work period with 4 breaks	30 min. max. work period with 5 breaks
- 25 to - 29	75 min. max. work period with 2 breaks	55 min. max. work period with 3 breaks	40 min. max. work period with 4 breaks	30 min. max. work period with 5 breaks	<p><b>Non-emergency work should cease.</b> NOTE: The above work/warming regimens are applicable to workers in dry <b>not</b> wet clothing.</p>
- 30 to - 34	55 min. max. work period with 3 breaks	40 min. max. work period with 4 breaks	30 min. max. work period with 5 breaks		
- 35 to - 39	40 min. max. work period with 4 breaks	30 min. max. work period with 5 breaks			
- 40 to - 44	30 min. max. work period with 5 breaks				
- 45 and below					

<sup>1</sup> Break period is a 10-minute warm-up time in a warm location

Source: ACGIH TLVs and BEIs, Cincinnati, OH, 2022

Adapted from the Occupational Health and Safety Division, Saskatchewan Department of Labor

mph = miles per hour

### Repetitive Action or Vibration Disorder Prevention

Exposure to cold and vibration can lead to a condition known as Raynaud’s disease or “white finger disease.” The disease is caused by poor circulation in the fingers and toes. Symptoms may include cold fingers or toes, tingling and slight loss of feeling or numbness in the fingers and toes, and whitening of the fingers.

Both hand-held and stationary tools that transmit vibration through a work piece can cause vibration “white fingers” or hand-arm vibration syndrome. The use of these types of tools is not

anticipated on this project; however, if they should be required, proper control measures will be utilized to minimize hand-arm vibration. The control measures may include:

- Using anti-vibration tools and/or gloves;
- Keeping hands and body warm;
- Minimizing the vibration coupling between the hand and the tool;
- Participating in the medical surveillance program; and
- Adhering to the ACGIH TLV for hand/arm vibration.

#### **I.21 INDOOR AIR QUALITY MANAGEMENT**

Not applicable since indoor work will not be performed under the current work scope.

#### **I.22 MOLD REMEDIATION PLAN**

Not applicable since this type of work will not be performed under the current work scope.

#### **I.23 CHROMIUM (VI) EXPOSURE EVALUATION**

Not applicable since work involving products containing chromium (VI) will not be performed under the current work scope.

#### **I.24 CRYSTALLINE SILICA EVALUATION**

Not applicable since work involving crystalline silica will not be performed under the current work scope.

#### **I.25 LIGHTING PLAN FOR NIGHT OPERATION**

A night operations lighting plan is not applicable as all work will be scheduled during daylight hours.

#### **I.26 TRAFFIC CONTROL PLAN**

If work in active traffic areas is required, workers will wear ANSI Class 2 high-visibility vests. No work in public roadways is anticipated.

#### **I.27 FIRE PREVENTION PLAN**

This section details fire prevention and protection procedures/resources to be used at the project. This information is to be included in the site health and safety indoctrination.

#### **Workplace Fire Hazards**

The primary fire hazards at the project consist of brush fires, fueling operations, and welding and cutting activities.

## **Potential Ignition Sources**

The significant ignition sources at the project include smoking materials (matches and lighters), welding/cutting equipment, vehicle/equipment exhaust, and catalytic converters.

## **Fire-Control Systems, Equipment, and Procedures**

Depending on the nature and extent of any fire, the following fire-control systems and equipment shall be evaluated or provided for at the project:

- Contact information for the fire department (listed at the beginning of this APP).
- Fire extinguishers shall be maintained in all vehicles and in specific areas of concern (e.g., near electrical work or areas of hot work). Where flammable or combustible materials in quantities greater than 5 gallons are present and where hot work will be performed, 10-pound extinguishers rated 4A:60B:C will be present in the immediate area. At least one dry chemical fire extinguisher having a minimum Underwriters Laboratory rating of 1A5BC will be available in all vehicles and trailers.
- A Hot Work Permit is required before a flame or spark-producing activity is to commence.
- Flammable waste will be stored or disposed of in metal containers, clearly marked as containing flammable materials.
- Storage of combustible materials will be kept to a minimum.
- Flammable and oxidizing materials shall be stored in marked (No Smoking, Matches, or Open Flame) areas with fire extinguishers available.
- Smoking shall be permitted only in designated areas. Personnel shall never discard cigarette butts into the environment while working at the site.
- Open flames are prohibited.
- Vehicles and equipment will not be left idling or parked in areas where catalytic converters may ignite vegetation.
- Project personnel are only permitted to extinguish small fires in their incipient stages only provided that the person has been trained and feels comfortable doing so.

## **Fire-Control Equipment Maintenance Responsibilities**

The SSHO is responsible for performing the monthly inspections of portable fire extinguishers and obtaining annual service for all HGL provided fire extinguishers used on the project. The SSHO is also responsible for controlling fuel source hazards, housekeeping procedures and removal of waste. The subcontractor is responsible for performing the monthly inspections and obtaining annual service for all subcontractor-provided fire extinguishers used at the project site. Vehicle and equipment operators are responsible for the daily inspection of fire extinguishers on vehicles/equipment.

In the event of a fire in any HGL field or site office, field vehicle, or treatment plant, only attempt to extinguish the fire if it is containable. If it is containable and extinguished by the on-site personnel, summon the fire department to confirm the fire will not reignite. If the fire is not containable, then all personnel will evacuate immediately, following the posted emergency evacuation routes and meeting at the designated rally point. A head count will be taken by the senior person present to account for all personnel. The SSHO will contact the fire department, base contact, and the HGL PM. Contact information is listed at the beginning of this APP.

### **I.28 WILDLAND FIRE MANAGEMENT PLAN**

Wildland fires will be responded to as indicated in the Fire Prevention Plan in Section I.27 of the APP.

### **I.29 ARC FLASH HAZARD ANALYSIS**

Not applicable since this type of work will not be performed under the current work scope.

### **I.30 ASSURED EQUIPMENT GROUNDING CONTROL PROGRAM**

All portable electrical equipment and extension cords shall be protected with a ground fault circuit interrupter as part of the circuit. Use only hard or extra hard, outdoor usage extension cords that are rated (in watts or amps) at least equal to the sum of the connected loads. Extension cords, power tools, and lighting equipment shall be inspected before each use, protected from damage, and kept out of standing water.

All electrical installations shall be made as required by National Fire Protection Association (NFPA) 70, National Electrical Code (NFPA, 2012) or local code, whichever is more protective. Only qualified electricians may work on electrical circuits. Qualified personnel shall be trained with the proper use of the special precautionary techniques, PPE, arc flash, insulating and shielding materials, and insulated tools and test equipment.

### **I.31 HAZARDOUS ENERGY CONTROL PROGRAM AND PROCEDURES**

A Hazardous Energy Control Plan is not required under the anticipated activities under the current work scope. The use of non-battery-operated electrical equipment is not anticipated during field activities at the project site. However, should it become necessary to use main power or a generator, a lockout/tag-out procedure will be used by site personnel if the associated equipment is being worked on or maintained. The lockout/tag-out procedure will ensure that any machine or equipment being worked on is isolated from all potential hazardous energy sources and locked out or tagged out before any servicing or maintenance activity where the unexpected energization, start-up, or release of energy might result in an injury.

The following applicable OSHA standards for electrical power apply to the work performed at the project site: (29 CFR 1926, Subpart K); Section 12 of the *Safety and Health Requirements Manual* (USACE, 2014); and NFPA 70 E (NFPA, 2012), Standard for Electrical Safety in the Workplace.



## Electric Tools, Extension Cords, and Electrical Work Monitoring

Employees working in areas where electrical hazards are present shall be provided with and shall use double-insulated and insulating hand tools, rubber insulating gloves, protective clothing, and PPE that is designed and constructed for the specific part of the body to be protected and for the work to be performed, as specified by Section 130.7 of NFPA 70 E (NFPA, 2012). Employees and subcontractors shall use insulated tools and/or handling equipment when working inside the limited approach boundary of exposed live parts where tools or handling equipment might make accidental contact. Insulated tools shall be protected from damage to the insulating material.

### I.32 STANDARD PRE-LIFT PLAN

Not applicable since this type of work will not be performed under the current work scope.

## Overhead Electrical Lines

Equipment shall maintain a safe distance from overhead lines. Clearances will be adequate for the movement of vehicles and for the operation of construction equipment. A minimum clearance of 20 feet will be implemented unless otherwise specified in Table I.5 below. A spotter, located so that they have a different line of sight than the equipment operator, shall be used as needed to identify the location of the lines. When equipment operations must be performed closer than 20 feet from overhead power lines, the SHM/CHSD must be notified. If authorization to proceed is received from the SHM/CHSD, the electric utility company must be contacted to turn the power off or physically insulate (protect) the lines if the operation must be performed closer than 20 feet of the power line.

**Table I.5  
Minimum Clearance from Energized Overhead Electric Lines**

Nominal System Voltage (kilovolts)	Minimum Rated Clearance (feet)
0 – 50	10
51 – 200	15
201 – 350	20
351 – 500	25
501 – 750	35
751 – 1,000	45
Over 1,000	As established by the utility owner/operator

### I.33 CRITICAL LIFT PLAN

Not applicable since this type of work will not be performed under the current scope of work.

### I.34 NAVAL ARCHITECTURAL ANALYSIS

Not applicable since this type of work will not be performed under the current scope of work.

**I.35 FLOATING PLANT INSPECTION AND CERTIFICATION**

Not applicable since there will be no floating plant and marine activities under the current scope of work as defined in Section 19 A of the *Safety and Health Requirements Manual* (USACE, 2014).

**I.36 SEVERE WEATHER FOR MARINE ACTIVITIES**

Not applicable since there will be no marine activities under the current scope of work as defined in Section 19 A of the *Safety and Health Requirements Manual* (USACE, 2014).

**I.37 EMERGENCY PLAN FOR MARINE ACTIVITIES**

Not applicable since there will be no marine activities under the current scope of work as defined in Section 19 A of the *Safety and Health Requirements Manual* (USACE, 2014).

**I.38 MAN OVERBOARD/ADANDON SHIP**

Not applicable since there will be no boats, vessels, or skiffs used at the project under the current scope of work.

**I.39 FLOAT PLAN FOR LAUNCHES, MOTORBOATS, AND SKIFFS**

Not applicable since no operations are expected to require the use of floats, boats, vessels, or skiffs under the current scope of work

**I.40 FALL PROTECTION AND PREVENTION PLAN**

Not applicable since this type of work will not be performed under the current scope of work.

**I.41 DEMOLITION/RENOVATION PLAN**

Not applicable since this type of work will not be performed under the current scope of work.

**I.42 ROPE ACCESS WORK PLAN**

Not applicable since work involving ladders, stairs, and railings will not be performed under the current scope of work.

**I.43 EXCAVATION/TRENCHING PLAN (INTRUSIVE ACTIVITIES)**

An excavation/trenching plan is not applicable since this type of work will not be performed under the current work scope. Soil removals are not anticipated to exceed 1 to 2 feet in depth.

**I.44 FIRE PREVENTION AND PROTECTION PLAN FOR UNDERGROUND CONSTRUCTION**

Not applicable since underground construction will not be performed under the current scope of work.

**I.45 COMPRESSED AIR WORK PLAN FOR UNDERGROUND CONSTRUCTION**

Not applicable since work requiring a compressed air work plan will not be performed under the current scope of work.

**I.46 ERECTION AND REMOVAL PLAN FOR FORM WORK AND SHORING**

Not applicable since construction involving form work and shoring will not be performed under the current scope of work.

**I.47 PRECAST CONCRETE PLAN**

Not applicable since precast concrete will not be used under the current scope of work.

**I.48 LIFT SLAB PLANS**

Not applicable since lift slab work will not be performed under the current scope of work.

**I.49 MASONRY BRACING PLAN**

Not applicable since this type of work will not be performed under the current scope of work.

**I.50 STEEL ERECTION PLAN**

Not applicable since steel erection work will not be performed under the current scope of work.

**I.51 EXPLOSIVES SAFETY SITE PLAN**

Not applicable since blasting activities will not be performed under the current scope of work.

**I.52 BLASTING PLAN**

Not applicable since blasting work will not be performed under the current scope of work.

**I.53 DIVE OPERATIONS PLAN**

Not applicable since diving work will not be performed under the current scope of work.

**I.54 SAFE PRACTICES MANUAL FOR DIVING ACTIVITIES**

Not applicable since diving work will not be performed under the current scope of work.

**I.55 EMERGENCY MANAGEMENT PLAN FOR DIVING**

Not applicable since diving work will not be performed under the current scope of work.

**I.56 TREE FELLING/MAINTENANCE PROGRAM**

Not applicable since this type of work will not be performed under the current scope of work.

**I.57 AIRCRAFT/AIRFIELD CONSTRUCTION SAFETY AND PHASING PLAN**

Not applicable since this type of work will not be performed under the current scope of work.

**I.58 AIRCRAFT/AIRFIELD SAFETY PLAN COMPLIANCE DOCUMENT**

Not applicable since this type of work will not be performed under the current scope of work.

**I.59 SITE SAFETY AND HEALTH PLAN**

The SSHP is included as Appendix A of this APP.

**I.60 CONFINED SPACE ENTRY PROCEDURES**

Not applicable since this type of work will not be performed under the current scope of work.

**I.61 CONFINED SPACE PROGRAM**

Not applicable since this type of work will not be performed under the current scope of work.

## **J. RISK MANAGEMENT PROCESSES**

Detailed project-specific hazards and controls for each major DFW/activity are addressed in task-specific AHAs included in Attachment 1 of the SSHP (Appendix A). The AHAs define the job steps to be performed for each activity; the specific anticipated hazards associated with each job step; and the equipment, materials, and the control measures to be implemented to eliminate or reduce each hazard to an acceptable level of risk. The AHAs include site-specific training requirements, inspection schedules, and the names of competent and qualified personnel. AHAs required for the project will be submitted for approval to the GDA 15 days prior to the commencement of the work covered by the AHA. Work shall not begin until the AHA for that activity has been accepted by the GDA and discussed with all HGL and subcontractor personnel engaged in the activity. The AHAs are to be considered living documents and are intended to be created in the field and updated by the workers as needed. A RAC associated with each activity is documented in the AHAs. RACs are defined by probability and severity of occurrence.

AHAs will be revised, as necessary, when unforeseen circumstances arise, or work-site conditions change. Any revisions will be immediately communicated to the affected site workers. If the need to complete an unplanned task becomes necessary at any point throughout the day the AHA will be revised.

Project-specific hazards and controls are discussed in Section B, Hazard/Risk Analysis of the SSHP.

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## K. REFERENCES

American Conference of Governmental Industrial Hygienists (ACGIH), 2022. *Threshold Limit Values for Chemical Substances and Physical Agents*.

Code of Federal Regulations (CFR) Title 29, Part 1904, Occupational Safety and Health Standards, Recordkeeping. Government Printing Office, Washington, D.C., July 1, 2003, at URL <http://www.access.gpo.gov/nara/cfr/index.html>. December 2012.

CFR Title 29, Part 1910, Occupational Safety and Health Standards, U.S. Government Printing Office, Washington, D.C., July 1, 2003, at URL <http://www.access.gpo.gov/nara/cfr/index.html>. February 2012.

CFR Title 29, Part 1926, Safety and Health Regulations for Construction, U.S. Government Printing Office, Washington, D.C., July 1, 2003, at URL <http://www.access.gpo.gov/nara/cfr/index.html>. February 2012.

National Fire Protection Association (NFPA), 2012. *Standard for Electrical Safety in the Workplace*, NFPA 70E, and URL <http://www.nfpa.org/aboutthecodes/AboutTheCodes.asp?DocNum=70E&cookie%5Ftest=1>.

U.S. Army Corps of Engineers (USACE), 2014. Safety and Health Requirements Manual, Safety, EM 385-1-1. November.

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**APPENDIX A**  
**SITE SAFETY AND HEALTH PLAN**

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**APPENDIX A  
SITE SAFETY AND HEALTH PLAN**

***Remedial Investigation (RI) at 4 Known Per- and Polyfluoroalkyl Substances (PFAS) Sites and Preliminary Assessment (PA)/Site Inspection (SI) at 34 Suspected Sites  
Former Seneca Army Depot Activity (SEDA), Romulus, New York***

Job Name: <i>RI at Four (4) Known PFAS Sites and PA/SI at 34 Suspected Sites</i>	Project Manager: John Blaum, P.E.
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Safety and Health Manager Approval Signature:

Worksite Location(s): Former Seneca Army Depot, Romulus, New York	SSHP Revision No.: 0.0 (Original Submittal)
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Scope of Work:

- Perform a RI at the four known PFAS sites and collect data of sufficient quantity and quality to determine horizontal and vertical extent of PFAS contamination.
- Perform an SI at 34 suspected sites and any new sites discovered during the PA/historical record review at SEDA to determine if there is sufficient PFAS contamination to warrant a future RI. PA/historical record review for SEDA to determine if there is historical evidence of PFAS use and potential release at additional sites and investigate the potential release at each site during the SI.

The HGL) Team will:

- Install new groundwater monitoring wells at RI and SI sites;
- Develop new groundwater wells;
- Collect surface and subsurface soil samples;
- Collect groundwater samples from existing and newly installed wells;
- Collect sediment and surface water samples; and
- Utilize munitions and explosives of concern (MEC)/unexploded ordnance (UXO) anomaly avoidance procedures at former munition sites where investigations will be conducted.

This SSHP supplements the Accident Prevention Plan (APP) and contains additional project/task order-specific information. Additional safety and health requirements are found in the Activity Hazards Analysis (AHA) forms, associated project plans, HGL health and safety procedures, and project-specific standard operating procedures (SOP), as identified below. If hazards or conditions are identified that this SSHP does not cover, contact the HGL Supervisor or the Site Safety and Health Officer (SSHO). This SSHP is Appendix A of a broader-scope project APP written in compliance with the U.S. Army Corps of Engineers (USACE) Health Requirement Manual Engineering Manual (EM) 385-1-1 dated November 2014. It adheres to the section outline in 33.B.02 of EM 385-1-1 for SSHPs.

**SSHP Organization**

<b>SSHP Section</b>	<b>Item</b>	<b>Additional Content/Location or Reference in APP</b>
A.	Site Description and Contaminant Characterization	APP B.4a
B.	Activity Hazard Analysis	APP B.5, AHAs for each definable feature of work will address general safety and chemical, physical and biological hazards.
C.	Staff Organization, Qualifications, and Responsibilities	APP D.2, List of safety personnel, specific training requirements, and competent person(s).
D.	Training	APP F and Attachment 2, Certificates and medical clearances
E.	Personal Protective Equipment	APP I.12, Personal Protective Equipment (PPE) used to protect workers from site-related hazards under PPE (levels of PPE described).
F.	Medical Surveillance	APP D.3 and Attachment 2, WorkCare Hazardous Waste Operations and Emergency Response (HAZWOPER) medical surveillance provider.
G.	Exposure Monitoring/Air Sampling	APP I.12, Exposure monitoring and instruments and action levels.
H.	Heat and Cold Stress	APP I.19 and I.20

<b>APPENDIX A</b> <b>SITE SAFETY AND HEALTH PLAN</b> <i>Remedial Investigation (RI) at 4 Known Per- and Polyfluoroalkyl Substances (PFAS) Sites and Preliminary Assessment (PA)/Site Inspection (SI) at 34 Suspected Sites</i> <i>Former Seneca Army Depot Activity (SEDA), Romulus, New York</i>		
I.	SOPs, Engineering Controls, and Work Practices	APP I.12
J.	Site Control Measures	APP I.12, Standard Safety Procedures
K.	Personal Hygiene and Decontamination	APP I.3, Site Sanitation Plan
L.	Equipment Decontamination	APP B.5
M.	Emergency Equipment and First Aid	APP G, Safety and Health Jobsite Inspections and I.4, Medical Support Plan
N.	Emergency Response and Contingency Plan	APP I.2, Emergency Response Plan
Attachment 1 – Activity Hazard Analysis Forms		
Attachment 2 – Safety Personnel Proof of Training and Competency and Certifications Employee Medical Surveillance Program Participation		
Attachment 3 – Fact Sheet PFOA & PFOS Drinking Water Health Advisories		
Attachment 4 – List of Prohibited and Acceptable Items for Sampling of PFAS		
Attachment 5 – Hospital Map and Emergency Contacts List		
Attachment 6 – HGL SOPs 201.506 and 408.507		

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Former Seneca Army Depot Activity (SEDA), Romulus, New York***

**A. Site Description and Contaminant Characterization**

**Contamination Characterization**

It is anticipated that contaminants will not reach levels considered to be hazardous during site activities.

**Contaminants that may be encountered, their properties, and acute health effects are provided in Attachment 3.**

The main chemical contaminants presenting potential occupational and environmental health hazards during the work are expected to be perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA) in groundwater.

PFOS/PFOA – While consumer products and food are a large source of exposure to these chemicals for most people, drinking water can be an additional source in a small percentage of communities where these chemicals have contaminated water supplies. Studies indicate exposure to PFOA and PFOS over certain levels may result in adverse health effects, including developmental effects to fetuses during pregnancy or to breastfed infants (e.g., low birth weight, accelerated puberty, skeletal variations); cancer (e.g., testicular, kidney); liver effects (e.g., tissue damage); immune effects (e.g., antibody production and immunity); thyroid effects; and other effects (e.g., cholesterol changes). Precautions will be taken to control exposure routes.

Attachment 3 discusses the non-drinking water exposure to PFOA and PFOS, recommended actions for drinking water systems, and other actions relating to PFOA and PFOS. Section E provides a summary of PPE requirements.

**B. Activity Hazard Analysis**

AHAs will be reviewed with the work crew before starting work and will be revised as necessary to incorporate additional task-specific considerations. AHAs are to be reviewed periodically to confirm the work processes have not changed and that the hazards are addressed and controlled. Employees will be briefed on any changes made to AHAs. Additional AHAs will be prepared as appropriate for new tasks. The AHAs needed for this project are:

- Mobilization and Demobilization
- MEC/UXO Avoidance, including 3Rs (Recognize, Retreat, Report) Explosives Safety Education Program guidance
- General Site Work
- Drilling
- Drilling Sample Processing
- Direct-Push Drilling and Groundwater Sampling
- Well Installation
- Groundwater Well Development
- Groundwater Well Sampling
- Surface Water and Sediment Sampling
- Sampling and Analysis
- Decontamination of Equipment
- Investigative-Derived Waste (IDW) Management
- Surveying

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**Hazards of Concern/Risk Analysis:**

<p><b>Physical Hazards</b></p> <p><input checked="" type="checkbox"/> Biological: irritant plants, insects, animals, snakes*</p> <p><input checked="" type="checkbox"/> Cold Stress* Excavation/Trenching for hot tap hook ups</p> <p><input type="checkbox"/> Extended Work Shift/Night Work/Fatigue*</p> <p><input type="checkbox"/> Falls from heights</p> <p><input type="checkbox"/> Fire*</p> <p><input type="checkbox"/> Flying Debris/ Struck-by*</p> <p><input type="checkbox"/> Hazardous Electrical Energies: LOTO</p> <p><input type="checkbox"/> Hazards created by working around other trades* _____</p> <p><input checked="" type="checkbox"/> Heat Stress/ UV* Heavy Equipment use for hot tap hook ups</p> <p><input type="checkbox"/> Heavy Lifting/Cumulative Trauma*</p> <p><input type="checkbox"/> Intrusive Activities</p> <p><input type="checkbox"/> Material handling of drums/containers/tanks (specify)</p> <p><input checked="" type="checkbox"/> Motorized Traffic/Vehicle accidents*</p> <p><input checked="" type="checkbox"/> Noise*</p> <p><input type="checkbox"/> Radiological (will need radiation safety program)</p> <p><input type="checkbox"/> Steam/Burn hazards from pressure washers</p> <p><input type="checkbox"/> Severe Weather*</p> <p><input checked="" type="checkbox"/> Slips, Trips, and Falls, soft and uneven ground*</p> <p><input type="checkbox"/> Unwanted Entry*</p> <p><input type="checkbox"/> Use of Hand Tools, Power Tools, and Cutting Tools*</p> <p>Other <b>Specify:</b></p>	<p><b>Atmospheric/Inhalation/Skin Hazards</b></p> <p><input type="checkbox"/> Confined Space Entry: O2 deficiency/lower explosive limit/toxics</p> <p><input type="checkbox"/> Contaminated clothing-take home toxics (irritant plant resins, ticks, soil)</p> <p><input type="checkbox"/> Volatiles/Toxics/Dust/Irritants/Sensitizers/Allergens*</p> <p><input type="checkbox"/> Lead (will need a lead control plan if checked)</p> <p><input type="checkbox"/> Asbestos (will need an asbestos control plan if checked)</p> <p><input type="checkbox"/> Crystalline silica (will need assessment plan if checked)</p> <p><input type="checkbox"/> Chromium VI (will need exposure evaluation if checked)</p> <p><b>Chemical/Explosive Hazards</b></p> <p><input type="checkbox"/> Chemicals (chemical tools, preservatives, treatment technologies, contaminants) <b>Specify Chemical:</b></p> <p><input type="checkbox"/> Explosive/Flammable (fuels, solvents, reactive materials)</p> <p><input type="checkbox"/> Spills/Leaks*</p> <p><input type="checkbox"/> UXO</p> <p><input type="checkbox"/> CWM</p> <p><input type="checkbox"/> Other <b>Specify:</b></p>
<p><b>Overall Hazard Evaluation:</b></p> <p><input type="checkbox"/> High    <input type="checkbox"/> Medium    <input checked="" type="checkbox"/> Low</p>	<p>*These hazards are covered in AHA – General Site Work.</p>

**C. Staff Organization, Qualifications, and Responsibilities**

Director of Health and Safety	Steve Davis, CIH, CSP
Project CIH, Safety and Health Manager	Edie Scala-Hampson, CIH, CHMM
Occupational Medicine Physician - WorkCare	Peter Greaney, MD
First Aid Trained Staff	All Field Personnel

Proof of training and competency and medical program participation for project personnel are included in Attachment 2.

**Competent Persons Required** (Boxes will be checked, and individual's names listed next to the activity, if required)

**NONE REQUIRED**

- SSHO
- Collateral Duty SSHO
  - Designated Representative
  - Safety Point of Contact
  - Fall Protection
  - Scaffolding
  - Permit-Required Confined Space Entry
  - Lockout/Tagout
  - Other (please specify)

The designated Competent Person(s) also will be listed on the appropriate AHAs.

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**D. Training**

**Training Requirements** - See APP Section F for HGL corporate training requirements.

Pre-entry site briefings/site access will be conducted prior to site activity for employees. HGL procedures for periodic reviews, inspections, deficiency tracking, corrective action, and disciplinary actions will be enforced.

*[HAZWOPER training requirements will be waived for certain subcontractor tasks if contact with contaminated media will not occur.]*

**Additional Training Requirements** (Note: training listed below is additional training that is not already specified in Section F of the APP, if no additional training is necessary, the “None” check box is checked)

None

Other **Prohibited field clothing, cosmetics, hand cream, sunscreen, insect repellants or other related products and PPE will be discussed prior to sampling for PFOS and PFAS.**

**Operational Chemicals**

Substances that may be brought to the site include small amounts of gasoline or diesel fuel; sample containers with hydrochloric acid, nitric acid, or methanol; hexane; and the detergent Alconox®. Safety Data Sheets (SDSs) will be kept on site for each potentially hazardous material (other than waste) that may be brought on site. Tailgate safety hazard communication training will include discussion of these chemicals, the associated hazards, and hazard controls.

**E. Personal Protective Equipment**

**General Requirements**

Based on known site conditions and planned tasks, and the level of contaminants, it is anticipated that work will begin in Level D PPE. Upgrades in protection will comply with Section I.12d of the APP. Level D PPE consists of:

- Standard work clothing (mandatory long pants and sleeved shirt);
- High-topped shoes/boots with steel or non-conductive protective toe caps;
- Safety glasses with side shields (whenever a splash potential exists or when clearing and grubbing);
- Hard hat (in drilling areas or if overhead or struck-by hazards exist);
- Leather or similar work gloves for material handling and any task that poses cut or pinch hazards;
- Hearing protection (whenever it is difficult to carry on a conversation with a person when they are standing at arm’s length away) approximately 85 decibels (dBA); and
- High-visibility vest (when working near traffic, heavy equipment, and known hunting areas).

**Additional PPE Requirements**

**Respiratory:**

- None/Not applicable
- Air Purifying Respirator- Full face
- Cartridge/Filter type:
- Change out schedule (daily or describe other)
- Escape Mask
- SCBA, Airline
- Other

**Protective Clothing:**

- None/Not Applicable
- Apron
- Cloth Coverall
- Encapsulated Suit
- Splash Suit
- Tyvek Coverall
- Other

**Other:**

- None/Not Applicable
- Face Shield
- Overboots
- Overgloves
- Rubber Boots
- Undergloves
- Other Chemical Resistant Gloves
- Personal Flotation Device
- Full Body Harness/Fall Protection

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**F. Medical Surveillance**

HGL personnel are required to participate in the medical surveillance program, which the Corporate Health and Safety Director (CHSD) manages. The program includes initial and routine medical exams (annual or biennial) provided by a licensed physician at a WorkCare-approved clinic. These exams are used to establish an initial baseline of the employee's health and then used to monitor their future health as they pertain to potential occupational exposures to hazardous agents, and fitness to work. Subcontractors to HGL must also provide documentation of medical approval on an as-needed basis before the worker arrives on site.

If there is a potential for personnel to work in areas where respiratory protection is necessary, they will have medical clearances for respirator use and current fit tests. Documentation of medical qualifications will be retained on site. See Attachment 2.

Any injury or illness (whether on or off the job) may require work accommodations before the employee returns to work. If the injury or illness requires medical care, the attending physician must provide written approval for returning to work by completing a *Medical Assessment/Work Capacity Form* or equivalent and it must be provided prior to an employee returning to work.

**G. Exposure Monitoring/Air Sampling**

**Exposure Monitoring**

<b>Contaminant/ Environment</b>	<b>Action Level Concentration</b>	<b>Location</b>	<b>Response</b>
Noise <input checked="" type="checkbox"/> Monitoring Required (when noise levels are suspected to be above 85 dBA) <input type="checkbox"/> Monitoring Not Applicable	>85 dBA (whenever it is difficult to carry on a conversation with a person when they are standing at an arm's length away)	High noise areas	Require use of hearing protective devices at >85 dBA.
Temperature extremes-heat and cold stress <input checked="" type="checkbox"/> Monitoring Required (when there are extreme temperatures) <input type="checkbox"/> Monitoring Not Required	Variable depending on the individual and work activity. Occupational Safety and Health Administration (OSHA) heat stress app to be used or American Conference of Governmental Industrial Hygienists Threshold Limit Values (ACGIH TLVs)	Outdoor work	Take breaks in the shade, drink chilled fluids. Provide for ample shelter and breaks for hot/cold weather exposure. All personnel to be trained in the recognition of symptoms and treatment of heat and cold stress.

**Air Sampling**

Dust <input type="checkbox"/> Monitoring Required <input checked="" type="checkbox"/> Monitoring Not Required	10 milligrams per cubic meter (mg/m <sup>3</sup> ) Nuisance dust	Visible dust will be controlled at all times in active excavation work areas.	Excavation and soil moving activities tend to stir up larger sized dust particles.  It should be noted that airborne dust is visible at approximately 2 to 2.5 mg/m <sup>3</sup> .
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**Determination of Photoionization detector (PID) Requirements**  Monitoring Not Required

*The primary volatile organic compound (VOC) of concern/Ionization Potential (eV)	Not Applicable
PID lamp	Not Applicable
Calibration gas	Not Applicable
Correction factor for calibration gas	Not Applicable
Reading of 100 parts per million	Not Applicable
*Primary VOC determination will be based on concentrations in media and TLVs.	Not Applicable



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**H. Heat and Cold Stress**

HGL's Heat Stress Monitoring Program is provided in Section I.19 of the APP  
HGL's Cold Stress Monitoring Plan is provided as Section I.20 of the APP.

**I. SOPs, Engineering Controls, and Work Practices**

**General Site Rules and Prohibitions**

- Conduct an initial safety briefing and address this SSHP; site and task hazards; equipment hazards; chemicals brought to the site (hazards, hazard controls, location of SDSs); potential emergencies and responses; site control requirements; and PPE.
- Confirm that site personnel have required training and qualifications.
- Conduct follow-up briefings, at least weekly, to address changes in scope or hazards.
- Conduct regular inspections to verify implementation and effectiveness of hazard controls.
- Do not consume food, beverages or tobacco products while working with hazardous chemicals or hazardous waste.
- Decontaminate personnel and equipment after contact with hazardous waste or hazardous chemicals.
- Use a buddy system (visual or by cell phone) to track personnel and render aid, if needed.
- Report incidents and significant near misses.
- Report or correct unsafe and potentially unsafe conditions or practices.
- Wear all required PPE.
- Remove jewelry that may become entangled in equipment.
- Prohibit running and horseplay.

**Site Rules Regarding MEC and UXO Anomaly Avoidance**

- Following the initial safety briefing, the SSHA will determine the reporting point of contact (POC) and procedure if at any time MEC/UXO are encountered or suspected.
- In the event that MEC/UXO is encountered, the POC will report any MEC items discovered to the appropriate person/organization, in accordance with EM 385-1-97, including the local law enforcement agency. The POC will also contact the MMCX.
- Should personnel encounter any object of questionable origin, it should be assumed that it may be armed and could go off at any time and all personnel will do the following:
  - Initiate a 'Stop Work Order' and immediately evacuate all personnel in the vicinity of the munition or suspect munition. Under no circumstances should any personnel attempt to pick up or move the suspected piece or debris.
  - Visually scan the area for additional munitions.
  - Do not move closer, but carefully leave the area the same way that you entered.
  - Mark the area, if safe to do so, where munitions were encountered, but do not mark the munition itself.
  - After all personnel have withdrawn from the area, notify Base Operations, as well as the client contact and the HGL Project Manager.
  - Do not use a radio or cellphone within 100 meters of a MEC/UXO.
  - Do not return to the site until cleared by SEDA personnel.

**Required Work Permits or Plans [Attach required forms- Attachment 4, if needed] or see APP for Plans if the box is checked.**

- |  |   |
|--|---|
| <input checked="" type="checkbox"/> <b>No work permits are required for this site.</b>                       | <input type="checkbox"/> <b>Confined Space Entry Permit</b>                 |
| <input type="checkbox"/> <b>Hot work</b>   | <input type="checkbox"/> <b>Excavation/Trenching (for hot tap hook ups)</b> |
| <input type="checkbox"/> <b>Lead</b>   | <input type="checkbox"/> <b>Cr VI</b>                                       |
| <input type="checkbox"/> <b>Silica</b>   | <input type="checkbox"/> <b>Asbestos</b>                                    |
| <input type="checkbox"/> <b>Radiation</b>  | <input type="checkbox"/> <b>Lock out/tag out (Hazardous energy control)</b> |
| <input type="checkbox"/> <b>Fatigue management plan (extended work shifts or night work. See I.1 of APP)</b> | <input type="checkbox"/> <b>Other</b>                                       |

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**Material Handling Procedures, Spill Contingency**

During monitoring well installation tasks, procedures will be implemented to contain waste groundwater and to prevent the spread of potential contaminants. Spill containment and cleanup supplies will be available to contain any spills of potentially contaminated groundwater. Additionally, drill cuttings generated during well installation activities have not been previously classified as hazardous waste. Samples will be collected for analysis as necessary to confirm appropriate handling and disposal methods.

**Spill Kit Supplies**  **Applicable**  **Not Applicable**

Absorbent materials in sufficient quantities to absorb liquids, hand tools/squeegees/brooms, and drums to contain spilled liquids will be available.

**Treatment Technology Employed at Site (include comprehensive AHA)**  **None/Not Applicable**

**J. Site Control Measures**

**Work Zones**

It is not anticipated that a formal three-layer site control system will be necessary; however, if needed, the work area will be divided into an exclusion zone (EZ), a contamination reduction zone (CRZ), and a support zone (SZ). The SSHO will be responsible for designating the zones. Work areas will be established and protected so that the public and unauthorized personnel will be prohibited from entering any work area.

The EZ will include any area where harmful chemical, physical or other exposures may be encountered and will be marked with barrier tape or other means to warn personnel of the hazards. The EZ will be large enough to prevent contamination from leaving the marked area.

Immediately adjacent to the EZ, a CRZ with a decontamination area for equipment and personnel will be established. This area also will be delineated with traffic cones and/or barrier tape. The CRZ will be large enough to provide a safety zone to prevent the movement of contaminants from the EZ into the support zone. Only personnel who have completed the appropriate training, have a current medical clearance for hazardous waste site operations, and are wearing the proper PPE will be allowed within an EZ or CRZ. The remainder of the project area will be designated as the SZ. No special markings or warning labels are required for this area.

**K. Personal Hygiene and Decontamination**

**Site Sanitation Plan** (See also Section I.3 of the APP)

<b>Drinking Water</b>	Bottled drinking water will be maintained on site for use by all personnel.
<b>Washing and Toilet Facilities</b>	Hand sanitizer will be available on the site. Restrooms will be available locally.
<b>Eyewash/ Shower Facilities</b>	Emergency eye wash equipment will be available when there is potential exposure to corrosives, strong irritants, or toxic chemicals. Showers are not necessary for this project.
<b>Vermin Control</b>	Local pest management services will be contacted if needed. Building construction and laydown areas will be kept neat and orderly to reduce the potential for harborage of wild animals and pests.

**Waste Disposal**

IDW generated during groundwater monitoring and drilling activities will be containerized in drums or poly tanks. Since it is unknown if PFAS concentrations in this water will be below the Lifetime Health Advisory level or applicable soil standard, soil and water will not be spread or discharged to the ground surface. The water may be treated on site if there is a suitable system and then sampled and discharged to the ground surface after concentrations are confirmed to be below the Lifetime Health Advisory level. If a treatment system is not present, aqueous IDW will be transported off site for incineration.

Spent media (IDW) generated during operation and maintenance activities will be disposed of as de minimus municipal waste in accordance with the performance work statement.

Disposable materials (not classified as hazardous) such as gloves, used PPE, aluminum foil, paper towels, and similar items, will be placed and sealed in plastic garbage bags for disposal with sanitary waste from the site. IDW generated during the field activities will be classified, handled, and disposed of in accordance with the applicable federal, state, and local regulations.

**APPENDIX A  
SITE SAFETY AND HEALTH PLAN**

***Remedial Investigation (RI) at 4 Known Per- and Polyfluoroalkyl Substances (PFAS) Sites and Preliminary Assessment (PA)/Site Inspection (SI) at 34 Suspected Sites  
Former Seneca Army Depot Activity (SEDA), Romulus, New York***

**Personnel Hygiene and Decontamination**

Personnel decontamination will be instituted to minimize the possibility of exposure to chemical hazards. All field personnel will wash their hands and face with wet wipes, at a minimum, before eating, drinking, and leaving the site for the day. A shower will be taken as soon as possible after leaving the field.

The SSHO will be responsible for assessing the effectiveness of decontamination procedures. Should the SSHO deem the decontamination procedures to be ineffective, the SSHO will consult the Safety and Health Manager for guidance.

**Personnel Dry Decontamination Procedure**

**Not Needed**

Place all disposable PPE in a garbage bag as removed in the following order:

- (1) Brush off work boots, remove disposable over boots, or booties, if used
- (2) Remove gloves
- (3) Remove safety glasses
- (4) Remove Tyvek or cloth coverall, if used
- (5) Remove respirator, if used
- (6) Remove inner gloves
- (7) Wash hands/face before eating/drinking

**Personnel Wet Decontamination Procedure**

**Not Needed**

- (1) Wash overboots in soapy water and rinse
- (2) Remove overboots or booties
- (3) Remove gloves
- (4) Remove safety glasses
- (5) Remove Tyvek or cloth coverall, if used
- (6) Remove respirator, if used
- (7) Remove inner gloves
- (8) Wash hands/face before eating/drinking

**L. Equipment Decontamination**

**Sampling Equipment Decontamination**

All sampling equipment will be thoroughly decontaminated as follows:

- (1) Wash and scrub with low phosphate detergent
- (2) Potable tap water rinse 1
- (3) Potable tap water rinse 2
- (4) Thoroughly rinse with deionized water, if specified by the Work plan
- (5) Air dry
- (6) Wrap in aluminum foil for transport, if specified by the Work Plan

**Heavy Equipment Decontamination**

See HGL AHA for equipment decontamination. All heavy equipment and tool parts that contact subsurface soil are constructed of heavy gauge steel and have no natural or synthetic components that could absorb and retain most soil-borne organic contaminants.

Prior to removal from the work site, potential contaminated soil/groundwater will be scraped or brushed from the exterior surfaces. The drill rig, augers and any other large equipment in the exclusion zone will be taken to a decontamination pad and steam cleaned.

**M. Emergency Equipment and First Aid**

**Emergency Equipment/Information**

Emergency equipment and information brought on site will include, but is not limited to:

- An effective means of communication (hard-wired or cellular telephone, two-way radio, etc.) to call 911 or other emergency response sources;
- A minimum of one working vehicle to effectively transport injured worker;
- The telephone numbers of physicians, hospitals, and ambulances;
- A map delineating the best route to the nearest medical facility;
- A minimum of one ANSI Z308.1, Type III first aid kit for portable outdoor settings;
- A minimum of one approved fire extinguisher (10-B:C);
- A spill kit; and
- Air horn or car horn to be used to signal an emergency. Uninterrupted 10-second horn indicates site evacuation. Short blasts of horn (3) indicates injury. Cell phones or hand-held radios will also be used for emergency communication.

First aid kits will be maintained on site in vehicles and in areas where their use may be needed, such as chemical handling areas, areas where contact with potentially contaminated material is possible, or areas where hand tools are used. The contents of first aid kits will be checked prior to their use on site and at least every 3 months when work is in progress so that when they are needed, they are complete, in good condition, and have not expired.

In addition, when a medical facility or physician is not accessible within 5 minutes of the work site, a minimum of two personnel on each shift will be qualified to administer first aid and CPR.

**APPENDIX A  
SITE SAFETY AND HEALTH PLAN**

***Remedial Investigation (RI) at 4 Known Per- and Polyfluoroalkyl Substances (PFAS) Sites and Preliminary Assessment (PA)/Site Inspection (SI) at 34 Suspected Sites  
Former Seneca Army Depot Activity (SEDA), Romulus, New York***

**N. Emergency Response and Contingency Plan**

**(Check if addressed and if applicable)**

Pre-emergency planning. Agreement established with contractor or government-designated authority, local responders, and the servicing emergency medical facility that specifies responsibilities. The site manager/field supervisor and SSHO are responsible for directing emergency response operations, notifying on-site and off-site personnel, requesting aid from outside sources, and documenting the event. Note: Call HGL's 24/7 emergency hotline (800-341-3647), if normal communication processes are unavailable, to report and obtain assistance for major emergencies such as fires, criminal acts, serious injuries or illnesses, and travel-related emergencies such as stranded personnel, major power outages, weather emergencies, etc.

Personnel and lines of authority are defined in Section D of APP.

**Evacuation and Rally Points:**

Severe weather – move indoors (Exact location for indoor shelter in the event of severe weather will be determined prior to starting field activities).

Additional rally points and evacuation methods to be identified on site as needed. If no shelter is available, move into field vehicles and travel to hotel, if necessary.

Decontamination and medical treatment of injured personnel. Field crews will have first aid kits and at least two staff qualified to administer first aid. The objective will be to stabilize the victim and call for medical assistance.

Route map to emergency medical facilities and phone numbers for emergency responders. A list of telephone numbers and directions to these agencies will be in each vehicle. All personnel will be informed of this list and the communication system at the morning tailgate safety meeting. (See Section I.2 of APP).

Criteria for alerting the local community. If evacuation of the general public is required because of either normal site operations or an emergency event, the safety point of contact, USACE, and HGL SSHO are responsible for contacting the appropriate local officials who will execute and coordinate an evacuation.  Not Applicable

**ATTACHMENT 1**  
**ACTIVITY HAZARD ANALYSES FORMS**

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**ACTIVITY HAZARD ANALYSIS (AHA)**

<b>Activity/Work Task:</b> Mobilization and Demobilization <b>Project Name:</b> Former Seneca Army Depot (SEDA) - RI at 4 Known PFAS Sites and SI at 34 Suspected PFAS Sites OU-1 <b>Project Location:</b> Romulus, NY <b>Contract Number:</b> W912DY20D0017 <b>Task Order Number:</b> W912DY21F0310 <b>Baseline AHA Prepared By:</b> Richard Totino, Project Manager <b>Reviewed By:</b> Edie Scala-Hampson, CIH, CHMM <b>Date Prepared:</b> 06 January 2023 <b>Task Start Date:</b> 1 March 2023 <b>Task Duration:</b> 6 Months <b>Field Notes, Comments, etc.:</b>	<b>Overall Risk Assessment Code (RAC) (Use highest code)</b>					<b>L</b>
	<b>Risk Assessment Code (RAC) Matrix</b>					
	<b>Severity</b>	<b>Probability</b>				
		Frequent	Likely	Occasional	Seldom	Unlikely
	Catastrophic	<b>E</b>	<b>E</b>	<b>H</b>	<b>H</b>	<b>M</b>
	Critical	<b>E</b>	<b>H</b>	<b>H</b>	<b>M</b>	<b>L</b>
	Marginal	<b>H</b>	<b>M</b>	<b>M</b>	<b>L</b>	<b>L</b>
	Negligible	<b>M</b>	<b>L</b>	<b>L</b>	<b>L</b>	<b>L</b>
	Step 1: Review each "Hazard" with identified safety "Controls" and determine RAC (See above)					
	"Probability" is the likelihood to cause an incident, near miss, or accident and identified as: Frequent, Likely, Occasional, Seldom, or Unlikely.				<b>RAC Chart</b>	
"Severity" is the outcome/degree if an incident, near miss, or accident did occur and identified as: Catastrophic, Critical, Marginal, or Negligible				<b>E = Extremely High Risk</b>		
Step 2: Identify the RAC (Probability/Severity) as E, H, M, or L for each "Hazard" on AHA. Annotate the overall highest RAC at the top of AHA.				<b>H = High Risk</b>		
				<b>M = Moderate Risk</b>		
				<b>L = Low Risk</b>		

Job Steps	Hazards	Controls	RAC
Review-Health and Safety needs	Inadequate preparation that can lead to the pain and suffering of an accident or personal injury	Confirm all field personnel understand the project hazards and hazard controls and are trained in the procedures corresponding to work assignments. Conduct pre-entry health and safety briefing. Confirm all site hazards are recognized. Confirm all necessary equipment to evaluate and control site hazards is available, calibrated and in good working condition. Confirm applicable engineering, administrative and personal protective equipment (PPE) controls are ready to be implemented as needed. Confirm emergency safety and first aid supplies are available. Review emergency procedures and evacuation plans.	<b>L</b>

Job Steps	Hazards	Controls	RAC
Mobilize/Demobilize Equipment, Tools, and Safety Gear	Strains, sprains, awkward bending/lifts, and ergonomic hazards	<p>Move the load inside the truck as close to the edge of the bed as possible to be ready for unloading/ loading.</p> <p>Test the load first by nudging the item or container to estimate its weight and to determine if it moves on its own.</p> <p>Seek assistance in moving the object or load if it is heavier than 50 pounds.</p> <p>Slide the load across the truck bed, do not lift and move.</p> <p>Move obstructions inside the truck to allow the load to slide across the truck bed.</p> <p>Use a step stool or step ladder to gain access to bed.</p> <p>Use proper lifting techniques. Lift with legs and a straight back. Do not twist while carrying a load. Move feet to avoid twisting.</p> <p>Know your limitations</p> <p>Ensure walking pathway is clear</p> <p>Do not lift greater than 50 pounds without mechanical assistance or two-person lift</p> <p>Limit repetitive awkward motions</p> <p>See General Site Hazards AHA</p>	L
Travel	Traffic (road and site traffic)	<p>Adjust seat and mirrors to ensure that you can reach controls and see behind you.</p> <p>Inspect vehicle to confirm it is in good working order and all cargo is secured and distractions are minimized. Familiarize yourself with the route and directions.</p>	L
On site Mobilization/Demobilization: <ul style="list-style-type: none"> <li>Determine location for setup/staging equipment. Determine strategy for demobilization</li> <li>Develop capability at the site, to include installation of office/equipment storage trailers, etc., as needed</li> <li>Setup/take down trailers and other support services, as needed</li> </ul>	Traffic-Struck by hazards	<p>Select location away from traffic.</p> <p>Place barricades for work site protection, if necessary.</p> <p>Wear high-visibility vest.</p> <p>Stay clear of traffic and equipment. Have all necessary PPE (hardhat, safety glasses, hearing protection, vest, etc.)</p>	L
	Driving over soft ground Uneven and rough terrain	Choose location with level and firm soils.	
	Site access control-unwanted entry	Use barricades or caution tape to mark the work area if there is a potential for intrusion by unauthorized personnel.	
	Electric shock	Require that all electrical power hook up, installations and disconnections be made or certified by a qualified electrician who will provide written certification of installation and grounding.	
Removal and transport of equipment and supplies from the site	Take home toxics	<p>Decontaminate equipment and clothing as needed to minimize transfer of contaminants. Do not bring contaminated PPE or boots into truck.</p> <p>Use liners to prevent contamination of truck</p>	L
	Same hazards as in Step 4 above	See action to eliminate or minimize hazards in Step 4	



Job Steps	Hazards	Controls	RAC
General site work	General site hazards: Insect bites and stings .Contact dermatitis from poisonous and irritating plants (poison ivy, poison oak, and poison sumac). Vehicle traffic Severe weather Heat stress Cold stress Noise Lifting Slips, trips, falls UV hazards, etc.	Refer to General Site Work AHA Pack what you will need for control of hazards	L

Job Steps	Hazards	Controls	RAC
<b><i>Add Steps, Hazards, and Actions to Eliminate or Minimize Hazards based on conditions encountered in the field.</i></b>			

Equipment	Training	Inspection
<p><u>Personal Protective Equipment:</u></p> <p>Level D:  Hard Hat  Safety Glasses  Safety-Toed Boots  Work Gloves/ Chemical resistant gloves  ANSI Class 2 reflective warning vests</p> <p><u>Other Equipment:</u></p> <p>Generator  Fire Extinguishers  Emergency Eyewash  First Aid Kit  Insect repellent with DEET  Repel Permanone™  Hand tools  Spill containment supplies  First aid supplies  Containers as needed  Tarps  GFCI  Heavy duty ext. cords  Drinking water  Weather radio  Heat stress monitoring  Windsock  Sampling equipment: including pumps, pump controllers, PID/OVM, water level probe, misc. hand tools</p>	<p>Competent Person (CP) / Qualified Person (QP): NA</p> <p>CP/CDSO <u>TBD</u>  QP/First Aid and CPR <u>TBD</u>  QP/First Aid and CPR <u>TBD</u></p> <p>Training Requirements (as determined by the SSHO):</p> <p>HAZWOPER 40 hour  Site safety orientation  Tailgate meetings  Emergency procedures  Hazard communication  Hearing conservation  Applicable AHAs  Fire extinguisher use  Biological hazard identification and control  Tornado shelter location  Lightning safety procedures  Heat stress prevention and heat stroke treatment  Cold stress prevention</p>	<p>Daily site safety inspection (CDSO) <u>TBD</u></p> <p>Housekeeping (daily)  Eye wash equipment (weekly)  Fire extinguisher (monthly)  Vehicle inspection daily  Equipment and tools inspection daily and before use  Survey areas for poisonous plants, insects, and animals (each work area)  Check body for ticks (each evening during tick season)  Identify closest usable tornado shelter that is available (each work area).</p>

**ACTIVITY HAZARD ANALYSIS**

<b>Activity/Work Task:</b> MEC Operations Anomaly Avoidance During Soil Sampling and Monitoring Well Installation <b>Project Name:</b> Former Seneca Army Depot (SEDA) - RI at 4 Known PFAS Sites and SI at Suspected PFAS Sites <b>Project Location:</b> Romulus, NY <b>Contract Number:</b> W912DY20D0017 <b>Task Order Number:</b> W912DY21F0310 <b>Baseline AHA Prepared By:</b> Richard Totino, Project Manager <b>Reviewed By:</b> Edie Scala-Hampson, CIH, CHMM <b>Date Prepared:</b> 06 January 2023 <b>Task Start Date:</b> 1 March 2023 <b>Task Duration:</b> 6 Months <b>Field Notes, Comments, etc.:</b>	<b>Overall Risk Assessment Code (RAC) (Use highest code)</b>					<b>L</b>
	<b>Risk Assessment Code (RAC) Matrix</b>					
	<b>Severity</b>	<b>Probability</b>				
		Frequent	Likely	Occasional	Seldom	Unlikely
	Catastrophic	<b>E</b>	<b>E</b>	<b>H</b>	<b>H</b>	<b>M</b>
	Critical	<b>E</b>	<b>H</b>	<b>H</b>	<b>M</b>	<b>L</b>
	Marginal	<b>H</b>	<b>M</b>	<b>M</b>	<b>L</b>	<b>L</b>
	Negligible	<b>M</b>	<b>L</b>	<b>L</b>	<b>L</b>	<b>L</b>
	Step 1: Review each "Hazard" with identified safety "Controls" and determine RAC (See above)					
	"Probability" is the likelihood to cause an incident, near miss, or accident and identified as: Frequent, Likely, Occasional, Seldom, or Unlikely.				<b>RAC Chart</b>	
"Severity" is the outcome/degree if an incident, near miss, or accident did occur and identified as: Catastrophic, Critical, Marginal, or Negligible				<b>E = Extremely High Risk</b>		
Step 2: Identify the RAC (Probability/Severity) as E, H, M, or L for each "Hazard" on AHA. Annotate the overall highest RAC at the top of AHA.				<b>H = High Risk</b>		
				<b>M = Moderate Risk</b>		
				<b>L = Low Risk</b>		

Job Steps	Hazards	Controls	RAC
Munitions and Explosives of Concern (MEC) anomaly avoidance during soil sampling, testing, and monitoring well installation.	Unauthorized entry	Implement positive site access control prior to site operations.  Maintain a constant watch or surveillance for intrusion of unauthorized personnel. Positive site access control will be established prior to on-site operations using barricades, signs or other methods to control unauthorized access during tasks that could cause exposure to MEC or other safety and health hazards.	<b>L</b>
Conduct visual and magnetometer check to avoid MEC hazards during sampling, boring, and drilling activities.	MEC hazard/explosion, fire, and overpressure	Use only trained and qualified Unexploded Ordnance (UXO) Technicians to perform MEC anomaly avoidance responsibilities.  Deliver daily task-specific briefings regarding the hazards associated with the task and procedures used to control/mitigate the hazards.  Provide field team instruction on:  <ul style="list-style-type: none"> <li>- MEC/UXO hazards awareness, recognition, avoidance, and reporting procedures.</li> <li>- The requirement that non-UXO personnel be escorted by a UXO Technician II or above in areas where MEC/UXO is suspected.</li> <li>- The requirement that non-UXO personnel will not touch or disturb any potential MEC items.</li> <li>- The requirement that non-UXO personnel adhere to the instruction of the UXO Technician.</li> <li>- The markings for vehicle and foot path ingress/egress routes on the work site.</li> </ul>	<b>L</b>

Job Steps	Hazards	Controls	RAC
Conduct visual and magnetometer check to avoid MEC hazards during sampling, boring, and drilling activities. (continued)	MEC hazard/explosion, fire, and overpressure (continued)	<p>Use red or orange pin flags as visible warning to field personnel of identified hazards.</p> <p>Use required personal protective equipment (PPE) as indicated by the Site Safety and Health Plan (SSHP), by all personnel inside the exclusion zone.</p> <p>Do not disturb soil or contact unidentified objects. Implement the 3Rs (Recognize, Retreat, Report) and report any MEC/UXO discovered to the UXO Technician or designated emergency point of contact.</p> <p>Require that UXO-qualified personnel be present to provide MEC avoidance support during sampling, testing, and monitoring well installation activities.</p> <p>Require activities a UXO Technician II or above to conduct incremental monitoring using a magnetometer IAW HGL SOP 15.12 during boring, drilling, and excavation.</p>	L
Walking around the site. General site hazards	Adverse weather and lightning	<p>Monitor warnings or indications of severe weather conditions and take appropriate precautions to protect personnel and property. Be aware of lightning, use the lightning 30/30 Rule: If it takes less than 30 seconds to hear thunder after seeing the flash, lightning is near enough to pose a threat; after the storm ends, wait 30 minutes before resuming work activities. If a lightning meter is used, MEC operations should cease from first lightning strike within 6 miles and wait 30 minutes from last strike before field activities resumes.</p> <p>Suspend all work activities when an electrical storm approaches to within 5 miles of the project location.</p>	L
	Heavy equipment/drill rigs	<p>Be aware and pay careful attention to moving heavy equipment/drill rigs.</p> <p>Wear high-visibility apparel that meets ANSI/ISEA 107 Class 2 requirements.</p> <p>Ensure equipment/drill rig operators are aware of your presence and do not turn your back on moving equipment.</p> <p>Use spotters and ground guides when moving heavy equipment/drill vehicles in reduced maneuvering or visibility areas as an aide during back up.</p> <p>Avoid pinch points.</p> <p>Cease all drilling and secure drill platform before UXO personnel conduct down-hole instrument monitoring.</p>	L
	Overhead hazards	<p>Require hard hats where there is a potential for head injury. All protective headgear will meet ANZI Z89.1.</p>	L
Working near moving equipment	Cuts, lacerations, abrasions from flying debris from soil movement (dust, dirt, rocks), brush/ vegetation (skin/eye hazards) and trip hazards	<p>Wear thick clothing fabrics and appropriate PPE such as leather gloves when there is a potential for cuts and lacerations.</p> <p>Wear safety glasses and other required PPE as indicated in the SSHP if there is a potential for dust and flying debris.</p> <p>Maintain a readily available eye wash.</p> <p>Maintain adequate first aid supplies.</p> <p>Watch for people, plants, rocks, animals, and animal burrows.</p>	L



Job Steps	Hazards	Controls	RAC
<b>Add Steps, Hazards, and Actions to Eliminate or Minimize Hazards based on conditions encountered in the field.</b>			

Equipment	Training	Inspection
<p><u>Personal Protective Equipment:</u>            Safety Glasses            Safety shoes            Other PPE as indicated in the SSHP</p> <p><u>Other Equipment:</u>            Down-hole and handheld detector            DGPS System            Batteries</p>	<p>Competent Person (CP) / Qualified Person (QP):</p> <p>CP/SSHO _____            Alternate CP/SSHO _____            QP/First Aid and CPR _____            QP/First Aid and CPR _____</p> <p>Training Requirements (as determined by the SSHO):</p> <p>UXO personnel will be trained IAW DDESB TP 18            Documentation of training will be kept on file at the project site            Initial Site Safety/Task hazard training            PPE training            40-hr. HAZWOPER,            8-hr. Annual HAZWOPER            Training in survey instruments-magnetometers.</p>	<p>Daily site safety inspection (SSHO) _____</p> <p>Inspect equipment setup            Perform equipment detection validation test.            Inspect all electronic connections and system test for proper setup.            Perform data input validation.            Secure batteries from movement and damage.            Inspect batteries daily for damage, cracks and leaks and remove from service when these conditions are present.</p>

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## Construction Industry



**THE UNITED STATES HAS ALWAYS MAINTAINED A HIGHLY TRAINED AND READY FORCE TO PROTECT ITS NATIONAL INTERESTS.**

After both world wars and recently with force realignment and modernization efforts, the Department of Defense (DoD) closed a number of military installations and training areas, and returned other lands previously used for military-related activities to public use. Because of the live-fire training and testing required to maintain this force, millions of acres in the United States

are known or suspected to contain military munitions in the form of unexploded ordnance (UXO), or discarded military munitions (DMM). In some cases, munitions constituents (e.g., TNT) may also exist in high enough concentrations to present an explosive (detonation) hazard. Although DoD routinely made an effort to remove any explosive hazards present before releasing land from its control, some may remain. These explosive hazards may be found on the surface or in the subsurface.

Munitions are designed to injure, maim or kill people, or to destroy equipment or structures. Consider any encounter with a known or suspected munition as an extremely dangerous situation.



During construction work (e.g. clearing vegetation, grubbing, grading, or excavation), munitions may be encountered. This is particularly true for areas known to have once been used by the military for munitions-related activities (e.g., live-fire training and testing, and munitions demilitarization).

Military munitions operating buildings (e.g., munitions production and demilitarization facilities) and any installed equipment may contain explosives residue in high enough concentrations to present an explosive hazard. Building features (e.g., floors, walls, drains, internal and external piping, and ventilation systems), in which explosives residues could accumulate and present an explosive hazard, are of particular concern. Industrial equipment, particularly equipment with internal cavities, from facilities used in munitions production or demilitarization operations (e.g., cast loading, milling, or steam-out) that generated explosive residues (e.g., dust or vapors) is also of concern.



## WILL YOU KNOW WHAT TO DO IF YOU ENCOUNTER A MUNITION?

Areas at which DoD conducted munitions-related activities include, but are not limited to operational and former ranges, and areas used for munitions demilitarization. The types of explosive hazards present may differ between areas. As an example, a former impact area may contain UXO, while a former maneuver area may only contain DMM.

Munitions can also be found in areas where combat operations once occurred. Even cannon balls found on Civil War battlefields present a potential explosive hazard. However, for a variety of reasons (unauthorized disposals, discarded souvenirs) munitions may be encountered almost anywhere.



Prior to working in areas with a history of military use, even areas where DoD has completed an environmental response to remove any hazards detected, it is important to familiarize yourself with the site history and potential hazards. This can be provided through site-specific safety training. In some cases, safety officials may determine that on-site or on-call construction support by UXO-qualified personnel is necessary to help ensure the safety of construction workers, particularly during ground disturbing or intrusive activities.



# MUNITIONS ARE DESIGNED TO BE DANGEROUS

## Remember that munitions:

- Come in many shapes and sizes.
  - They could look like a:
    - Pointed pipe
    - Soda can
    - Baseball
    - Car muffler
  - They may:
    - Look new or old
    - Be found alone or in clusters
- Should be considered extremely dangerous regardless of size or age
- Munitions often become more dangerous with age, not safer



## Munitions may be:

- Found almost anywhere
- Clearly visible on the surface
- Buried at depths of inches to many feet
- Partially or completely hidden by dirt or vegetation
- Found under paved areas (roads, parking lots) or building slabs
- Underwater, in lakes, streams, or the ocean
- Exposed by natural phenomena (e.g., tides)
- Easy or difficult to recognize



While munitions are most likely to be encountered during construction in areas where DoD conducted munitions-related activities, they may be encountered anywhere. To protect yourself and your co-workers, know whether munitions-related activities ever occurred at your work site, and learn to follow the 3Rs: Recognize, Retreat, Report.



# Recognize

Recognizing that you may have encountered a munition is one of the most important steps in reducing the potential risk of injury or death. Because munitions pose a potential explosive hazard, they should never be touched, moved or disturbed (handled).

## WILL YOU DO THE RIGHT THING WHEN THE TIME COMES?

In 1993, a construction worker digging a trench unearthed what looked like large bullets. He recognized the potential danger, stopped digging and notified his supervisor. Local authorities were called. As a result of this worker's actions, nearly 150 high explosive tank shells were recovered from a former WWI training area.

Remember, whether complete or in pieces, any munition or suspect munition encountered should be considered extremely dangerous. Do the right thing! immediately stop all operations in the area; do not touch, move or disturb it, and notify your supervisor or local authorities.



# Retreat

If you encounter or suspect you may have encountered a munition, do not touch, move or disturb it. Instead, carefully retreat from the area by retracing your steps.

- Immediately stop all construction activities in the area, warning others of the potential danger.
- Do not approach the munition or a suspect munition. (Some fuzes are sensitive to changes in temperature, movement or pressure.)
- Move away from the area and keep others away from it!

Unfortunately, munitions are often popular, but potentially deadly souvenirs. Taking a munition for a keepsake presents an immediate and real danger to you. Bringing one home endangers your family, your friends, and your community. Don't be tempted.

# Report

If you encounter or suspect you have encountered a munition, do not touch, move or disturb it. Instead, immediately stop construction activities and move away from the area and report what you saw.

Protect yourself, your co-workers, and the public by immediately reporting any munitions or suspect munitions encountered to your foreman, site supervisor, or by calling 911.



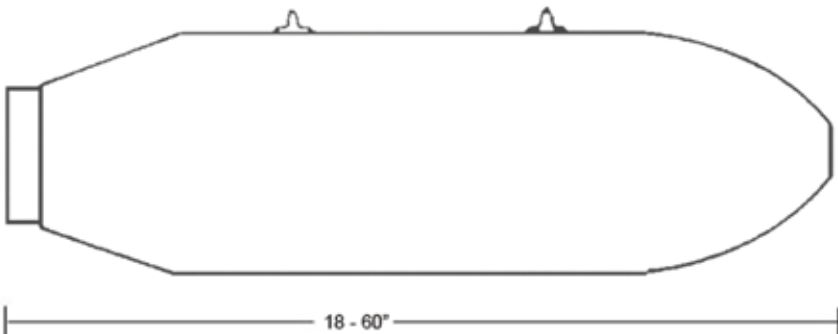
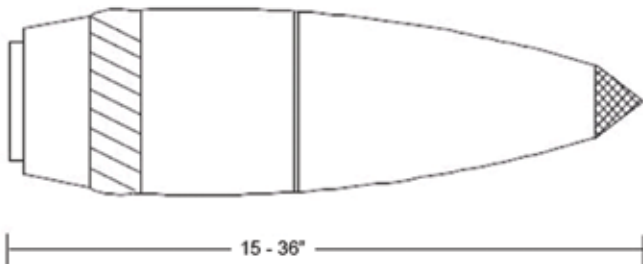
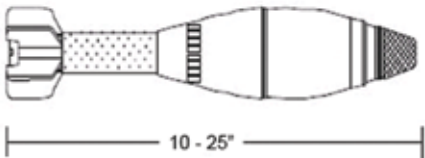
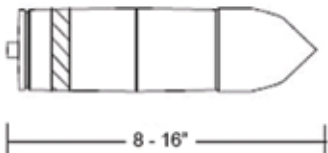
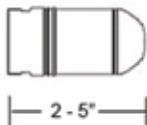
Provide as much information as possible about what you saw and where you saw it. This will help the police and explosive ordnance disposal personnel (usually referred to as EOD personnel) find, evaluate and address the situation.

If you believe you may have encountered a munition, report the following:

- The area where you encountered it.
- A general description of the munition, to include:
  - Its size
  - Its shape
  - Any readily visible markings--do not approach or handle the munition to see the markings



**MUNITIONS  
COMMON SIZE  
AND SHAPE  
PROFILES**



# Don't Forget

- Munitions are dangerous and may not be easily recognizable!
- The history of your work site--know when you are working on a former military range or disposal area!
- Never touch, move or disturb a munition!

## Follow the 3Rs

### Recognize

When you may have encountered a munition.

### Retreat

Do not touch, move or disturb it, but carefully leave the area.

### Report

Immediately notify the police if on land,  
or the U.S. Coast Guard if at sea.

#### Emergency contacts:

- On land: Call 911
- At sea: Use Channel 16 (156.800 MHz)



For additional information call  
U.S. Army Technical Center for Explosives Safety  
at (918) 420-8919  
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**ACTIVITY HAZARD ANALYSIS (AHA)**

<b>Activity/Work Task:</b> General Site Work <b>Project Name:</b> Former Seneca Army Depot (SEDA) - RI at 4 Known PFAS Sites and SI at Suspected PFAS Sites <b>Project Location:</b> Romulus, NY <b>Contract Number:</b> W912DY20D0017 <b>Task Order Number:</b> W912DY21F0310 <b>Baseline AHA Prepared By:</b> Richard Totino, Project Manager <b>Reviewed By:</b> Edie Scala-Hampson, CIH, CHMM <b>Date Prepared:</b> 06 January 2023 <b>Task Start Date:</b> 1 March 2023 <b>Task Duration:</b> 6 Months <b>Field Notes, Comments, etc.:</b>	<b>Overall Risk Assessment Code (RAC) (Use highest code)</b>					<b>L</b>
	<b>Risk Assessment Code (RAC) Matrix</b>					
	<b>Severity</b>	<b>Probability</b>				
		Frequent	Likely	Occasional	Seldom	Unlikely
	Catastrophic	<b>E</b>	<b>E</b>	<b>H</b>	<b>H</b>	<b>M</b>
	Critical	<b>E</b>	<b>H</b>	<b>H</b>	<b>M</b>	<b>L</b>
	Marginal	<b>H</b>	<b>M</b>	<b>M</b>	<b>L</b>	<b>L</b>
	Negligible	<b>M</b>	<b>L</b>	<b>L</b>	<b>L</b>	<b>L</b>
	Step 1: Review each "Hazard" with identified safety "Controls" and determine RAC (See above)					
	<b>Probability</b> the likelihood the activity will cause a Mishap (near miss, incident or accident). Identify as: Frequent, Likely, Occasional, Seldom, or Unlikely.				<b>RAC Chart</b>	
<b>Severity</b> the outcome/degree if a mishap occurred. Identify as: Catastrophic, Critical, Marginal, or Negligible				<b>E = Extremely High Risk</b>		
Step 2: Identify the RAC (Probability/Severity) as E, H, M, or L for each "Hazard" on AHA. Annotate the overall highest RAC at the top of AHA.				<b>H = High Risk</b>		
				<b>M = Moderate Risk</b>		
				<b>L = Low Risk</b>		

Job Steps	Hazards	Controls	RAC
Review—health and safety needs, communication, and preparatory instructions	Behavioral: Human error- Failure to plan/warn/train Inadequate preparation can lead to personal injuries, property damage, and project delays. Employees not trained in the safe execution of their assigned task may harm themselves or others	Conduct readiness review prior to beginning work on site.  Collateral Damage Safety Officer (CDSO) to identify applicable portions of Site Safety and Health Plan (SSHP) and include those and AHAs in site specific job training for workers.  CDSO to perform on-site verification that SSHP and AHAs capture all important site hazards and controls.  CDSO to verify that access to the necessary equipment to evaluate and control site hazards is available, complete, and in good condition (i.e., equipment, tools, personal protective equipment [PPE], materials, etc., required to perform the tasks). For example: Photoionization detector with correct lamp for evaluating chemical hazards in breathing zone.	<b>L</b>
	Unfamiliarity with site, general site hazards, project safety rules, chain of command, and emergency procedures Adding new personnel to work team, visitors	Conduct training and coordination with team. New employees will be trained and proficient before they are assigned to their jobs. Visitors will receive a site safety briefing and PPE.	

Job Steps	Hazards	Controls	RAC
	Emergency response unfamiliarity- Delay in response and treatment	Site Safety and Health Officer (SSHO) to verify that emergency safety supplies and first aid supplies are available and complete. SSHO to review emergency procedures, contact numbers and evacuation plans, severe weather shelters, and rally points. SSHO to confirm that all personnel know what to do in the event of an accident (personal or property damage).	
Transportation to site and site vehicle maneuvering	Struck by: Vehicle accidents/traffic	Prohibit cell phone use by driver while vehicle is in motion. Practice defensive driving and wear safety restraints when vehicle is in motion. Adjust vehicle per personal specifications and confirm that it is in good working order and all cargo is secured and distractions are minimized. Familiarize yourself with the route and directions. Keep vehicle speed appropriate to road conditions. Be aware of the onset of driving fatigue and take breaks as needed. Perform a walk-around vehicle inspection at least daily.	L
	Weather: Poor road conditions, ruts, snow, ice mud puddles, and poor traction	Monitor weather conditions and consider postponing travel or decreasing speed in poor travel conditions. Match driving speed to the conditions.	
	Struck by or against: Maneuvering in tight areas/potential vehicle or personnel damage	Use a spotter to help maneuver in tight areas. Avoid backing if possible. Check all blind spots before you attempt to move vehicle. Sound horn before backing and move slowly.	
Secure site	Unwanted entry: Security/site access control	Establish positive site access control prior to on-site operations using barricades, signs, or fencing.	L
Material handling and setup	Strains, sprains, awkward bending/lifting/positions, and ergonomic hazards	Know your own limitations and ask for help if you need it. Size up the load before the lift. Use mechanical assistance or 2-person lift for loads greater than 50 pounds and for large awkward loads. Lift with the legs and keep back straight. DO NOT lift and twist torso at the same time. Confirm that the walking pathway is clear of depressions or debris. Limit repetitive awkward motions and unbalanced lifting as much as possible.	L



Job Steps	Hazards	Controls	RAC
Working around vehicles and or earth moving equipment	Struck-by hazards, crushing hazards, caught-between, and noise-hearing loss	<p>Select work location away from traffic.</p> <p>Discuss active work areas in daily briefings.</p> <p>Place barricades or stationary vehicles for work site protection, if necessary.</p> <p>Wear high-visibility vest.</p> <p>STAY CLEAR of traffic and earth moving equipment.</p> <p>Make eye contact with operators of equipment to make sure they know your intentions.</p> <p>Prohibit machinery or equipment, requiring an operator, to run unattended.</p> <p>Confirm all heavy equipment has functional back-up alarms.</p> <p>Minimize the number of ground personnel working around heavy equipment.</p> <p>Never position yourself between moving and fixed objects</p> <p>Wear hearing protection if noise levels are &gt; 85 dBA.</p>	L
Working around/near other trades or contractors	Hazards caused by other trades-Failure to communicate hazards (various hazards: toxic dusts, chemicals, physical hazards, biological hazards)	<p>Coordinate with subcontractors and other personnel daily.</p> <p>Notify others of potential hazards posed by site work and ask them to do the same for us. Stop work or implement controls if the work of others poses a hazard for HGL or subcontractor personnel.</p> <p>Inform subcontractors of locations of warning signs, hazards, and precautions that they should be taking. Provide specific hazard communication training tailored to the workplace.</p> <p>Inspect the work of subcontractors to verify safe operation and compliance with applicable requirements and require correction of deficiencies.</p> <p>Ask the “creating” employers (subcontractors) to correct hazards. NEVER tell the “creating” employer how to do their job but tell subcontractors to get the hazard corrected and hold them accountable. If HGL detects a safety violation, we have an obligation to see that it gets corrected by the subcontractor that created the hazard. Ensure that all site workers have the required OSHA training.</p> <p>Require that each subcontractor be responsible for conducting inspections of their specific operations and equipment, conducting exposure monitoring for their workers and providing Safety Data Sheets, PPE, medical surveillance and specialized worker training (e.g., forklift, excavation and trenching, fall protection, etc.).</p> <p>Acquire documentation.</p>	L

Job Steps	Hazards	Controls	RAC
	Fire	Maintain at least one dry chemical fire extinguisher having a minimum UL rating of 1A5BC on site. 10B:C should be in cab of bulldozer, crane, front-end-loader, etc. 4A:60B:C in immediate area of hot work 40-B:C in immediate re-fueling area 3A:40B:C (within 30 feet) near generator Limit smoking to designated areas	
Working in remote areas	Criminal activity, wild animals, falls leading to inability to self-evacuate Getting lost	Use the buddy system if possible; however, if it cannot be used, follow the Lone Worker Procedure: Contact Project Manager or alternate point of contact at work start, mid-day, and when leaving work site at end of day. Let others on site (non-HGL staff) know where you are working and establish a check in procedure. Bring a smart phone, topographic and/or site map, compass, GPS.	L
	Injuries and accidents from driving/walking over soft ground and uneven and rough terrain	Choose location with level and firm soils, when possible. Have gravel added to site roads to improve traction. Maintain vehicle speed corresponding to road conditions. Watch footing when walking in mud or wet soils	
	Unhygienic conditions	Confirm that restroom facilities, if installed on site, are adequately provided and maintained. Maintain hand disinfectant, wipes, and wash stations.	
	Slip, trip, and fall hazards	Wear slip-resistant footwear. Inspect the work area for slip, trip, and fall hazards Use sand or salt or slip-on traction aids to control ice slip hazards, as needed, during winter months. Keep work area picked up and as clean as feasible Keep egress routes as clear and unobstructed as possible.	

Job Steps	Hazards	Controls	RAC
<p>General site work-working outdoors, walking on site</p>	<p>Biologicals—contact with poisonous and thorny plants, allergens, insects, and animal hazards (for example: spiders, hornets, reptiles, snakes, deer ticks (Lyme disease), mosquitoes, bird and rodent droppings, biting and stinging insects, thorny plants, etc.). Specify below any site-specific details and or review APP for specific biological hazards.</p>	<p>Note: All personnel have the option to complete the Voluntary Allergy/Sensitivity/Medical Questionnaire.</p> <p>Conduct visual inspection before work begins and note (mark) areas of poisonous vegetation, insect (hornet wasp) nests, and snake habitats.</p> <p>Use mosquito repellent with DEET and tick repellent with permethrin, as required.</p> <p>Treat clothing with permethrin-based products if ticks are prevalent.</p> <p>Know the local fauna and review emergency preparedness measures. Review potential animal dangers specific to the site and precautions (actions to take if run-in with wild animal occurs) and treatments.</p> <p>Inspect your body and clothing for ticks during outdoor activity and at the end of the day. Wear light-colored clothing so ticks can be more easily seen. Remove ticks right away to prevent infections.</p> <p>When in areas with tick potential, tuck pants into socks. Wear long-sleeved shirts that should be tucked in.</p> <p>Review information for poison ivy/oak recognition and treatment if plants are present.</p> <p>Use existing footpaths when possible.</p> <p>Avoid walking in uncleared areas with poison ivy or biological hazard potential.</p> <p>Use barrier cream and cleaning products such as Zanfel, Ivy Block, Tecnu, IvyX if poison ivy or poison oak is prevalent.</p> <ul style="list-style-type: none"> <li>• Wash hands using ivy cleanser, prior to eating, using restroom, operating motor vehicle, and after leaving the field.</li> <li>• Do not touch face with hands or clothing while in the field.</li> <li>• Remove contaminated work clothing with gloves. Store, bag, and wash separately.</li> </ul> <p>Use poison ivy cleansers (not lotion soap) to clean affected skin. Lotion soaps will spread the irritant oil on larger areas of the skin.</p> <p>Shower immediately upon leaving work.</p> <p>Wear snake chaps if poisonous snakes are present.</p>	<p>L</p>

Job Steps	Hazards	Controls	RAC
<p>General site work in heat and sun</p>	<p>UV exposure—sunburn Temperature stress: heat exhaustion, stroke</p>	<p>Wear UVA/UVB SPF sunscreen (minimum 30 SPF) and reapply frequently.</p> <p>Wear hats and clothing that shield skin from direct sun.</p> <p>Implement heat stress controls when the heat index is greater than 75 degrees Fahrenheit (°F), when the temperature is 75 °F or more with relative humidity of 55 percent or more:</p> <p>Acclimatize by gradually working in heat, systematically building up tolerance.</p> <p>Conduct field activities in the early morning, if possible, to avoid heat.</p> <p>Have enough water on site so that each worker can consume at a minimum, 1 quart per hour per shift.</p> <p>Have frequent reminders to personnel to take water breaks so that each person can consume enough water.</p> <p>Provide access to shade that is reasonably close to the work area.</p> <p>Take breaks, as necessary, in shady or cool areas and hydrate.</p> <p>Conduct training on risk factors, signs, and symptoms of heat illness; importance of hydration and acclimatization; importance of reporting symptoms; what to do in case of heat illness emergency; and process for contacting emergency medical services (see APP, Heat Stress Monitoring Program).</p> <p>Follow the requirements for physiological monitoring as stated in the APP. (e.g., During work in temperatures above 90 °F-adjusted temperature, perform physiological monitoring—see safety plan if wearing Tyvek® for when to start monitoring.)</p> <p>Be conscious of individual tolerances to work in hot weather and medication contraindication for heat exposure.</p> <p>Monitor yourself and co-workers for signs and symptoms of heat stress.</p>	<p>L</p>

Job Steps	Hazards	Controls	RAC
<p>General site work in cold temperatures</p>	<p>Temperature stress: cold, hypothermia</p>	<p>Institute cold stress controls when air temperature or wind chill is or may drop below 40° F, when parts of the body are or may become immersed in cold water, and when working in snow or ice.</p> <p>Train employees on the dangers and symptoms of cold-related illnesses and the applicable hazard controls.</p> <p>Train workers on the personal factors that may increase risk such as advanced age and circulatory problems and medications.</p> <p>Establish a buddy system and ensure that personnel watch each other for signs of cold related illnesses.</p> <p>Provide a warm break area and establish a schedule for warm-up breaks and increase the frequency of warm-up breaks with decreasing temperatures. Take warm-up breaks if personnel exhibit shivering or report pain in the extremities that might be due to incipient frostbite.</p> <p>Prevent or minimize exposure of bare skin if temperature or wind chill is less than minus (-) 25°F.</p> <p>Schedule tasks to avoid long periods during which workers must sit or stand still.</p> <p>Adjust work schedules or tasks for new employees to permit acclimatization to the cold conditions.</p> <p>Encourage personnel to drink adequate quantities of water, soup, or other fluids to ensure adequate hydration.</p> <p>Establish emergency plans to include immediately available dry clothing if there is a potential for personnel to be splashed or immersed in liquid.</p>	<p>L</p>

Job Steps	Hazards	Controls	RAC
<p>Repetition of work tasks for periods longer than 8 hours</p>	<p>Behavioral: Human error- Fatigue associated with extended work shifts including general drowsiness and associated driving fatigue</p>	<p>Operators of heavy equipment must not exceed 12 hours of duty time in any 24-hour period.</p> <p>Motor vehicle operators must not exceed 10 hours of driving in any 24-hour period.</p> <p>Do not operate motor vehicles after working for more than 12 hours during any 24-hour period.</p> <p>Know personal physical and psychological limitations.</p> <p>Stop work/driving when necessary to take breaks and hydrate.</p> <p>Stop work all together if fatigue endangers your safety or the safety of others. If appropriate, find a replacement for your job tasks.</p> <p>Schedule more demanding tasks for when endurance and alertness is best.</p> <p>Postpone more demanding and hazardous jobs if you are fatigued.</p> <p>Follow guidelines of APP for work-rest regimens under adverse conditions of heat or cold stress.</p>	<p><b>L</b></p>
<p>Completion of work shift and cleanup</p>	<p>Clothing contact with potentially irritant materials/insects</p> <p>Take home toxics</p>	<p>Decontaminate yourself and gear, as appropriate, for contaminants and dust.</p> <p>If appropriate, wear Tyvek® as necessary and washable or disposable over-boots to keep personal clothing and boots, clean and free of any contaminated soils.</p> <p>Use liners to prevent contamination of truck.</p> <p>Shower immediately at end of workday.</p> <p>Check body for ticks, bites, and signs of irritation or cuts.</p>	<p><b>L</b></p>

Job Steps	Hazards	Controls	RAC
<i>Add Steps, Hazards, and Actions to Eliminate or Minimize Hazards based on conditions encountered in the field.</i>			

Equipment	Training	Inspection																																																																																																														
<p>PPE Level D:  Hard hat (if there are overhead hazards)  Safety glasses  Safety-toed boots  Work gloves/chemical resistant gloves  ANSI Class 2 reflective warning vests  Hearing protection, as necessary</p> <p>Other Equipment:  Generator if needed  Fire extinguishers  Emergency eyewash bottle  First aid kit  Insect repellent—DEET and permethrin  Hand tools  Spill containment supplies, if needed  Containers as needed  Tarps  GFCI  Heavy duty extension cords  Drinking water  Weather radio/or  Smart phone apps (temperature stress, noise, weather)  Face coverings (if social distance cannot be maintained)  Hand sanitizer  Disinfectant wipes</p>	<p>Competent Person (CP) / Qualified Person (QP):</p> <p>CDSO <u>TBD</u>  QP/First Aid and CPR <u>TBD</u>  QP/First Aid and CPR <u>TBD</u></p> <p>Training Requirements (as determined by the CDSO):</p> <p>HAZWOPER 40 hour and current refresher  Supervisor training (CDSO)  OSHA 30 hour (CDSO)  Site safety orientation  Tailgate meetings  Emergency procedures  Hazard communication  Hearing conservation  Bloodborne pathogen  Applicable AHAs  Fire extinguisher use  Biological hazard identification and control  Severe weather shelter location  Lightning safety procedures  Temperature stress prevention, controls, treatment</p>	<p>Daily inspection (CDSO) <u>TBD</u></p> <p>Housekeeping (daily)  Fire extinguisher (monthly)  Vehicle inspection (daily)  Equipment and tools inspection (daily and before use)  Portable flexible cords or cables (daily)  Eyewashes (monthly)  Survey areas for poisonous plants, insects, and animals (each work area)  Identify closest usable severe weather shelter (ex. tornado shelter) that is available in each work area)  First Aid kit inspection every 3 months, if unopened they do not have to be opened for inspection.</p> <p style="text-align: center;"><b>Requirements for Basic First Aid Unit Package</b></p> <table border="1"> <thead> <tr> <th>Unit first aid item</th> <th>Minimum Size or Volume (metric)</th> <th>Minimum Size or Volume (US)</th> <th>Item quantity per unit package</th> <th>Unit package size</th> </tr> </thead> <tbody> <tr> <td>Absorbent Compress</td> <td>206 cm<sup>2</sup></td> <td>32 in<sup>2</sup></td> <td>1</td> <td>1</td> </tr> <tr> <td>Adhesive Bandage</td> <td>2.5 x 7.5 cm</td> <td>1 x 3 in</td> <td>16</td> <td>1</td> </tr> <tr> <td>Adhesive Tape</td> <td>2.3 m</td> <td>2.5 yd (total)</td> <td>1 or 2</td> <td>1 or 2</td> </tr> <tr> <td>Antiseptic Wipe</td> <td>2.5 x 2.5 cm</td> <td>1 x 1 in.</td> <td>10</td> <td>1</td> </tr> <tr> <td>Aspirin, Individually Wrapped</td> <td>325 mg</td> <td></td> <td>2</td> <td>2</td> </tr> <tr> <td>Bandage Compress (2 in-4 in)</td> <td>5 x 91 cm</td> <td>2 x 36 in.</td> <td>4</td> <td>1</td> </tr> <tr> <td>Burn Dressing</td> <td>10 x 10 cm</td> <td>4 x 4 in</td> <td>1</td> <td>1-2</td> </tr> <tr> <td>Burn Treatment</td> <td>0.9</td> <td>1/32 fl. Oz.</td> <td>6</td> <td>1</td> </tr> <tr> <td>Cold Pack</td> <td>10 x 12.5 cm</td> <td>4 x 5 in</td> <td>1</td> <td>1</td> </tr> <tr> <td>*Combat style Tourniquet with Windlass</td> <td>95.3 x 3.8</td> <td>37.5 x 1.5 in. width</td> <td>1</td> <td>1</td> </tr> <tr> <td>CPR Breathing Barrier</td> <td></td> <td></td> <td>1</td> <td>1</td> </tr> <tr> <td>Eye Covering, with means of attachment</td> <td>19 cm<sup>2</sup></td> <td>2.9 in<sup>2</sup></td> <td>2</td> <td>1</td> </tr> <tr> <td>Eye/Skin Wash</td> <td>118 ml (total)</td> <td>4 fl. oz total</td> <td>1</td> <td>2</td> </tr> <tr> <td>First Aid Guide</td> <td></td> <td></td> <td>1</td> <td>1</td> </tr> <tr> <td>Gloves, latex free</td> <td>XL</td> <td>XL</td> <td>2 pair</td> <td>1</td> </tr> <tr> <td>Hand Sanitizer</td> <td>0.9 g</td> <td>1/32 oz.</td> <td>6</td> <td></td> </tr> <tr> <td>Occlusive Dressing</td> <td>10.2 x 10.2</td> <td>4 x 4</td> <td>1</td> <td>2</td> </tr> <tr> <td>Roller Bandage (2 in.)</td> <td>5 x 366 cm</td> <td>2 in. x 4 yd.</td> <td>2</td> <td>1</td> </tr> <tr> <td>Roller Bandage (4 in.)</td> <td>10 x 366 cm</td> <td>4 in. x 4 yd.</td> <td>1</td> <td>1</td> </tr> <tr> <td>Sterile pad</td> <td>7.5 x 7.5 cm</td> <td>3 x 3 in.</td> <td>4</td> <td>1</td> </tr> <tr> <td>Triangular Bandage</td> <td>101 x 101 x 14cm</td> <td>40 x 40 x 30 in.</td> <td>1</td> <td>1</td> </tr> </tbody> </table> <p>* Required when power tools in use.</p>	Unit first aid item	Minimum Size or Volume (metric)	Minimum Size or Volume (US)	Item quantity per unit package	Unit package size	Absorbent Compress	206 cm <sup>2</sup>	32 in <sup>2</sup>	1	1	Adhesive Bandage	2.5 x 7.5 cm	1 x 3 in	16	1	Adhesive Tape	2.3 m	2.5 yd (total)	1 or 2	1 or 2	Antiseptic Wipe	2.5 x 2.5 cm	1 x 1 in.	10	1	Aspirin, Individually Wrapped	325 mg		2	2	Bandage Compress (2 in-4 in)	5 x 91 cm	2 x 36 in.	4	1	Burn Dressing	10 x 10 cm	4 x 4 in	1	1-2	Burn Treatment	0.9	1/32 fl. 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"Severity" is the outcome/degree if an incident, near miss, or accident did occur and identified as: Catastrophic, Critical, Marginal, or Negligible				<b>E = Extremely High Risk</b>		
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				<b>M = Moderate Risk</b>		
				<b>L = Low Risk</b>		

Job Steps	Hazards	Controls	RAC																
Site preparatory communication phase and inspection	Overhead utilities: arc flash and electrocution  Underground utilities: electrocution, arc flash, fire, property damage	Identify overhead lines and complete a site layout plan prior to mobilizing the equipment. Assume power lines to be energized unless verified to be de-energized and visibly grounded. Keep equipment at least 20 feet from uninsulated transmission lines unless voltage is known so closer approach distances can be calculated. Keep equipment at least 10 feet from insulated electrical lines. Include electrical hazard controls in site training for personnel who will work near electrical lines.  <b>Minimum Clearance from Energized Overhead Electric Lines</b> <table border="1"> <thead> <tr> <th align="center">Nominal System Voltage (kilovolts)</th> <th align="center">Minimum Rated Clearance (feet)</th> </tr> </thead> <tbody> <tr><td align="center">0-50</td><td align="center">10</td></tr> <tr><td align="center">51-200</td><td align="center">15</td></tr> <tr><td align="center">201-300</td><td align="center">20</td></tr> <tr><td align="center">301-500</td><td align="center">25</td></tr> <tr><td align="center">501-750</td><td align="center">35</td></tr> <tr><td align="center">751-1,000</td><td align="center">45</td></tr> <tr><td align="center">Over 1,000</td><td align="center">As established by the utility owner/operator</td></tr> </tbody> </table>	Nominal System Voltage (kilovolts)	Minimum Rated Clearance (feet)	0-50	10	51-200	15	201-300	20	301-500	25	501-750	35	751-1,000	45	Over 1,000	As established by the utility owner/operator	<b>L</b>
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Over 1,000	As established by the utility owner/operator																		

Job Steps	Hazards	Controls	RAC
Site preparatory communication phase and inspection (continued)	<p>Overhead utilities: arc flash and electrocution</p> <p>Underground utilities: electrocution, arc flash, fire, property damage (continued)</p>	<p>A signed Civil Engineer Work Clearance Request (or equivalent dig permit) must be present at the drilling site prior to starting intrusive work. A completed state one-call ticket must be present at the drilling site prior to starting intrusive work for locations outside the installation boundary. Use subcontractor utility locator and/or ground-penetrating radar (GPR) if there is uncertainty regarding the presence or location of high-hazard (gas, high voltage) or high-value utilities. Have high-hazard utilities turned off and locked out if possible.</p> <p>Walk the excavation area to visually verify that the identified utility locations are consistent with visible clues like power poles, depressions over old trenches, etc.</p> <p>Expose (daylight) high-hazard or high-value utilities that are within the excavation footprint or within 5 feet of the edge of planned excavation, using low-impact techniques such as shovel or hand auger. Expose such utilities, using low-impact techniques, at least every five feet to confirm location and depth. Do not use drilling equipment within 6 inches of high-hazard utilities.</p>	L
<p>Bore hole setup</p> <p>Determine location for setup/staging equipment</p>	<p>Traffic: Struck by hazards</p> <p>Driving over soft ground</p> <p>Uneven terrain</p> <p>Slip, trip, fall, flying debris</p>	<p>Position bore drill rig and support vehicles to shield work zone.</p> <p>Place barricades for work site protection, if necessary (i.e., traffic cones, caution tape, vehicle placement).</p> <p>Wear high-visibility vest.</p> <p>Do not assume equipment and vehicle operators have seen you unless operator has made eye contact with you and signaled to you.</p> <p>Use a spotter standing to side of rig (not behind) when backing drill rig.</p> <p>Confirm proper operation of back-up alarm.</p> <p>Choose location with level and firm soils.</p> <p>Use jacks and proper blocking to level rig. Choose level, open areas to drill. If client requires plastic sheeting under the rig, keep it away from the mechanical means of the rig that contact the ground (i.e., tracks, wheels, jacks).</p> <p>Keep work area picked up and as clean as feasible and free of tripping and fall hazards. Apply traction aids, such as sand, gravels, and straw.</p> <p>Wear safety glasses when near rig or where there is a potential for flying debris.</p> <p>Wear slip-resistant footwear.</p> <p>Maintain proper illumination in work areas.</p>	L

Job Steps	Hazards	Controls	RAC
Drilling	Rolling spreading or sliding of tools and supplies, Rotating machinery-caught by Fire Hand injuries	<p><b><u>Actions to be taken by drill crew:</u></b></p> <p>Conduct/document weekly drilling inspection in a logbook or checklist.</p> <p>Maintain adequate clearance for the movement of vehicles and operation of drilling equipment.</p> <p>Use spotters when vision is impaired.</p> <p>Determine safe tool placement to prevent struck by injuries.</p> <p>Inspect all drilling equipment in presence of Collateral Duty Safety Officer (CDSO).</p> <p>Verify (lead driller) that all safety interlock switches on the drilling equipment operate correctly.</p> <p>Wear leather gloves when handling materials with potential for sharp edges, splinters, burrs, rough surfaces, etc.</p> <p>Be aware of and avoid pinch point hazards.</p> <p>Conduct repairs that require HOT WORK under a HOT WORK PERMIT. Inform SSHO, provide fire watch and suitable fire extinguisher. Use screens to control sparks and UV (welding flash burns to eyes) exposure, as necessary.</p> <p>Advance by hand digging, probing, post hole digging, and/or air knifed to 5 feet below ground surface if markings are unclear, or utilities known to be present are not marked.</p> <p>Contact installation if an underground facility is damaged, dislocated, or disturbed.</p>	L
Connecting drill tools to drive head or other tools	Pinch points between rig and tooling Moving machinery- Struck by or caught between	<p>Keep hands clear of joints when connecting drill tools. Wear PVC gloves when connecting tools. If joining tools requires operation of winch or feed controls, have two workers present: one to operate controls and one to align tools. One person should not operate controls and join tools simultaneously.</p> <p>Be aware of pinch-point hazards and work in a manner to prevent injuries.</p> <p>Keep hands out of areas that may present a pinching hazard and personnel will not position themselves between equipment.</p> <p>Do Not wear loose coveralls, clothing, or jewelry.</p> <p>Confirm that the operator verbally alerts employees and visually ensures employees are clear from dangerous parts of equipment prior to starting or engaging equipment.</p>	L
Advancing percussion tools (pulling casing, driving casing, direct push hammering)	Struck by broken drill tooling from drill tooling improperly lined up	<p>Maintain percussion force in-line with hammer and tool string (minimize bending of tool string or driving at an angle). If conditions become difficult, use stop work authority and re-evaluate.</p> <p>Maintain a safe distance from operations.</p>	L

Job Steps	Hazards	Controls	RAC
Down-hole tool removal	Struck by cable from cable recoil from strained winch	Use rod clamp, vice or slide ring to support loads. Minimize time that objects are suspended above ground or secure supporting surface. Minimize slippage by using proper tools for material being lifted. Lift straight up using safety hook or hoisting plug whenever possible. Remove drill tools in 6-foot sections, or less. Stay clear of strained winch cables or drive shafts. Never place body between pulling force and load.	L
Wrap up	Take home toxics	Decontaminate with soap and water or wipes. Remove all contaminated clothing and materials and leave on-site. Use plastic as a barrier for soil, truck bed or foot well contact.	L
General site work	General site hazards: Insect bites and stings. Contact dermatitis from poisonous and irritating plants (poison ivy, poison oak, and poison sumac). Vehicle traffic Severe weather Heat stress Cold stress Noise. Lifting Slips, trips, falls UV hazards, etc.	Refer to General Site Activities AHA.	L

Equipment	Training	Inspection
<p>PPE Level D:</p> <ul style="list-style-type: none"> <li>• Hard hat (if there are overhead hazards)</li> <li>• Safety glasses</li> <li>• Safety-toed boots</li> <li>• Work gloves/chemical resistant gloves</li> <li>• ANSI Class 2 reflective warning vests</li> <li>• Hearing protection</li> </ul> <p>Other Equipment:</p> <ul style="list-style-type: none"> <li>• Generator</li> <li>• Fire extinguishers</li> <li>• Emergency eyewash</li> <li>• First aid kit</li> <li>• Insect repellent–DEET</li> <li>• Hand tools</li> <li>• Spill containment supplies, if needed</li> <li>• First aid supplies</li> <li>• Containers as needed</li> <li>• Tarps</li> <li>• GFCI</li> <li>• Heavy duty extension cords</li> <li>• Drinking water</li> <li>• Smart phone apps (temperature stress, noise, weather)</li> </ul>	<p>Competent Person (CP) / Qualified Person (QP):</p> <p>CP/CDSO <u>TBD</u>  QP/First Aid and CPR <u>TBD</u>  QP/First Aid and CPR <u>TBD</u></p> <p>Training Requirements (as determined by the SSHO):</p> <ul style="list-style-type: none"> <li>• HAZWOPER 40 hour/Annual refresher</li> <li>• Site safety orientation</li> <li>• Tailgate meetings</li> <li>• Emergency procedures</li> <li>• Hazard communication</li> <li>• Hearing conservation</li> <li>• Applicable AHAs</li> <li>• Fire extinguisher use</li> <li>• Biological hazard identification and control</li> <li>• Severe weather shelter location</li> <li>• Lightning safety procedures</li> <li>• Temperature stress prevention, controls, treatment</li> </ul>	<p>Drilling Equipment Safety Inspection Checklist: to be completed daily by the drilling contractor.</p> <p>Daily inspection (CDSO) <u>TBD</u>  Housekeeping (daily)</p> <ul style="list-style-type: none"> <li>• Fire extinguisher (monthly)</li> <li>• Vehicle inspection (daily)</li> <li>• Eye wash (weekly)</li> <li>• Equipment and tools inspection (daily and before use)</li> <li>• Survey areas for poisonous plants, insects, and animals (each work area)</li> <li>• Check body for ticks (each evening during tick season)</li> </ul> <p>Identify closest usable severe weather shelter (ex: tornado shelter) that is available (each work area)</p>

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**ACTIVITY HAZARD ANALYSIS (AHA)**

<b>Activity/Work Task:</b> Drilling - Soil Sample Processing <b>Project Name:</b> Former Seneca Army Depot (SEDA) - RI at 4 Known PFAS Sites and SI at 34 Suspected PFAS Sites OU-1 <b>Project Location:</b> Romulus, NY <b>Contract Number:</b> W912DY20D0017 <b>Task Order Number:</b> W912DY21F0310 <b>Baseline AHA Prepared By:</b> Richard Totino, Project Manager <b>Reviewed By:</b> Edie Scala-Hampson, CIH, CHMM <b>Date Prepared:</b> 06 January 2023 <b>Task Start Date:</b> 1 March 2023 <b>Task Duration:</b> 6 Months <b>Field Notes, Comments, etc.:</b>	<b>Overall Risk Assessment Code (RAC) (Use highest code)</b>				<b>L</b>	
	<b>Risk Assessment Code (RAC) Matrix</b>					
	<b>Severity</b>	<b>Probability</b>				
		Frequent	Likely	Occasional	Seldom	Unlikely
	Catastrophic	<b>E</b>	<b>E</b>	<b>H</b>	<b>H</b>	<b>M</b>
	Critical	<b>E</b>	<b>H</b>	<b>H</b>	<b>M</b>	<b>L</b>
	Marginal	<b>H</b>	<b>M</b>	<b>M</b>	<b>L</b>	<b>L</b>
	Negligible	<b>M</b>	<b>L</b>	<b>L</b>	<b>L</b>	<b>L</b>
	Step 1: Review each "Hazard" with identified safety "Controls" and determine RAC (See above)					
	"Probability" is the likelihood to cause an incident, near miss, or accident and identified as: Frequent, Likely, Occasional, Seldom, or Unlikely.				<b>RAC Chart</b>	
"Severity" is the outcome/degree if an incident, near miss, or accident did occur and identified as: Catastrophic, Critical, Marginal, or Negligible				<b>E = Extremely High Risk</b>		
				<b>H = High Risk</b>		
Step 2: Identify the RAC (Probability/Severity) as E, H, M, or L for each "Hazard" on AHA. Annotate the overall highest RAC at the top of AHA.				<b>M = Moderate Risk</b>		
				<b>L = Low Risk</b>		

Job Steps	Hazards	Controls	RAC
Determine location for setup/staging equipment	Traffic-Struck by hazards	Select location away from traffic. Place barricades for work site protection, if necessary. Wear high-visibility vest.	<b>L</b>
	Driving over soft ground Uneven terrain	Choose location with level and firm soils.	<b>L</b>
Accept pre-cut tube from driller	Slip, trip, and fall hazards	Wear slip-resistant footwear. Keep work area picked up and as clean as feasible and free of tripping and fall hazards.	<b>L</b>
	Flying debris	Wear safety glasses when near rig or where there is a potential for flying debris. Ensure eyewash is available.	<b>L</b>
Accept pre-cut tube from driller	Strains, sprains, awkward bending/lifts, and ergonomic hazards	Lift with straight back and legs and avoid twisting. Ensure walking pathway is clear. Do not lift greater than 50 pounds. Use mechanical assistance or two-person lift whenever possible. Limit repetitive awkward motions.	<b>L</b>
	Noise	Wear hearing protection if noise levels from neighboring equipment exceeds 85 dBA (if you cannot be heard speaking in a normal voice at arms distance).	<b>L</b>

Job Steps	Hazards	Controls	RAC
	Contact with drilling equipment-Struck by	Maintain eye contact with driller when entering zone of operation. Do not stand too close to rig, honor exclusion zone. Use qualified drillers to operate drilling equipment. Conduct real-time monitoring (PID) when drillers are aware of your presence. Communicate results of monitoring.	L
Measure with PID for VOC	Inhalation of contaminants	Follow personal protective equipment (PPE) dictates of Site Safety and Health Plan (SSHP) based on airborne measurements and action levels.	L
Cut out sample sections	Inhalation and skin contact hazards	Wear chemical resistant gloves based on the identified chemicals. Boot covers and splash suit protection if necessary. Follow respirator action level dictates of SSHP.	L
Put sample in preserved jar	Inhalation and skin contact with preservatives: NaOH, HNO <sub>3</sub> , HCl	Use in well-ventilated area. Wear appropriate PPE (gloves, safety glasses).	L
	Spills	Use absorbents and containers for spills.	L
Log/Label and put sample in cooler	Cut hazards	Set-up stable work area for labeling samples, logging and doing paperwork.	L
Observation of drillers: DPT and sonic	Exposure to site contaminants	Instruct drillers of contaminants on site.	L
Observation of drillers: DPT and sonic	Hazards associated with drilling: Electrical such as overhead or underground utilities, Rolling spreading or sliding of tools and supplies, Rotating machinery-caught by Fire	<b>Actions to be taken by drillers:</b> Conduct/document weekly drilling inspection in a logbook or checklist. Require dig permit (utility clearance) before invasive work begins. Mark/locate underground utilities. No drilling within 5 feet of marked underground utilities or within a minimum of 20 feet of overhead high-voltage lines. Maintain adequate clearance for the movement of vehicles and operation of drilling equipment. Use spotters when vision is impaired. Determine safe tool placement to prevent struck by injuries. Inspect all drilling equipment in presence of Site Safety Officer or Collateral Duty Safety Officer (SSO/CDSO). Verify (lead driller) that all safety interlock switches on the drilling equipment operate correctly. Conduct repairs that require HOT WORK under a HOT WORK PERMIT. Inform CDSO, provide fire watch and suitable fire extinguisher. Use screens to control sparks and UV (welding flash burns to eyes) exposure, as necessary.	L



Job Steps	Hazards	Controls	RAC
Wrap up	Take home toxics	Decontaminate with soap and water or wipes. Remove all contaminated clothing and materials and leave on site. Use plastic as a barrier for soil, truck bed or foot well contact.	L
General site work	General site hazards: Insect bites and stings. Contact dermatitis from poisonous and irritating plants (poison ivy, poison oak, and poison sumac) Vehicle traffic Severe weather Heat stress Cold stress Noise Lifting Slips, trips, falls UV hazards, etc.	Refer to General Site Work Hazards AHA.	L

Job Steps	Hazards	Controls	RAC
<b><i>Add Steps, Hazards, and Actions to Eliminate or Minimize Hazards based on conditions encountered in the field.</i></b>			

Equipment	Training	Inspection
<p><u>Personal Protective Equipment:</u></p> <p>Level D:  Hard Hat  Safety Glasses  Safety-Toed Boots  Work Gloves/ Chemical resistant gloves  ANSI Class 2 reflective warning vests</p> <p><u>Other Equipment:</u></p> <p>Generator  Fire Extinguishers  Emergency Eyewash  First Aid Kit  Insect repellent- DEET  Hand tools  Spill containment supplies  First aid supplies  Containers as needed  Tarps  GFCI  Heavy duty ext. cords  Drinking water  Weather radio and/or smart phone apps for temperature and noise  Heat stress monitoring  Windsock  Sample bottles  Preservatives  Cooler  Hand tools  PPE  Sample bottles and preservatives  PID</p>	<p>Competent Person (CP) / Qualified Person (QP):</p> <p>CP/CDSO <u>TBD</u>  QP/First Aid and CPR <u>TBD</u>  QP/First Aid and CPR <u>TBD</u></p> <p>Training Requirements (as determined by the SSO):</p> <p>HAZWOPER 40 hour  Site safety orientation  Tailgate meetings  Emergency procedures  Hazard communication  Hearing conservation  MEC awareness  Applicable AHAs  Fire extinguisher use  Biological hazard identification and control  Tornado shelter location  Lightning safety procedures  Heat stress prevention and heat stroke treatment  Cold stress prevention</p>	<p>Daily site safety inspection (CDSO) <u>TBD</u></p> <p>Housekeeping (daily)  Fire extinguisher (monthly)  Vehicle inspection (daily)  Eye Wash  Equipment and tools inspection (daily and before use)  Survey areas for poisonous plants, insects, and animals(each work area)  Check body for ticks (each evening during tick season)</p> <p>Identify closest usable tornado shelter that is available (each work area)</p> <p>Pre/post maintenance/calibration per manufacturer's rec.</p> <p>Visual prior to use</p>

**ACTIVITY HAZARD ANALYSIS (AHA)**

<b>Activity/Work Task:</b> Direct Push Drilling – Groundwater Screening Sampling <b>Project Name:</b> Former Seneca Army Depot (SEDA) - RI at 4 Known PFAS Sites and SI at 34 Suspected PFAS Sites OU-1 <b>Project Location:</b> Romulus, NY <b>Contract Number:</b> W912DY20D0017 <b>Task Order Number:</b> W912DY21F0310 <b>Baseline AHA Prepared By:</b> Richard Totino, Project Manager <b>Reviewed By:</b> Edie Scala-Hampson, CIH, CHMM <b>Date Prepared:</b> 06 January 2023 <b>Task Start Date:</b> 1 March 2023 <b>Task Duration:</b> 6 Months <b>Field Notes, Comments, etc.:</b>	<b>Overall Risk Assessment Code (RAC) (Use highest code)</b>				<b>L</b>	
	<b>Risk Assessment Code (RAC)</b>					
	<b>Severity</b>	<b>Probability</b>				
		Frequent	Likely	Occasional	Seldom	Unlikely
	Catastrophic	<b>E</b>	<b>E</b>	<b>H</b>	<b>H</b>	<b>M</b>
	Critical	<b>E</b>	<b>H</b>	<b>H</b>	<b>M</b>	<b>L</b>
	Marginal	<b>H</b>	<b>M</b>	<b>M</b>	<b>L</b>	<b>L</b>
	Negligible	<b>M</b>	<b>L</b>	<b>L</b>	<b>L</b>	<b>L</b>
	Step 1: Review each “Hazard” with identified safety “Controls” and determine RAC (See above)					
	“Probability” the likelihood to cause an incident, near miss, or accident and identified as: Frequent, Likely, Occasional, Seldom, or Unlikely.				<b>RAC Chart</b>	
“Severity” the outcome/degree if an incident, near miss, or accident did occur and identified as: Catastrophic, Critical, Marginal, or Negligible				<b>E = Extremely High Risk</b>		
				<b>H = High Risk</b>		
				<b>M = Moderate Risk</b>		
				<b>L = Low Risk</b>		
Step 2: Identify the RAC (Probability/Severity) as E, H, M, or L for each “Hazard” on AHA. Annotate the overall highest RAC at the top of AHA.						

<b>Job Steps</b>	<b>Hazards</b>	<b>Controls</b>	<b>RAC</b>
Borehole setup	Struck by vehicle traffic	Position drill rig and support vehicles to shield work zone.  Wear highly visible clothing, set up work zone suitable to site conditions (i.e., traffic cones, caution tape, vehicle placement). Do not assume equipment and vehicle operators have seen you unless operator has made eye contact with you and signaled to you.	<b>L</b>
	Vehicle damage	Use a spotter standing to side of rig (not behind) when backing drill rig. Confirm proper operation of back-up alarm.	<b>L</b>
	Uneven terrain	Use jacks and proper blocking to level rig. Choose level, open areas to drill. If client requires plastic sheeting under the rig, keep it away from the mechanical means of the rig that contact the ground (i.e., tracks, wheels, jacks).	<b>L</b>

Job Steps	Hazards	Controls	RAC
Borehole setup	Overhead Utilities	<p>Maintain distance of at least 20 feet from overhead power lines. Avoid borehole locations near overhead lines. Do not move drill rig with tower up.</p> <p>Complete a Site Layout Plan prior to mobilizing the equipment. The plan shall identify all overhead and underground hazards.</p> <p>Survey the travel route for overhead and terrain hazards before equipment is moved. The minimum distances from electrical lines must be observed.</p> <p>Maintain clearance distances stated above when operating beneath a power line that has not been verified as de-energized and grounded. Power lines shall be assumed to be energized unless verified to be de-energized and visibly grounded. Erect a high-visibility elevated warning line or barricades at the minimum approach distance.</p> <p>Train each work crew member in the electrocution hazards and emergency procedures associated with energized power lines.</p>	L
	Underground Utilities	<p>Follow the procedure for intrusive activities in the Site Safety and Health Plan.</p> <p>Complete the Pre-Boring/Checklist for each boring.</p> <p>A signed Civil Engineer Work Clearance Request (or equivalent dig permit) must be present at the drilling site prior to starting intrusive work. A completed state one-call ticket must be present at the drilling site prior to starting intrusive work for locations outside the installation boundary.</p> <p>Document utility mark-out using the Utility Mark-out Documentation form. No boring work is to be performed until all utility mark-outs are verified.</p> <p>Ensure that buried utilities are daylighted and visible when drilling must be conducted within 5 feet of the utility.</p> <p>DO NOT proceed with intrusive activities until the Construction Manager/Field Superintendent and CDSO have issued an Intrusive Activities Permit.</p> <p>Advanced by hand digging, probing, post hole digging, and/or air knifed to 5 feet below ground surface if markings are unclear, or utilities known to be present are not marked.</p> <p>Contact installation if an underground facility is damaged, dislocated, or disturbed.</p>	

Job Steps	Hazards	Controls	RAC
Borehole setup	Slips, trips, and falls	<p>Understand the hazard of slips, trips, and falls – consider the consequences.</p> <p>Do not jump from equipment or elevated surfaces.</p> <p>Clean up work areas throughout the day and at the end of each workday. Use three-point contact rule for entering/exiting vehicles, trucks, and equipment.</p> <p>Use handrails and other stationary objects (door frames, doorknobs, steering wheels, walls, etc.) to increase stability.</p> <p>Use extra caution when walking on wet, muddy, frosty, icy, or snow-covered surfaces.</p> <p>Increase your awareness, keep alert, stay focused, and know your environment.</p> <p>Provide warning signs or cordon off areas where necessary. Consider postponing work as necessary and feasible.</p> <p>Avoid slippery areas when possible.</p> <p>Stay away from slopes, hills, and grades. Be cautious when using stairs.</p> <p>Remove snow and ice when possible (shoveling, chipping, and salt application).</p> <p>Apply traction aids, such as sand, gravels, and straw. Choose footwear wisely.</p> <p>Slow down - take smaller steps.</p> <p>Lower your center of gravity when necessary.</p> <p>Maintain proper illumination in work areas.</p> <p>Provide fall protection when personnel are exposed to fall hazards greater than 6 feet.</p>	L
	Strains and sprains from improper lifting of loads	<p>Lift with legs, straight back, do not twist while lifting heavy loads.</p> <p>Use multiple employees or the use of mechanical lifting devices for lifting objects over the 50-pound limit.</p>	
Connecting drill tools to drive head or other tools	Pinch points between rig and tooling	<p>Keep hands clear of joints when connecting drill tools. Wear PVC gloves when connecting tools. If joining tools requires operation of winch or feed controls, have two workers present: one to operate controls and one to align tools. One person should not operate controls and join tools simultaneously.</p> <p>Be aware of pinch-point hazards and work in a manner to prevent injuries.</p> <p>Keep hands out of areas that may present a pinching hazard and personnel shall not position themselves between equipment.</p>	L

Job Steps	Hazards	Controls	RAC
Advancing percussion tools (driving sampler, driving casing, direct push hammering)	Struck by broken drill tooling from drill tooling improperly lined up	Maintain percussion force in-line with hammer and tool string (minimize bending of tool string or driving at an angle). If conditions become difficult, use SWA (stop work authority) and re-evaluate.  Maintain a safe distance from operations.	L
	Noise	Wear ANSI NRR 30 or higher hearing protection. Direct push activities exceed 90 dBa while advancing tools.	L
	Cuts from cutting plastic tubing	Prevent lacerations by cutting away from hands and body. Watch the line of fire with the cutter. Wear cut-resistant gloves.	L
Collecting groundwater screening samples using Waterloo <sup>APS</sup> system	Trip over tools and spoils	Maintain your work area. Keep walkways clear and pick up tools. Drill spoils should be kept out of walkways and traffic areas.	L
	Splash from contaminated groundwater	Slowly remove groundwater and tooling to help eliminate splash and wear all PPE.	L
Down-hole tool removal	Struck by cable from cable recoil from strained winch	Use rod clamp, vice or slide ring to support loads.  Minimize time that objects are suspended above ground or secure supporting surface.  Minimize slippage by using proper tools for material being lifted.  Lift straight up using safety hook or hoisting plug whenever possible.  Remove drill tools in 6-foot sections, or less.  Stay clear of strained winch cables or drive shafts. Never place body between pulling force and load.	L
General site work	General site hazards: Insect bites and stings  Contact dermatitis from poisonous and irritating plants (poison ivy, poison oak, and poison sumac)  Severe weather Heat stress Cold stress Noise Lifting UV hazards, etc.	See General Site Work AHA.	L

Equipment to be Used	Training Requirements/Competent or Qualified Personnel Name(s)	Inspection Requirements
<p><u>Personal Protective Equipment</u></p> <p>Hard Hat            Safety Glasses with side shields            Safety-Toed Boots            Work Gloves            Class 2 high visibility vests            Hearing protection, as necessary            Nitrile gloves to prevent contact with contaminated water</p> <p><u>Other Equipment:</u></p> <p>PID            Multi-gas meter            Fire Extinguishers            First Aid Kit            Eye wash            GFCI            Heavy duty extension cords (S, ST, SO, STO, SJ, SJO, SJT, SJOT)            Drinking water            Insect repellent with DEET (Deep Woods Off™ or equivalent)            Repel Permanone™            Smart phone apps for weather, noise, temperature stress</p>	<p>Competent Person (CP) / Qualified Person (QP):</p> <p>CP/CDSO <u>TBD</u>            QP/First Aid and CPR <u>TBD</u>            QP/First Aid and CPR <u>TBD</u></p> <p>Training Requirements (as determined by the CDSO):</p> <p>HAZWOPER 40-Hour            Site safety orientation            Emergency procedures            Hazard communication            Hearing conservation            Applicable AHAs            Qualified equipment operators            Lifting/back safety            Fire extinguisher use            Biological hazard identification and control            Tornado shelter location            Lightning safety procedures            Heat stress prevention and heat stroke treatment            Cold stress prevention</p>	<p>Daily site safety inspection (CDSO) <u>TBD</u></p> <p>Mechanized equipment (U.S. Army Corps of Engineers form prior to use)            Mechanized equipment (daily)            Overhead utilities (prior to operating equipment in area)            Locate underground utilities (prior to intrusive activities)            Drilling Equipment Operations Inspection Checklist - Pre-Mobilization and Mobilization: to be completed by the drilling contractor prior to/upon mobilization to the project site.            Drilling Equipment Operations Inspection Checklist - Weekly and Location Specific: to be completed by the drilling contractor a minimum of once per week and/or each time the drill rig is moved to a new boring location.            Drilling Equipment Operations Inspection Checklist – Daily: to be completed daily by the drilling contractor.            Rigging (before each use)            Housekeeping (daily)            Fire extinguisher (monthly)            Vehicle inspection (daily)            Equipment and tools inspection (daily and before use)            Survey areas for poisonous plants, insects, and animals(each work area)            Check body for ticks (each evening during tick season)            Identify closest usable tornado shelter that is available (each work area)</p>

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ACTIVITY HAZARD ANALYSIS (AHA)						
<b>Activity/Work Task:</b> Well Installation  <b>Project Name:</b> Former Seneca Army Depot (SEDA) - RI at 4 Known PFAS Sites and SI at 34 Suspected PFAS Sites OU-1  <b>Project Location:</b> Romulus, NY  <b>Contract Number:</b> W912DY20D0017  <b>Task Order Number:</b> W912DY21F0310  <b>Baseline AHA Prepared By:</b> Richard Totino, Project Manager  <b>Reviewed By:</b> Edie Scala-Hampson, CIH, CHMM  <b>Date Prepared:</b> 06 January 2023  <b>Task Start Date:</b> 1 March 2023	<b>Overall Risk Assessment Code (RAC) (Use highest code)</b>				<b>L</b>	
	<b>Risk Assessment Code (RAC) Matrix</b>					
	<b>Severity</b>	<b>Probability</b>				
		Frequent	Likely	Occasional	Seldom	Unlikely
	Catastrophic	<b>E</b>	<b>E</b>	<b>H</b>	<b>H</b>	<b>M</b>
	Critical	<b>E</b>	<b>H</b>	<b>H</b>	<b>M</b>	<b>L</b>
	Marginal	<b>H</b>	<b>M</b>	<b>M</b>	<b>L</b>	<b>L</b>
	Negligible	<b>M</b>	<b>L</b>	<b>L</b>	<b>L</b>	<b>L</b>
	Step 1: Review each "Hazard" with identified safety "Controls" and determine RAC (See above)					
	"Probability" is the likelihood to cause an incident, near miss, or accident and identified as: Frequent, Likely, Occasional, Seldom, or Unlikely.				<b>RAC Chart</b>	
"Severity" is the outcome/degree if an incident, near miss, or accident did occur and identified as: Catastrophic, Critical, Marginal, or Negligible				<b>E = Extremely High Risk</b>		
Step 2: Identify the RAC (Probability/Severity) as E, H, M, or L for each "Hazard" on AHA. Annotate the overall highest RAC at the top of AHA.				<b>H = High Risk</b>		
				<b>M = Moderate Risk</b>		
				<b>L = Low Risk</b>		

Job Steps	Hazards	Controls	RAC
Discuss the task, hazards, and hazard controls with HGL staff and subcontractors	No hazards directly related to this step. This step is intended to provide task-specific training.	Conduct this discussion in a safe area away from traffic or other hazards. Remind HGL personnel and subcontractors that they are to comply with this AHA and that it can be changed if needed. Subcontractors must also have their own safety programs and procedures specific to their tasks and equipment and are responsible to ensure the safety of their personnel.	<b>L</b>
Identify overhead drill/bore	Overhead utilities	<p>Complete a Site Layout Plan prior to mobilizing the equipment. The plan shall identify all overhead and underground hazards.</p> <p>Survey the travel route for overhead or terrain hazards before equipment is moved. The minimum distances from electrical lines must be observed (Accident Prevention Plan/Site Safety and Health Plan [SSHP]).</p> <p>Assume power lines are energized unless verified to be de-energized and visibly grounded. Operation beneath a power line that has not been verified as de-energized and grounded must maintain a 20-foot minimum clearance distance. A high-visibility elevated warning line or barricade shall be erected at the minimum approach distance.</p> <p>Confirm that each work crew member is aware of electrocution hazards and emergency procedures associated with energized power lines.</p>	<b>L</b>

Job Steps	Hazards	Controls	RAC
Identify underground utilities	Underground utilities	<p>Follow the procedure for intrusive activities in the SSHP.</p> <p>Complete the Pre-Boring/Checklist for each boring.</p> <p>Utilities shall be located and marked prior to commencing intrusive activities. Retain a copy of mark-out ticket for documentation purposes and quality control purposes.</p> <p>Use the Utility Mark-out Documentation form. No boring work is to be performed until all utility mark-outs are verified.</p> <p>Confirm that the Construction Manager/Field Superintendent and the Site Safety and Health Officer (SSHO) have issued an Intrusive Activities Permit. Intrusive activities may not proceed until the permit has been issued.</p> <p>Advance by hand digging, probing, post hole digging, and/or air knife to 5 feet below ground surface if markings are unclear, or utilities known to be present are not marked.</p> <p>Immediately contact Digger's Hotline if an underground facility is damaged, dislocated, or disturbed.</p>	L
Set up and inspect specialty equipment Operate equipment Drill/bore holes Install well casings	Cuts, hand injuries	<p>Inspect items to be handled for sharp edges, splinters, burrs, rough surfaces, etc. prior to being handled.</p> <p>Wear leather gloves when handling materials with sharp edges, splinters, burrs, rough surfaces, etc.</p> <p>Avoid pinch-point hazards.</p>	L
Mix and/or place concrete or grout Place filter pack, seals, and grout	Heavy lifting, strains, and sprains	<p>Lift with legs and a straight back.</p> <p>Do not lift any object that weighs over 50 pounds. Multiple employees or the use of mechanical lifting devices are required for lifting objects over the 50-pound limit.</p> <p>Do not lift and twist at the same time. Move your feet.</p>	L
Provide surface completion Develop well Place bentonite.	Concrete or grout dust (respirable silica)	<p>Wear safety glasses with side shields. Keep an eyewash nearby to clean out caustic dust if exposed.</p> <p>Control dust by maintaining equipment operation rates. Control dust by applying water. Stay out of dust and work from upwind when possible.</p>	L
	Struck by and against: <ul style="list-style-type: none"> <li>• Vehicles</li> <li>• Equipment</li> <li>• Flying debris/projectiles</li> <li>• Splashes</li> </ul>	<p>Wear personal protective equipment [PPE] with high-visibility vests when walking or working near moving equipment or vehicles.</p> <p>Stay out of swing radius of the equipment.</p> <p>Maintain a safe distance from operations.</p> <p>Do not assume equipment and vehicle operators have seen you unless operator has made eye contact with you and signaled to you.</p> <p>Post warning signs and signalers as needed</p>	L

Job Steps	Hazards	Controls	RAC	
Set up and inspect specialty equipment Operate equipment Drill/bore holes Install well casings Mix and/or place concrete or grout Place filter pack, seals, and grout Provide surface completion Develop well Place bentonite.	Injury from use of tools	Select the proper tool – do not improvise. Inspect all power and hand tools before each use (do not use damaged tools). Tools shall be appropriate for the task and maintained in good condition. Check your position, footing, and grip before tool use. Avoid distraction, keep your focus, and concentrate on the job. Maintain a steady pace when using tools and take adequate rest periods. Keep electric cords untangled and out of the way of rotating tools. Use double-insulated power tools when possible. Protect electric tools with ground-fault circuit interrupters (GFCIs).	L	
	Noise	Wear hearing protection when exposed to high noise levels >85dBA. (Rule of thumb: If you cannot be heard speaking in a normal voice at arms distance, wear hearing protection.)		L
	Open borings: Trip and fall	Cover, secure, and flag when work is not in progress.		L
Set up and inspect specialty equipment Operate equipment Drill/bore holes Install well casings Mix and/or place concrete or grout Place filter pack, seals, and grout Provide surface completion Develop well Place bentonite	Use of mechanical equipment	Permit only qualified to operate equipment. Verify. Inspect mechanical equipment daily. Note any deficiencies on the equipment inspection form. Take equipment found to be unsafe out of service. Require equipment operators to wear safety belts and hearing protection (as necessary). Operate all equipment at safe speeds and in a safe manner. Require that ground personnel not position themselves between equipment and stationary objects (stay out of swing radius). Approach equipment after a signal from the operator.	L	
	Slips, trips, and falls	Do not jump from equipment or elevated surfaces. Clean-up work areas throughout the day and at the end of each workday. Use three-point contact rule for entering/exiting vehicles, trucks, and equipment. Use handrails and other stationary objects (door frames, doorknobs, steering wheels, walls, etc.) to increase stability. Use extra caution when walking on wet, muddy, frosty, icy, or snow-covered surfaces. Know your environment. Provide warning signs or cordon off areas where necessary. Consider postponing work as necessary and feasible. Avoid slippery areas when possible. Stay away from slopes, hills, and grades. Be cautious when using stairs. Remove snow and ice when possible (shoveling, chipping, and salt application). Apply traction aids, such as sand, gravels, and straw. Choose footwear wisely. Slow down – take smaller steps. Lower your center of gravity when necessary. Maintain proper illumination in work areas.	L	

Job Steps	Hazards	Controls	RAC
Set up and inspect specialty equipment Operate equipment Drill/bore holes Install well casings Mix and/or place concrete or grout Place filter pack, seals, and grout Provide surface completion Develop well Place bentonite	Electrical	Use GFCIs on all power tools and extension cords. Inspect extension cords, power tools, and lighting equipment before each use. Protect cords from damage and keep out of wet areas. Confirm that the extension cords amp rating exceeds the sum of amp ratings of equipment connected to them. Permit only qualified electricians to work on electrical circuits.	L
	Fire	Keep a A:40-B:C fire extinguisher available when refueling at the project site. Establish smoking areas. Smoke only in designated areas. Only discard cigarette butts in proper receptacles – never discard cigarette butts onto the ground. Smoking shall not be permitted within 50 feet of fueling operations. Use caution with vehicle exhaust systems in grassy areas. Do not run vehicles while parked in grassy areas. Shut off engines before refueling.	L
	Respiratory hazards: Use of operational chemicals and products (for example, bentonite-a silica containing material)	Read and follow Safety Data Sheets for each chemical used. Do not use any chemical that you have not been trained to safely use. Suppress dust with wet methods. Wear proper PPE. Confirm that labels are on all containers. Allow for voluntary use of N95 disposable respirators.	L
	Use of pumps and hoses	Review operator’s manual for recommended operating procedures. Utilize PPE and always wear safety glasses and face shield when disconnecting hoses. Monitor for carbon monoxide from exhaust in areas with limited ventilation. Keep away from hot exhaust and hot surfaces. Get help, as necessary, when lifting pumps and hoses. Maintain control of hose ends when moving hoses to prevent striking self or other workers. Secure hoses with lashing to prevent whipping – do not allow hoses to whip. Identify and avoid pinch points. Secure cam lock fittings with safety clips/ties.	L

Job Steps	Hazards	Controls	RAC
Set up and inspect specialty equipment Operate equipment Drill/bore holes Install well casings Mix and/or place concrete or grout Place filter pack, seals, and grout Provide surface completion Develop well	Use of portable generators	Review operator manual before use. Keep the generator dry and do not use in rain or wet conditions. Dry your hands (if wet) before touching the generator. Use a heavy duty, outdoor-rated extension cord that is rated (in watts or amps) at least equal to the sum of the connected appliance loads (S, ST, SO, STO, SJ, SJO, SJT, SJOT). Check that the entire cord is free of cuts or tears and that the plug has all three prongs, especially a grounding pin. Check operator's manual for generator grounding requirements, if any. Turn it off and let it cool down, before refueling the generator. Gasoline spilled on hot engine parts could ignite. Do not use portable generators in areas with dry grass unless area has been adequately cleared of the grass. Keep a 4-A:60-B:C fire extinguisher available in locations where a generator is being used. Use hearing protection when working near a generator. Lift with legs and straight back when moving portable generators. Do not use indoors or in areas with poor ventilation without performing air monitoring for carbon monoxide.	L
Set up and inspect specialty equipment Operate equipment Drill/bore holes Install well casings Mix and/or place concrete or grout Place filter pack, seals, and grout Provide surface completion Develop well Place bentonite	Contact dermatitis from poisonous and irritating plants (poison ivy, poison oak, and poison sumac) Insect bites and stings Cold stress Heat stress Severe weather	See General Site Work Hazards AHA.	L

Job Steps	Hazards	Controls	RAC
Operate equipment Drill/bore holes Install well casings Provide surface completion	Injury from drill rig use	<p><b><u>Actions to be taken by drillers:</u></b></p> <p>Confirm that a copy of the drill rig manual is available at the job site.</p> <p>Inspect all components of the rig that have a direct bearing on the safety of the operation. The drill crew will inspect the rig at the beginning of each shift and when possible, observed during operation. Rig should not be used if it is not in a safe operating condition.</p> <p>Position the rig in a level fashion with stands and outriggers set.</p> <p>Confirm all guards for moving machinery are in place.</p> <p>Be aware of pinch-point hazards and work in a manner to prevent injuries.</p> <p>Keep hands out of areas that may present a pinching hazard</p> <p>Do not wear loose coveralls, clothing, or jewelry.</p> <p>Confirm that the operator verbally alerts employees and visually verifies employees are clear from dangerous parts of equipment prior to starting or engaging equipment.</p> <p>Be aware of and avoid hot surfaces from heat generated from engine and rope friction (such as cathead).</p> <p>Confirm drilling equipment is equipped with two easily accessible emergency shutdown devices, one for the operator and one for the helper.</p> <p>Confirm that all crewmembers, including geologists, know the location and operation of the kill switches.</p> <p>Confirm augers are equipped with an auger guard or position sensor brake. Drill rods will be neither run nor rotated through rod slipping devices: no more than one foot of drill rod column will be hoisted above the top of the drill mast.</p> <p>Do not make up, tighten, or loosen drill tool joints while the rod column is supported by a rod slipping device.</p> <p>Clean augers or other tools only when rotating/actuating mechanisms are in neutral and stopped. Use long handle shovels to remove cuttings from augers.</p>	L

Job Steps	Hazards	Controls	RAC
Operate equipment Drill/bore holes Install well casings Provide surface completion	Welding, cutting, and grinding or any other operation producing spark or ignition sources (hot work)	Complete a Hot Work permit.  Utilize a welder helmet, tinted cutting goggles, aprons, leathers, and gloves for welding and cutting operations.  Wear a face-shield for all grinding operations.  Remove dry grasses from areas where hot work will be performed. Do not perform hot work when conditions are dry and windy. Combustible materials must be protected from slag, heat, and sparks.	L
		Shut off all torch valves and gas supplies when work is suspended.  Separate oxygen cylinders in storage and fuel gases by a fire resistive wall or by 20 feet.  Post “No Smoking” signs around cylinder storage area.  Confirm that the pressure on the working side of the acetylene regulator should not be greater than 15 psig.  Confirm that all oxygen-fuel gas cutting, or welding is equipped with reverse-flow check valves between torch & hoses.  Inspect the hoses for defects before each use.  Confirm that all pressure gauges and regulators are in proper working order.  Inspect welding equipment daily.  Shut down the electric welding when leads are unattended.  Ground frames of electric welders.  Shield workers and the public from rays, flashes, sparks, molten metal and slag.  Identify all hot surfaces with signs or tags to protect workers from burns.  Provide a fire watch equipped with a 4-A:60-B:C fire extinguisher for at least 30 minutes after hot work has been completed, 60 minutes after hot work when combustible materials are present.	

Job Steps	Hazards	Controls	RAC
Drill/bore holes Install well casings	Contact with contaminated water/chemical hazards	Set up work zones (SSHP). Avoid physical contact with contaminated water/materials. Don additional personal protective equipment when contact with contaminated water/materials is possible/probable. Perform air monitoring when contaminated groundwater has been brought to the surface (SSHP). Maintain personal hygiene and perform decontamination (SSHP). Immediately wash the affected area with soap and water (eyes should be irrigated for 15 minutes with potable water) and report the incident to the SSHO. Decontaminate equipment. Verify emergency eyewash stations have been inspected, cleaned, filled, and in service. Notify all personnel of the emergency eyewash station locations. Notify the SSHO if odors are detected.	<b>L</b>
<b><i>Add Steps, Hazards, and Actions to Eliminate or Minimize Hazards based on conditions encountered in the field.</i></b>			



Equipment	Training	Inspection
<p><u>Personal Protective Equipment</u></p> <p>Hard Hat  Hearing protection  Safety Glasses with side shields  Safety-Toed Boots  Work Gloves  Class 2 high visibility vests Hearing protection, as necessary N95 disposable respirator to prevent crystalline silica exposures  Face-shield – disconnecting hoses Nitrile gloves and Tyvek coveralls to prevent contact with contaminated water Welding and cutting hazards - refer to SSHP.  Fall protection - working at heights &gt; 6’</p> <p><u>Other Equipment:</u> PID  Multi-gas meter  Fire Extinguishers  First Aid Kit  Eye wash  GFCI  Heavy duty extension cords (S, ST, SO, STO, SJ, SJO, SJT, SJOT)  Drinking water  Weather radio and/or smart phone apps for weather, temperature, noise, etc.  Ladders  Excavation perimeter protection  Heavy blanket if needed  Insect repellent with DEET (Deep Woods Off™ or equivalent) Repel Permanone™</p>	<p>Competent Person (CP) / Qualified Person (QP):</p> <p>CP/SSHO _____  _____  QP/First Aid and CPR _____  QP/First Aid and CPR _____  QP/Driller _____  CP/ Rigger _____  CP/ Excavation _____</p> <p>Training Requirements (as determined by the SSHO):</p> <p>HAZWOPER 40-Hour Site safety orientation  Emergency procedures Hazard communication  Hearing conservation MEC awareness Applicable AHAs  Qualified equipment operators Licensed forklift operator Lifting/back safety  Ladder use  Fall protection  Fire extinguisher use  Biological hazard identification and control  Tornado shelter location  Lightning safety procedures  Heat stress prevention and heat stroke treatment  Cold stress prevention</p>	<p>Daily site safety inspection (SSHO) _____  Daily site safety inspection (QCO) _____</p> <p>Mechanized equipment (U.S. Army Corps of Engineers form prior to use)  Mechanized equipment (daily)  Overhead utilities (prior to operating equipment in area) Locate underground utilities (prior to intrusive activities)  Drilling Equipment Operations Inspection Checklist - Pre-Mobilization and Mobilization: to be completed by the drilling contractor prior to/upon mobilization to the project site. Drilling Equipment Operations Inspection Checklist - Weekly and Location Specific: to be completed by the drilling contractor a minimum of once per week and/or each time the drill rig is moved to a new boring location.  Drilling Equipment Operations Inspection Checklist – Daily: to be completed daily by the drilling contractor.  Rigging (before each use) Excavation inspection (daily) Housekeeping (daily)  Ladder (before each use)  Fall protection (before each use) Fire extinguisher (monthly) Vehicle inspection (daily)  Equipment and tools inspection (daily and before use)  Survey areas for poisonous plants, insects, and animals(each work area)  Check body for ticks (each evening during tick season) Identify closest usable tornado shelter that is available (each work area)</p>

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**ACTIVITY HAZARD ANALYSIS**

<b>Activity/Work Task:</b> Groundwater Well Development <b>Project Name:</b> Former Seneca Army Depot (SEDA) - RI at 4 Known PFAS Sites and SI at 34 Suspected PFAS Sites <b>Project Location:</b> Romulus, NY <b>Contract Number:</b> W912DY20D0017 <b>Task Order Number:</b> W912DY21F0310 <b>Baseline AHA Prepared By:</b> Richard Totino, Project Manager <b>Reviewed By:</b> Edie Scala-Hampson, CIH, CHMM <b>Date Prepared:</b> 06 January 2023 <b>Task Start Date:</b> 1 March 2023 <b>Task Duration:</b> 6 Months <b>Field Notes, Comments, etc.:</b>	<b>Overall Risk Assessment Code (RAC) (Use highest code)</b>				<b>L</b>	
	<b>Risk Assessment Code (RAC) Matrix</b>					
	<b>Severity</b>	<b>Probability</b>				
		Frequent	Likely	Occasional	Seldom	Unlikely
	Catastrophic	<b>E</b>	<b>E</b>	<b>H</b>	<b>H</b>	<b>M</b>
	Critical	<b>E</b>	<b>H</b>	<b>H</b>	<b>M</b>	<b>L</b>
	Marginal	<b>H</b>	<b>M</b>	<b>M</b>	<b>L</b>	<b>L</b>
	Negligible	<b>M</b>	<b>L</b>	<b>L</b>	<b>L</b>	<b>L</b>
	Step 1: Review each "Hazard" with identified safety "Controls" and determine RAC (See above)					
	"Probability" is the likelihood to cause an incident, near miss, or accident and identified as: Frequent, Likely, Occasional, Seldom, or Unlikely.				<b>RAC Chart</b>	
"Severity" is the outcome/degree if an incident, near miss, or accident did occur and identified as: Catastrophic, Critical, Marginal, or Negligible				<b>E = Extremely High Risk</b>		
Step 2: Identify the RAC (Probability/Severity) as E, H, M, or L for each "Hazard" on AHA. Annotate the overall highest RAC at the top of AHA.				<b>H = High Risk</b>		
				<b>M = Moderate Risk</b>		
				<b>L = Low Risk</b>		

Job Steps	Hazards	Controls	RAC
Well development	Cut/crush/skin absorption hazards-hand and foot	Wear leather steel-toed/composite-toed boots. Wear appropriate chemical-resistant personal protective equipment (PPE) as defined in the Site Safety and Health Plan (SSHP). Wear thick clothing when there is a potential for lacerations. Wear abrasion-resistant hand protection.	<b>L</b>
	Inhalation and skin contact hazards with chemicals of concern (COC), etc.	Follow PPE dictates of SSHP based on airborne measurements and action levels. Conduct real-time air monitoring as required by SSHP. Obtain or review chemical information on COCs. Wear chemical-resistant gloves based on the identified chemicals. Use boot covers and splash suit protection if necessary. Label all containers as to contents. Follow good hygiene practices: no eating, drinking or smoking until decontaminated and out of exclusion zone. Communicate monitoring results.	<b>L</b>
	Flying debris-eye	Wear safety glasses when there is potential for flying debris or splash hazard. Confirm eyewash is available.	<b>L</b>

Job Steps	Hazards	Controls	RAC
Well development	Strains, sprains, awkward bending/lifts, and ergonomic hazards. Injury from physical exertion.	Avoid twisting/turning while pulling tools, grates, manway covers, etc. Ensure walking pathway is clear. Do not lift greater than 50 pounds. Use mechanical assistance or two-person lift for loads heavier than 50 pounds. Limit repetitive awkward motions. Assure solid footing. Be alert to signs and symptoms of overexertion.	L
	Electric shock	Require a ground fault circuit interrupter (GFCI) for any electrical equipment powered by a generator.	L
	Environmental protection/spills	Place plastic over the area to sampled to keep sampling equipment clean and protect environment. Containerize all purge water. Use absorbents and containers for spills.	L
	Remote location	Determine accessibility to associates, communication needs, first aid and rescue equipment and procedure. Institute buddy system.	L
	Environment and biological hazards <ul style="list-style-type: none"> <li>• Adverse weather</li> <li>• Temperature Stress</li> <li>• UV Hazards</li> <li>• Plants, insects and local wildlife</li> </ul> General site hazards: Noise, lifting, slips, falls, etc.	See General Site Work AHA.	L
	Take home toxics	Decontaminate with soap and water. Remove all contaminated clothing and materials and leave on site. Use plastic as a barrier for soil, truck bed or foot well contact.	L
Measure with photoionization detector (PID) for volatile organic compounds	Inhalation of contaminants	Follow PPE dictates of SSHP based on airborne measurements and action levels. Conduct real-time air monitoring as required by SSHP. Obtain or review chemical information on COCs. Allow any vapors to clear. Follow respirator action level dictates of SSHP. Communicate results.	L

Job Steps	Hazards	Controls	RAC
Generator placement	Crushing injuries	Transport generator properly and keep on level ground while in use.	L
	Fire	Operate generator in a clear area away from vehicles. Transport/store all flammable liquids in UL/FM approved containers. Turn off generators and allow to cool before refueling. Prohibit smoking and all other sources of ignition during refueling operation. Keep fully charged ABC fire extinguisher in vehicle. Inspect weekly. Use in well-ventilated area.	L
	Malfunctioning equipment	Inspect generators and support equipment (pumps, water meters, transducers, and related equipment) daily and document.	L
Decontamination using a steam cleaner/pressure washer	Noise-hearing loss Fire Electrical Splash Hand injury and chemical absorption Environmental damage	See Decontamination of Equipment AHA.	L
Decontamination by hand	Splash	Wear safety goggles during steam cleaning and splash protection as appropriate (aprons, PPE, etc.).	L
	Hand injury and chemical absorption	Wear nitrile gloves during decontamination.	L
	Chemical exposure	Change gloves frequently to avoid skin contact with chemicals. Spray isopropanol (if used) in well-ventilated areas to avoid inhalation. Contain spills and use proper procedures to clean and dispose of chemicals.	L

Job Steps	Hazards	Controls	RAC
<b><i>Add Steps, Hazards, and Actions to Eliminate or Minimize Hazards based on conditions encountered in the field.</i></b>			

Equipment	Training	Inspection
<p><u>Personal Protective Equipment:</u></p> <p>Level D:  Hard Hat  Safety Glasses  Safety-Toed Boots  Work Gloves/Chemical resistant gloves  ANSI Class 2 reflective warning vests</p> <p>Modified Level D: Refer to SSHP.</p> <p><u>Other Equipment:</u></p> <p>Generator  Fire Extinguishers  Emergency Eyewash  First Aid Kit  Insect repellent with DEET  Repel Permanone™  Hand tools  Spill containment supplies  First aid supplies  Containers as needed  Tarps  GFCI  Heavy duty ext. cords  Drinking water  Weather radio  Heat stress monitoring  Wind sock  Sample bottles  Preservatives  Cooler  Hand tools  PPE  Sample bottles and preservatives  PID</p>	<p>Competent Person (CP) / Qualified Person (QP):</p> <p>CP/SSHO _____  Alternate CP/SSHO _____  QP/First Aid and CPR _____  QP/First Aid and CPR _____</p> <p>Training Requirements (as determined by the SSHO):</p> <p>HAZWOPER 40 hour  Site safety orientation  Tailgate meetings  Emergency procedures  Hazard communication  Hearing conservation  MEC awareness  Applicable AHAs  Fire extinguisher use  Biological hazard identification and control  Tornado shelter location  Lightning safety procedures  Heat stress prevention and heat stroke treatment  Cold stress prevention</p>	<p>Daily site safety inspection (SSHO) _____</p> <p>Housekeeping (daily)  Fire extinguisher (monthly)  Vehicle inspection (daily)  Eye Wash  Equipment and tools inspection (daily and before use)  Survey areas for poisonous plants, insects, and animals(each work area)  Check body for ticks (each evening during tick season)</p> <p>Identify closest usable tornado shelter that is available (each work area)</p> <p>Pre/post maintenance/calibration per manufacturer's rec.</p> <p>Visual prior to use</p>

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ACTIVITY HAZARD ANALYSIS (AHA)						
<b>Activity/Work Task:</b> Groundwater Well Sampling <b>Project Name:</b> Former Seneca Army Depot (SEDA) - RI at 4 Known PFAS Sites and SI at Suspected PFAS Sites <b>Project Location:</b> Romulus, NY <b>Contract Number:</b> W912DY20D0017 <b>Task Order Number:</b> W912DY21F0310 <b>Baseline AHA Prepared By:</b> Richard Totino, Project Manager <b>Reviewed By:</b> Edie Scala-Hampson, CIH, CHMM <b>Date Prepared:</b> 06 January 2023 <b>Task Start Date:</b> 1 March 2023 <b>Task Duration:</b> 6 Months <b>Field Notes, Comments, etc.:</b>	<b>Overall Risk Assessment Code (RAC) (Use highest code)</b>				<b>L</b>	
	<b>Risk Assessment Code (RAC) Matrix</b>					
	<b>Severity</b>	<b>Probability</b>				
		Frequent	Likely	Occasional	Seldom	Unlikely
	Catastrophic	<b>E</b>	<b>E</b>	<b>H</b>	<b>H</b>	<b>M</b>
	Critical	<b>E</b>	<b>H</b>	<b>H</b>	<b>M</b>	<b>L</b>
	Marginal	<b>H</b>	<b>M</b>	<b>M</b>	<b>L</b>	<b>L</b>
	Negligible	<b>M</b>	<b>L</b>	<b>L</b>	<b>L</b>	<b>L</b>
	Step 1: Review each "Hazard" with identified safety "Controls" and determine RAC (See above)					
	"Probability" is the likelihood to cause an incident, near miss, or accident and identified as: Frequent, Likely, Occasional, Seldom, or Unlikely.				<b>RAC Chart</b>	
"Severity" is the outcome/degree if an incident, near miss, or accident did occur and identified as: Catastrophic, Critical, Marginal, or Negligible				<b>E = Extremely High Risk</b>		
Step 2: Identify the RAC (Probability/Severity) as E, H, M, or L for each "Hazard" on AHA. Annotate the overall highest RAC at the top of AHA.				<b>H = High Risk</b>		
				<b>M = Moderate Risk</b>		
				<b>L = Low Risk</b>		
Job Steps	Hazards	Controls			RAC	
Sample collection Well purging Well pumping Measuring field parameters (pH, temperature, conductivity, turbidity, dissolved oxygen [DO], etc.)	Cut/crush/skin absorption hazards-Hand and Foot	Wear leather safety toed boots if there is heavy material being handled.  Wear appropriate chemical-resistant personal protective equipment (PPE) as defined in Site Safety and Health Plan (SSHP).  Wear thick clothing when there is a potential for lacerations. Wear abrasion resistant hand protection.			<b>L</b>	
	Inhalation and skin contact hazards with chemicals of concern (COC), etc.	Follow PPE dictates of SSHP based on airborne measurements and action levels. Conduct real-time air monitoring as required by SSHP.  Obtain or review chemical information on COCs and/or review Safety Data Sheets (SDSs_.  Wear chemical-resistant gloves based on the identified chemicals. Use boot covers and splash suit protection, if necessary.  Label all containers as to contents.  Follow good hygiene practices: no eating, drinking, or smoking until decontaminated and out of exclusion zone.  Communicate monitoring results.			<b>L</b>	

Job Steps	Hazards	Controls	RAC
Sample collection, Well purging, Well pumping Measuring field parameters (pH, temperature, conductivity, turbidity, DO, etc.)	Flying debris-eye	Wear safety glasses when there is potential for flying debris or splash hazard. Ensure eyewash is available.	L
	Strains, sprains, awkward bending/lifts, and ergonomic hazards. Injury from physical exertion.	Lift with straight back and with legs. Avoid twisting/turning while pulling tools, grates, manway covers, etc. Ensure walking pathway is clear. Do not lift greater than 50 pounds. Use mechanical assistance or two-person lift for loads heavier than 50 pounds. Limit repetitive awkward motions. Assure solid footing. Be alert to signs and symptoms of overexertion.	L
	Electric shock	Require a ground fault circuit interrupter (GFCI) for any electrical equipment powered by a generator.	L
	Environmental protection/spills	Place plastic over the area to sampled to keep sampling equipment clean and protect environment. Containerize all purge water. Use absorbents and containers for spills.	L
	Remote location	Determine accessibility to associates, communication needs, first aid and rescue equipment and procedure. Institute buddy system.	L
	Environment and biological hazards: Adverse weather Temperature Stress UV Hazards Plants, insects and local wildlife General site hazards: Noise, lifting, slips/falls, traffic, etc.	See General Site Work Hazards AHA.	L
	Take home toxics	Decontaminate with soap and water. Remove all contaminated clothing and materials and leave on site. Use plastic as a barrier for soil, truck bed or foot well contact.	L

Job Steps	Hazards	Controls	RAC
Measure with PID for volatile organic compounds	Inhalation of contaminants	Follow PPE dictates of SSHP based on airborne measurements and action levels. Conduct real-time air monitoring as required by SSHP. Obtain or review chemical information on COCs and/or review SDSs. Open each well for a brief period before work is conducted to allow any vapors to clear. Follow respirator action level dictates of SSHP. Communicate results.	L
Generator placement	Crushing injuries	Transport generator properly and keep on level ground while in use.	L
	Fire	Operate generator in a clear area away from vehicles. Transport/store all flammable liquids in UL/FM approved containers. Turn off generators and allow to cool before refueling. Prohibit smoking and all other sources of ignition during refueling operation. Keep fully charged ABC fire extinguisher in vehicle. Inspect weekly. Use in well-ventilated area.	L
	Malfunctioning equipment	Inspect generators and support equipment (pumps, water meters, transducers, and related equipment) daily and document.	L
Preparation of sample containers	Chemical spills	Never leave open chemicals unattended. Know location of nearest eyewash station. Wear proper PPE (nitrile gloves, safety glasses, acid apron). Keep prep and pack area well ventilated (open window). Know location of SDS, absorbent spill cloth and hazmat spill kit. Make sure all caps are secure.	L
Receiving pre-preserved bottles	Cuts to hands or acid burns from acid leaks- broken glass containers	Use caution when opening package. Wear appropriate PPE (nitrile gloves, safety glasses).	L
Receiving coolers from the field	Heavy lifting/back injury	Size up the load. Bend at knees, ask for assistance. Use hand truck when necessary.	L
	Insects lurking in coolers	Use caution when taking contents out of cooler (insect potential inside coolers).	L

Job Steps	Hazards	Controls	RAC
Preparing coolers for delivery	Tripping over unrolled tape/strapping machine	Make sure strapping machine is properly rolled.	L
	Cuts to hands/tape guns	Use caution, be aware of cutting edge; to the extent possible, break tape by pushing tape gun away from you; ensure hands and legs are not in the path of the tape gun.	L
	Heavy lifting/back injury	Bend at knees, ask for assistance. Use hand truck when necessary.	L
Neutralizing sampling containers	Chemical spills	Wear proper PPE (nitrile gloves, glasses, acid apron, absorbent cloth). Follow proper procedures for neutralizing samples. Provide spill clean-up kit and absorbents.	L
Label, move, and ship samples	Cut hazards	Set up stable work area for labeling samples. Use care when handling glassware. Dispose of glass waste in investigation-derived waste box. Wear appropriate PPE (gloves, safety glasses).	L
	Heavy lifting	Size of lift. Use proper technique. Bend at knees, ask for assistance. Use hand truck when necessary.	L
Decontamination using a steam cleaner/pressure washer	Noise-hearing loss Fire Electrical Splash Hand injury and chemical absorption Environmental damage	See AHA for decontamination of equipment.	L
Decontamination by hand	Splash	Wear safety goggles during steam cleaning and splash protection as appropriate (aprons, PPE, etc.).	L
	Hand injury and chemical absorption	Wear nitrile gloves during decontamination.	L
	Chemical exposure	Change gloves frequently to avoid skin contact with chemicals. Spray isopropanol (if used) in well-ventilated areas to avoid inhalation. Contain spills and use proper procedures to clean and dispose of chemicals.	L

Job Steps	Hazards	Controls	RAC
<i>Add Steps, Hazards, and Actions to Eliminate or Minimize Hazards based on conditions encountered in the field.</i>			

Equipment	Training	Inspection
<p><u>Personal Protective Equipment:</u></p> <p>Level D:  Hard Hat  Safety Glasses  Safety-Toed Boots  Work Gloves/ Chemical resistant gloves  ANSI Class 2 reflective warning vests</p> <p><u>Other Equipment:</u></p> <p>Generator  Fire Extinguishers  Emergency Eyewash  First Aid Kit  Insect repellent- DEET  Hand tools  Spill containment supplies  First aid supplies  Containers as needed  Tarps  GFCI  Heavy duty ext. cords  Drinking water  Weather radio and or smart phone apps for weather, temperature, noise, as needed  Heat stress monitoring  Sample bottles  Preservatives  Cooler  Hand tools  PPE  Sample bottles and preservatives  PID</p>	<p>Competent Person (CP) / Qualified Person (QP):</p> <p>CP/CDSO <u>TBD</u>  QP/First Aid and CPR <u>TBD</u>  QP/First Aid and CPR <u>TBD</u></p> <p>Training Requirements (as determined by the SSHO):</p> <p>HAZWOPER 40 hour  Site safety orientation  Tailgate meetings  Emergency procedures  Hazard communication  Hearing conservation  MEC awareness  Applicable AHAs  Fire extinguisher use  Biological hazard identification and control  Tornado shelter location  Lightning safety procedures  Heat stress prevention and heat stroke treatment  Cold stress prevention</p>	<p>Daily site safety inspection (CDSO) <u>TBD</u></p> <p>Housekeeping (daily)  Eye wash equipment (weekly)  Fire extinguisher (monthly)  Vehicle inspection daily  Equipment and tools inspection daily and before use  Survey areas for poisonous plants, insects, and animals (each work area)  Check body for ticks (each evening during tick season)  Identify closest usable tornado shelter that is available (each work area).  Pre/post maintenance/calibration per manufacturer's rec.  Visual prior to use</p>

**ACTIVITY HAZARD ANALYSIS (AHA)**

<b>Activity/Work Task:</b> Surface Water and Sediment Sampling <b>Project Name:</b> Former Seneca Army Depot (SEDA) - RI at 4 Known PFAS Sites and SI at Suspected PFAS Sites <b>Project Location:</b> Romulus, NY <b>Contract Number:</b> W912DY20D0017 <b>Task Order Number:</b> W912DY21F0310 <b>Baseline AHA Prepared By:</b> Richard Totino, Project Manager <b>Reviewed By:</b> Edie Scala-Hampson, CIH, CHMM <b>Date Prepared:</b> 06 January 2023 <b>Task Start Date:</b> 1 March 2023 <b>Task Duration:</b> 6 Months <b>Field Notes, Comments, etc.:</b>	<b>Overall Risk Assessment Code (RAC) (Use highest code)</b>					<b>L</b>
	<b>Risk Assessment Code (RAC) Matrix</b>					
	<b>Severity</b>	<b>Probability</b>				
		Frequent	Likely	Occasional	Seldom	Unlikely
	Catastrophic	<b>E</b>	<b>E</b>	<b>H</b>	<b>H</b>	<b>M</b>
	Critical	<b>E</b>	<b>H</b>	<b>H</b>	<b>M</b>	<b>L</b>
	Marginal	<b>H</b>	<b>M</b>	<b>M</b>	<b>L</b>	<b>L</b>
	Negligible	<b>M</b>	<b>L</b>	<b>L</b>	<b>L</b>	<b>L</b>
	Step 1: Review each “ <b>Hazard</b> ” with identified safety “ <b>Controls</b> ” and determine RAC (See above)					
	“ <b>Probability</b> ” is the likelihood to cause an incident, near miss, or accident and identified as: Frequent, Likely, Occasional, Seldom, or Unlikely.				<b>RAC Chart</b>	
“ <b>Severity</b> ” is the outcome/degree if an incident, near miss, or accident did occur and identified as: Catastrophic, Critical, Marginal, or Negligible				<b>E = Extremely High Risk</b>		
Step 2: Identify the RAC (Probability/Severity) as E, H, M, or L for each “ <b>Hazard</b> ” on AHA. Annotate the overall highest RAC at the top of AHA.				<b>H = High Risk</b>		
				<b>M = Moderate Risk</b>		
				<b>L = Low Risk</b>		

Job Steps	Hazards	Controls	RAC
Determine location for setup/staging equipment-load and unload	Struck by hazards	Select location away from traffic. Place barricades for work site protection, if necessary. Wear high-visibility vest.	<b>L</b>
	Driving over soft ground Uneven terrain	Choose location with level and firm soils. Add gravel or use mud ramps on soft ground.	<b>L</b>
	Slip, trip, and fall hazards	Determine best access route before transporting equipment. Wear slip- resistant footwear. Look before you step to ensure safe and secure footing. Use personal floatation devices when working within 6 feet of water and /or entering shallow waters. Do not enter waters greater than knee depth. Keep work area picked up and as clean as feasible and free of tripping and fall hazards.	<b>L</b>

Job Steps	Hazards	Controls	RAC
Determine location for setup/staging equipment-load and unload (continued)	Heavy lifting- Strains, sprains, awkward bending/lifts, and ergonomic hazards	Ensure walking pathway is clear. Do not lift greater than 50 pounds. Use mechanical assistance or two-person lift whenever possible. Limit repetitive awkward motions and twisting.	L
	Eye hazards-Flying debris/splash and UV hazards	Wear safety glasses when there is a potential for flying debris or splash hazards. Wear glasses with UV protection. Ensure eyewash is available.	L
Sample collection - HGL will collect surface water and sediment samples from select water bodies at the base. Samples will be retrieved using a stainless-steel scoop (sediment) or glass jar attached to an extension rod (surface water).	Water hazards	Follow water safety rules. Refer to <i>Work Over Water or Adjacent to Water</i> , U.S. Army Corps of Engineers Safety and Health Requirements Manual EM 385-1-1, Sections 19 and 30, and any applicable TVA requirements or U.S. Coast Guard regulations. For more extensive information on working on or around water, refer to the Marine Operations Requirements.	L
	Inhalation and skin contact hazards of chemicals of concern	Conduct real-time monitoring before and during sampling activities if contaminant of concern concentrations in media warrant sampling. Follow personal protective equipment (PPE) dictates of the Site Safety and Health Plan (SSHP) based on airborne measurements and action levels. Wear chemical-resistant gloves based on the identified chemicals. Use boot covers and splash suit protection if necessary. Follow respirator action level dictates of SSHP. Follow good hygiene practices.	L
	Take home toxics	Decontaminate with soap and water. Remove all contaminated clothing and materials and leave on site. Use plastic as a barrier for soil, truck bed or foot well contact. Shower as soon as possible.	L
	Environmental hazards <ul style="list-style-type: none"> <li>• Biologicals - Plants, insects, wildlife</li> <li>• Adverse Weather</li> <li>• Temperature Stresses</li> <li>• UV Hazards</li> </ul>	See General Site Work AHA.	L
Unattended worker	Use the "buddy system." Maintain visual contact with the sampling technician during sampling activities.	L	



Job Steps	Hazards	Controls	RAC
Put sample in preserved jar	Inhalation and skin contact with preservatives such as: methanol and hexane	Use in well-ventilated area. Wear appropriate PPE (gloves, safety glasses). Obtain Safety Data Sheets for preservatives being used. Follow safe handling procedures.	L
	Spills	Use absorbents and containers for spills.	L
Label and put sample in cooler	Cut hazards	Set up stable work area for labeling samples. Label all containers as to contents. Wear adequate hand protection. Use care when handling glassware.	L
	Heavy lifting- Strains, sprains, awkward bending/lifts, and ergonomic hazards	Use proper lifting techniques. Ensure walking pathway is clear. Do not lift greater than 50 pounds. Use mechanical assistance or two-person lift whenever possible. Limit repetitive awkward motions and twisting motions.	L
Job Steps	Hazards	Controls	RAC
<b>Add Steps, Hazards, and Actions to Eliminate or Minimize Hazards based on conditions encountered in the field.</b>			

Equipment	Training	Inspection
<p><u>Personal Protective Equipment:</u></p> <p>Level D:  Hard Hat  Safety Glasses  Safety-Toed Boots  Work Gloves/ Chemical resistant gloves  ANSI Class 2 reflective warning vests</p> <p>Modified Level D: Refer to SSHP.</p> <p><u>Other Equipment:</u></p> <p>Fire Extinguishers  Emergency Eyewash  First Aid Kit  Insect repellent with DEET  Repel Permanone™  Hand tools  Spill containment supplies  First aid supplies  Containers as needed  Tarps  Heavy duty ext. cords  Drinking water  Weather radio and or smart phone apps for temperature, weather, etc.  Heat stress monitoring  Boat  Sampling Equipment  PPE-Emersion suits if needed  Personal floatation devices</p>	<p>Competent Person (CP) / Qualified Person (QP):</p> <p>CP/CDSO <u>TBD</u>  QP/First Aid and CPR <u>TBD</u>  QP/First Aid and CPR <u>TBD</u></p> <p>Training Requirements (as determined by the SSHO):</p> <p>HAZWOPER 40-Hour  Site safety orientation  Tailgate Safety Meetings  Emergency procedures  Hazard communication  Hearing conservation  MEC awareness  Applicable AHAs  Fire extinguisher use  Biological hazard identification and control  Tornado shelter location  Lightning safety procedures  Heat stress prevention and heat stroke treatment  Cold stress prevention  Boat safety and licensing training</p>	<p>Daily site safety inspection (CDSO) <u>TBD</u></p> <p>Housekeeping (daily)  Eye wash equipment (weekly)  Fire extinguisher (monthly)  Vehicle inspection daily  Equipment and tools inspection daily and before use  Survey areas for poisonous plants, insects, and animals (each work area)  Check body for ticks(each evening during tick season)  Identify closest usable tornado shelter that is available (each work area).</p>

ACTIVITY HAZARD ANALYSIS (AHA)						
<b>Activity/Work Task:</b> Sampling and Analysis <b>Project Name:</b> Former Seneca Army Depot (SEDA) - RI at 4 Known PFAS Sites and SI at Suspected PFAS Sites <b>Project Location:</b> Romulus, NY <b>Contract Number:</b> W912DY20D0017 <b>Task Order Number:</b> W912DY21F0310 <b>Baseline AHA Prepared By:</b> Richard Totino, Project Manager <b>Reviewed By:</b> Edie Scala-Hampson, CIH, CHMM <b>Date Prepared:</b> 06 January 2023 <b>Task Start Date:</b> 1 March 2023 <b>Task Duration:</b> 6 Months <b>Field Notes, Comments, etc.:</b>	<b>Overall Risk Assessment Code (RAC) (Use highest code)</b>				<b>M</b>	
	<b>RAC Matrix</b>					
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	Critical	<b>E</b>	<b>H</b>	<b>H</b>	<b>M</b>	<b>L</b>
	Marginal	<b>H</b>	<b>M</b>	<b>M</b>	<b>L</b>	<b>L</b>
	Negligible	<b>M</b>	<b>L</b>	<b>L</b>	<b>L</b>	<b>L</b>
	Step 1: Review each "Hazard" with identified safety "Controls" and determine RAC (see above).					
	"Probability" is the likelihood to cause an incident, near miss, or accident and identified as: Frequent, Likely, Occasional, Seldom, or Unlikely.				<b>RAC Chart</b>	
"Severity" is the outcome/degree if an incident, near miss, or accident did occur and identified as: Catastrophic, Critical, Marginal, or Negligible.				<b>E = Extremely High Risk</b>		
Step 2: Identify the RAC (Probability/Severity) as E, H, M, or L for each "Hazard" on AHA. Annotate the overall highest RAC at the top of AHA.				<b>H = High Risk</b>		
				<b>M = Moderate Risk</b>		
				<b>L = Low Risk</b>		
Job Steps	Hazards	Actions to Eliminate or Minimize Hazards				RAC
Pre-job setup	Emergency response	Review safety data sheet (SDS). Identify air monitoring equipment and usage. Identify personal protective equipment (PPE) requirements per the Site Safety and Health Plan (SSHP) and rallying points. Notify proper authorities in event of an emergency.				<b>L</b>
	Job site inspection	Prior to start of work, inspect site for any hazardous conditions and correct before work starts. Make sure work area is properly secured to safely perform work at hand.				<b>L</b>
	Equipment inspection	Ensure personnel are trained on specific tools. Inspect tools before each use. Use correct tool for the job. Make use of all safety devices and ensure they are functioning.				<b>L</b>

Job Steps	Hazards	Actions to Eliminate or Minimize Hazards	RAC
Mobilization and setup of equipment	Biological (i.e., plants, insects, snake, and infectious material)	<p>Tuck pants into socks.</p> <p>Wear long sleeves.</p> <p>Use insect repellent.</p> <p>Avoid contact by always looking ahead to where walking, standing, sitting, leaning, grabbing, lifting, or reaching-in-to.</p> <p>Check for signs of insect/spider bites, such as redness, swelling, and flu-like symptoms.</p> <p>Use buddy system to check each other for signs of insect/spider bites.</p> <p>Remove ticks immediately with fine tipped tweezers by grasping the tick as close to your skin as possible and gently pulling straight out. Do not squeeze the tick's body as this may inject fluids into you. Wash the bite area of skin and apply antiseptic.</p>	L
	Severe weather	<p>Stop outdoor work during electrical storms and other extreme weather conditions such as extreme heat or cold temperatures.</p> <p>Take cover indoors or in vehicle.</p> <p>Listen to local forecasts for warnings about specific weather hazards such as tornadoes, hurricanes, and flash floods.</p>	L
	Walking/working surface	<p>Practice good housekeeping practices.</p> <p>Keep walkways and work areas clear of hoses, cords, and clutter.</p> <p>Restrict site to essential personnel.</p>	L
	Handling heavy objects/material	<p>Do not lift more than 50 pounds.</p> <p>Utilize hoisting/material handling techniques and/or equipment.</p> <p>Use buddy system for heavy, awkward loads.</p> <p>Distribute loads evenly.</p>	M
	Hand injuries from pinch points	<p>Ensure site personnel utilize appropriate hand protection. Avoid placing hands in tight spaces while moving materials.</p>	L
	Heat stress	<p>Increase water intake while working.</p> <p>Minimize and/or avoid alcohol intake the night before working in heat stress situations.</p> <p>Increase number of rest breaks and/or rotate workers in shorter work shifts; take breaks in shaded areas.</p> <p>Watch for signs and symptoms of heat exhaustion and fatigue.</p> <p>Plan work for early morning or evening during hot months.</p> <p>Use ice vests when necessary.</p> <p>Rest in cool, dry areas.</p> <p>In the event of heat stroke, bring the victim to a cool environment and initiate first aid procedures.</p> <p>Follow the Accident Prevention Plan (APP) and American Conference of Governmental Industrial Hygienists (ACGIH) Heat Stress Guidelines for Monitoring and establishing a work/rest regimen.</p>	L

Job Steps	Hazards	Actions to Eliminate or Minimize Hazards	RAC
Mobilization and setup of equipment (continued)	Cold stress	<p>Take breaks in heated shelters when working in extremely cold temperatures.</p> <p>Remove the outer layer of clothing and loosen other layers to promote evaporation of perspiration, upon entering the shelter.</p> <p>Be aware of cold stress symptoms such as shivering, numbness in the extremities, and sluggishness.</p> <p>Drink warm liquids to reduce the susceptibility to cold stress.</p>	L
	Insects – outdoor work, if required	See Job Task 2, Hazard 1, Biological.	L
Sampling	Chemical spill	<p>Practice good housekeeping practices.</p> <p>Maintain spill response equipment on site.</p> <p>Practice spill prevention at all times.</p> <p>Ensure proper chemical storage.</p> <p>Ensure spill control and countermeasures plan is in place for spills encountered during work activities.</p> <p>Turn off equipment when fueling.</p> <p>Report all spills to the Site Safety and Health Officer (SSHO).</p> <p>Use subcontractor-supplied SDS for chemicals.</p>	L
	Contact with sharp objects/material	<p>Ensure personnel are trained on specific tools.</p> <p>Use correct tool for the job.</p> <p>Make use of all safety devices and ensure they are functioning.</p> <p>Use care with utility knives, replace dull blades, store properly.</p> <p>Wear appropriate PPE (i.e., gloves, long-sleeved shirts and long pants) to avoid scratches.</p> <p>Be aware of body positioning and ensure that tools are handled correctly.</p> <p>Take care to cut in a direction away from the body.</p> <p>Avoid placing hands in tight places while moving materials.</p> <p>Inspect tools before each use. If tool is not fit for use, report the condition to SSHO, so that it will be taken out of service. If unsure about use of any tool, ask SSHO before attempting to utilize tool or equipment.</p>	M
	Biological (i.e., plants, insects, snake, and infectious material)	See Job Step 2, Hazard 1, Biological.	L
	Severe weather	See Job Step 2, Hazard 2, Severe weather.	L
	Flying debris	Ensure guards are installed and working on tools/equipment.	L

Job Steps	Hazards	Actions to Eliminate or Minimize Hazards	RAC
		Wear appropriate PPE (i.e., safety glasses/goggles/face shield).	
Sampling (continued)	Inhalation/contact with hazardous materials	Ensure site personnel have the appropriate Hazardous Waste Operations and Emergency Response (HAZWOPER), medical clearance and site-specific training. Follow decontamination procedures. Follow emergency contingency procedures. Implement site control areas. Perform real time air monitoring. Wear appropriate PPE for task/activity performed.	L
	Walking/working surface	See Job Step 2, Hazard 3, Walking/working surface.	L
	Handling heavy objects/material	See Job Step 2, Hazard 4, Handling heavy objects/material.	M
	Electrical hazards	Keep heavy equipment at least 10 feet from overhead power lines. Area may have unmarked/unknown underground conduit; when an unknown hazard has been encountered, stop work until hazards and controls are identified and in place. Ensure all electric power tools are energized through a ground fault circuit interrupter (GFCI). Inspect equipment daily before use.	L
	Hand injuries from pinch points	See Job Step 2, Hazard 5, Hand injuries from pinch points.	L
	Hand/power tools	Ensure personnel are trained on specific tools. Inspect tools before each use. Use correct tool for the job. Make use of all safety devices and ensure they are functioning.	L
	Heat stress	See Job Step 2, Hazard 6, Heat stress.	L
	Cold stress	See Job Step 2, Hazard 7, Cold stress.	L
	Chemical splashing during sampling	Wear Modified Level D PPE to avoid skin, eye, and inhalation contact with contaminated groundwater and/or soil. Stand upwind when conducting tasks and minimize possible inhalation exposure; especially when first opening monitoring wells. Conduct air monitoring to determine level of respiratory protection. Utilize engineering controls such as portable venturi air movers to draw away or blow away chemical vapors. Use proper sample jars. Ensure valves are in proper positions.	L
	Static electricity	Use grounding clip on interface probe.	L

Job Steps	Hazards	Actions to Eliminate or Minimize Hazards	RAC
Sampling (continued)	Contact with corrosive chemicals used as sample preservatives contained in sampling bottles.	Wear appropriate gloves and eye protection to avoid contact with corrosive chemicals in sampling containers.	<b>M</b>
Demobilization of equipment	Biological (i.e., plants, insects, snake, and infectious material)	See Job Step 2, Hazard 1, Biological.	<b>L</b>
	Severe weather	See Job Step 2. Hazard 2, Severe weather.	<b>L</b>
	Walking/working surface	See Job Step 2. Hazard 3, Walking/working surface	<b>L</b>
	Handling heavy objects/material	See Job Step 2. Hazard 4, Handling heavy objects/material.	<b>M</b>
	Hand injuries from pinch points	See Job Step 2. Hazard 5, Hand injuries from pinch points.	<b>L</b>
	Heat stress	See Job Step 2. Hazard 6, Heat stress.	<b>L</b>
Decontamination of equipment	Equipment decontamination	<p>See Job Step 2. Hazard 7, Cold stress.</p> <p>Wear modified Level D protection, including a face shield and safety goggles.</p> <p>Ensure that other personnel are out of the area prior to decontamination.</p> <p>Secure the area around the decontamination pad with cones, caution tape, or barricades.</p> <p>Ensure that safe work practices and precautions are taken to minimize the potential for physical injury.</p> <p>Ensure that area is clean after equipment is decontaminated. Barricades, cones, or caution tape must be left in place and secured at all times.</p> <p>Avoid skin and eye contact with isopropyl alcohol, alconox, or other cleaning materials.</p> <p>Stand upwind to minimize any potential inhalation exposure.</p> <p>Dispose of spent cleaning solutions and rinses accordingly.</p>	<b>L</b>
		<b>Stop work and notify your supervisor if you are not sure how to perform your task safely!</b>	

Job Steps	Hazards	Actions to Eliminate or Minimize Hazards	RAC
<i>Add steps, hazards, and actions to eliminate or minimize hazards based on conditions encountered in the field.</i>			

Equipment	Inspection	Training
<p>PPE Level D:</p> <ul style="list-style-type: none"> <li>• Hard hat (if there are overhead hazards)</li> <li>• Safety glasses/face shield</li> <li>• Safety-toed boots</li> <li>• Work gloves/chemical resistant gloves</li> <li>• American National Standards Institute (ANSI) Class 2 reflective warning vests</li> <li>• Hearing protection (as needed)</li> <li>• Tyvek® coveralls (as needed)</li> <li>• Inner and outer nitrile gloves</li> </ul> <p>Other Equipment:</p> <ul style="list-style-type: none"> <li>• Cell phones</li> <li>• Pickup truck</li> <li>• Insect repellent – diethyl toluamide (DEET)</li> <li>• Misc. hand tools</li> <li>• Portable gas generator</li> <li>• Extension cords</li> <li>• Traffic cones</li> <li>• Air monitoring equipment (PPB-RAE, oxygen/combustible gas indicator, as needed)</li> </ul>	<p>Daily inspection (SSHO): <u>James Russell</u></p> <p>Housekeeping (daily):</p> <ul style="list-style-type: none"> <li>• Fire extinguisher (monthly)</li> <li>• Vehicle inspection (daily)</li> <li>• Eye wash (weekly)</li> <li>• Equipment and tools inspection (daily and before use)</li> <li>• Survey areas for poisonous plants, insects, and animals (each work area)</li> <li>• Check body for ticks (each evening during tick season)</li> </ul> <p>Identify closest usable severe weather shelter (e.g., tornado shelter) that is available to each work area.</p>	<p><b>Competent Person (CP) / Qualified Person (QP):</b>            CP/SSHO: <u>James Russell</u>            Alternate CP/SSHO: <u>D.J. Gale</u>            QP/First Aid and cardiopulmonary resuscitation (CPR):  <u>James Russell, D.J. Gale</u></p> <p>Training Requirements (as determined by the SSHO):</p> <ul style="list-style-type: none"> <li>• HAZWOPER 40 hour</li> <li>• Site safety orientation</li> <li>• Tailgate meetings</li> <li>• Emergency procedures</li> <li>• Hazard communication</li> <li>• Hearing conservation</li> <li>• Additional AHAs, as applicable</li> <li>• Fire extinguisher use</li> <li>• Biological hazard identification and control</li> <li>• Severe weather shelter location</li> <li>• Lightning safety procedures</li> <li>• Temperature stress prevention, controls, treatment</li> </ul>



**ACTIVITY HAZARD ANALYSIS (AHA)**

<b>Activity/Work Task:</b> Decontamination of Equipment <b>Project Name:</b> Former Seneca Army Depot (SEDA) - RI at 4 Known PFAS Sites and SI at Suspected PFAS Sites <b>Project Location:</b> Romulus, NY <b>Contract Number:</b> W912DY20D0017 <b>Task Order Number:</b> W912DY21F0310 <b>Baseline AHA Prepared By:</b> Richard Totino, Project Manager <b>Reviewed By:</b> Edie Scala-Hampson, CIH, CHMM <b>Date Prepared:</b> 06 January 2023 <b>Task Start Date:</b> 1 March 2023 <b>Task Duration:</b> 6 Months <b>Field Notes, Comments, etc.:</b>	<b>Overall Risk Assessment Code (RAC) (Use highest code)</b>				<b>L</b>	
	<b>Risk Assessment Code (RAC) Matrix</b>					
	<b>Severity</b>	<b>Probability</b>				
		Frequent	Likely	Occasional	Seldom	Unlikely
	Catastrophic	E	E	H	H	M
	Critical	E	H	H	M	L
	Marginal	H	M	M	L	L
	Negligible	M	L	L	L	L
	Step 1: Review each "Hazard" with identified safety "Controls" and determine RAC (See above)					
	"Probability" is the likelihood to cause an incident, near miss, or accident and identified as: Frequent, Likely, Occasional, Seldom, or Unlikely.				<b>RAC Chart</b>	
"Severity" is the outcome/degree if an incident, near miss, or accident did occur and identified as: Catastrophic, Critical, Marginal, or Negligible				E = Extremely High Risk		
Step 2: Identify the RAC (Probability/Severity) as E, H, M, or L for each "Hazard" on AHA. Annotate the overall highest RAC at the top of AHA.				H = High Risk		
				M = Moderate Risk		
				L = Low Risk		

Job Steps	Hazards	Controls	RAC
Determine location for setup	Traffic-Struck by hazards	Select location away from traffic. Place barricades for work site protection, if necessary. Keep all unnecessary personnel out of the work area and in an upwind location Wear high-visibility vest.	L
	Driving over soft ground Uneven terrain	Choose location with level and firm soils.	L
Movement to and in the designated decontamination (decon) area	Contact with heavy equipment-struck by hazards Vehicular and pedestrian traffic	Shut down all machinery or equipment by positive means to prevent its operation while decontamination is being done. Lower and block bulldozer and scraper blades, end-loader bucket, and similar equipment (if applicable). Prohibit unattended machinery or equipment that has not been turned off. Prohibit getting off or on any equipment while it is in motion. Require all mobile equipment be equipped with back up alarm. Confirm operation. Use signs, barricades, and other traffic control devices, as necessary. Determine if supplemental lighting will be needed in low light conditions. Wear high-visibility vests when performing work within the decon area. Use long-handled brushes, brooms or other appropriate device to remove loose materials at dry decon; hand brushing will not be permitted.	L

Job Steps	Hazards	Controls	RAC
Movement to and in the designated decontamination (decon) area (continued)	Vehicular and pedestrian traffic (continued)	Require the driver or operator to set brakes and keep the dry decon personnel in view at all times. Require equipment operators and truck drivers to not move a stopped vehicle that is subject to a ground-man's decon activity except by the signal of the individual who directed the vehicle to stop. Require trucks to pull out of dry decon at a moderate speed with attention to other traffic areas and ground personnel in the support area.	
	Heat Stress: Exposure to high ambient temperatures  See also General Site Work AHA	Acclimatize to work in hot weather by gradually working in heat and taking more frequent breaks, systematically building up tolerance to heat. Conduct field activities in the early morning, if possible, to avoid heat or inclement weather. Have enough water on site so that each worker can consume, at a minimum, 1 quart per hour per shift. Review with personnel, by frequent reminders, to take water breaks so that each person can consume enough water. Provide access to shade (i.e., blockage from direct sunlight), that is reasonably close to the work area. Keep in mind that a vehicle or other enclosed area with no air conditioning is NOT considered shade. The area must be a well-ventilated area or have air conditioning. Conduct training on risk factors, signs and symptoms of heat illness, importance of hydration and acclimatization, and importance of reporting symptoms and what to do in case of heat illness emergency, and contacting emergency medical services (see APP, Heat Stress Monitoring Plan). Follow the requirements for physiological monitoring (e.g., during work in temperatures above 90 °C-adjusted temperature, perform physiological monitoring—see safety plan if wearing Tyvek® for when to start monitoring) and document on the heat stress physiological monitoring form. Be conscious of your individual tolerance to work in hot weather. Monitor yourself and co-workers for signs and symptoms of heat stress. Take breaks, as necessary, in shady or cool areas and drink plenty of liquids.	
Decontamination	Exposure/Inhalation & Contact with Hazardous Substances  Exposure/ High noise levels  Struck by - flying debris	Perform dry decontamination dry in the exclusion zone (EZ). Remain out of the line of fire of dust or contaminated soils while using hand tools. Stage equipment, to the maximum extent possible, to avoid contamination (i.e., running on clean or overburden soils). Position decon area to minimize potential for cross-contamination or release of any contamination outside the EZ areas. Decon from greater contaminated area to a lesser-contaminated area. Lay down poly or a composite mat to minimize the potential of re-contaminating the equipment while moving it out of the EZ. Decontaminate a grossly contaminated piece of equipment, (dry) before it is moved from the EZ to the decon pad.	<b>L</b>

Job Steps	Hazards	Controls	RAC
Decontamination (continued)	<p>Exposure/Inhalation &amp; Contact with Hazardous Substances</p> <p>Exposure/ High noise levels</p> <p>Struck by - flying debris (continued)</p>	<p>Provide hearing protection on site and require employees to be in a hearing conservation program if exposed to noise above 85 dBA TWA.</p> <p>Use engineering controls (i.e., guards, mufflers, distance) to reduce worker exposure to noise.</p> <p>Conduct noise surveys on activities in question.</p> <p>Place signs to notify employees of high noise areas (85 dBA) where hearing protection is required.</p> <p>Reinforce that dry decon will not sweep materials at any time. Dust must be kept to a minimum.</p> <p>Use a face shield when performing wet decon procedures using pressure washers.</p> <p>Use wet methods to sweep out cabs.</p> <p>Use a face shield when using a sledgehammer to remove gross contamination.</p>	L
Handle equipment and materials.	Slip, trip, and fall hazards	<p>Cover the importance of housekeeping in safety briefings.</p> <p>Wear slip-resistant footwear.</p> <p>Keep work area picked up and as clean as feasible and free of tripping and fall hazards.</p>	
<p>Wrapping and securing contaminated equipment for transport.</p> <p>Wiping, scraping, and brushing of contaminated equipment.</p> <p>Pressure-washing equipment.</p> <p>Collection and handling of decontamination fluids.</p>	Flying debris-eye hazards	<p>Wear safety glasses or goggles and a face shield.</p> <p>Ensure eyewash is available.</p> <p>Wear rain suits or suits of chemical-resistant material to prevent direct contact with hot water or chemicals of concern.</p> <p>Prohibit decon or washing of PPE, with hot water, while on a person. The pressure/steam washer shall be inspected before each use. The manufacturer's instruction manual shall be used to guide the inspection process.</p> <p>Train personnel in the use of the washing equipment and emergency shut-off procedures for the equipment being used.</p> <p>Use the minimum amount of steam/pressure that will complete the job. Pressure washers exceeding 3,000 psi shall not be used without the approval of the Health and Safety Manager.</p> <p>Direct the spray from such equipment at surfaces to be cleaned and never at body parts or other personnel.</p> <p>Use face shields (those in the immediate area of spraying).</p> <p>Keep a firm grip on wand and not point it at anything that is not being washed.</p> <p>Be aware of slipping and be conscious of good footing.</p> <p>Never wire/fix open the trigger on the wand.</p> <p>Take adequate breaks to avoid fatigue. Hot surfaces shall be avoided.</p> <p>Shut off units and allow to cool prior to re-fueling (if gas powered).</p> <p>Monitor carbon monoxide if gas-powered pressure washers are used. Carbon monoxide concentrations should not typically exceed 5 parts per million (ppm) within any indoor areas. The TLV for carbon monoxide is 25 ppm, for 8 hours.</p>	

Job Steps	Hazards	Controls	RAC
<p>Handle equipment and materials.</p> <p>Wrapping and securing contaminated equipment for transport.</p> <p>Wiping, scraping, and brushing of contaminated equipment.</p> <p>Pressure-washing equipment.</p> <p>Collection and handling of decontamination fluids.</p>	<p>Contact with potentially contaminated materials:</p> <p>Inhalation and skin contact hazards</p>	<p>Conduct real-time monitoring (PID).</p> <p>Wear required PPE as indicated in SSHP such as: chemical-resistant gloves based on the identified chemicals, boot covers, and splash suit protection. Follow respirator action level dictates of SSHP.</p> <p>Maintain good housekeeping to safeguard against cross contamination of surrounding areas and eliminate safety hazards.</p> <p>Practice good personal hygiene.</p> <p>Refer to SSHP for chemical hazard discussion.</p> <p>Require only essential personnel be in the decon area. All others should be in an upwind location.</p>	L
<p>Measure with PID for VOC</p>	<p>Inhalation of contaminants</p>	<p>Follow PPE dictates of SSHP based on airborne measurements and action levels.</p>	L
<p>Personal decon</p>	<p>Take home toxics</p>	<p>Decon per SSHP.</p> <p>Remove all contaminated clothing and materials and leave on site.</p> <p>Shower as soon as possible.</p>	L
<p>Containerize water</p>	<p>Spills-Environmental damage</p>	<p>Use absorbents and containers for rinse water.</p>	L
<p>General site work</p>	<p>General site hazards – Environmental:</p> <p>Biologicals (plants, insects, wildlife)</p> <p>Adverse weather</p> <p>Temperature stresses</p> <p>UV hazards, noise, lifting, etc.</p>	<p>Refer to General Site Work AHA.</p>	L

Job Steps	Hazards	Controls	RAC
<i>Add Steps, Hazards, and Actions to Eliminate or Minimize Hazards based on conditions encountered in the field.</i>			

Equipment	Training	Inspection
<p><u>Personal Protective Equipment:</u></p> <p>PPE Level D:  Hard Hat  Safety Glasses  Safety-Toed Boots  Work Gloves/Chemical resistant gloves  ANSI Class 2 reflective warning vests</p> <p><u>Other Equipment:</u></p> <p>Generator  Fire Extinguishers  Emergency Eyewash  First Aid Kit  Insect repellent- DEET  Hand tools  Spill containment supplies  First aid supplies  Containers as needed  Tarps  Drums  GFCI  Heavy duty ext. cords  Drinking water  Weather radio and/or smart phone apps for temperature and noise  Heat stress monitoring  Steam cleaner  Alconox/cleaning brushes/buckets/as needed</p>	<p>Competent Person (CP) / Qualified Person (QP):</p> <p>CP/CDSO <u>TBD</u>  QP/First Aid and CPR <u>TBD</u>  QP/First Aid and CPR <u>TBD</u></p> <p>Training Requirements (as determined by the SSHO):</p> <p>HAZWOPER 40 hour  Site safety orientation  Tailgate meetings  Emergency procedures  Hazard communication  Hearing conservation  MEC awareness, if needed  Applicable AHAs  Fire extinguisher use  Biological hazard identification and control  Tornado shelter location  Lightning safety procedures  Heat stress prevention and heat stroke treatment  Cold stress prevention</p>	<p>Daily inspection (CDSO) <u>TBD</u></p> <p>Housekeeping (daily)  Fire extinguisher (monthly)  Vehicle inspection (daily)  Eye Wash  Equipment and tools inspection (daily and before use)  Survey areas for poisonous plants, insects, and animals(each work area)  Check body for ticks (each evening during tick season)  Identify closest usable tornado shelter that is available (each work area)</p>

**ACTIVITY HAZARD ANALYSIS (AHA)**

<b>Activity/Work Task:</b> Investigation-Derived Waste Management and Disposition <b>Project Name:</b> Former Seneca Army Depot (SEDA) - RI at 4 Known PFAS Sites and SI at Suspected PFAS Sites <b>Project Location:</b> Romulus, NY <b>Contract Number:</b> W912DY20D0017 <b>Task Order Number:</b> W912DY21F0310 <b>Baseline AHA Prepared By:</b> Richard Totino, Project Manager <b>Reviewed By:</b> Edie Scala-Hampson, CIH, CHMM <b>Date Prepared:</b> 06 January 2023 <b>Task Start Date:</b> 1 March 2023 <b>Task Duration:</b> 6 Months <b>Field Notes, Comments, etc.:</b>	<b>Overall Risk Assessment Code (RAC) (Use highest code)</b>				<b>L</b>	
	<b>Risk Assessment Code (RAC) Matrix</b>					
	<b>Severity</b>	<b>Probability</b>				
		Frequent	Likely	Occasional	Seldom	Unlikely
	Catastrophic	<b>E</b>	<b>E</b>	<b>H</b>	<b>H</b>	<b>M</b>
	Critical	<b>E</b>	<b>H</b>	<b>H</b>	<b>M</b>	<b>L</b>
	Marginal	<b>H</b>	<b>M</b>	<b>M</b>	<b>L</b>	<b>L</b>
	Negligible	<b>M</b>	<b>L</b>	<b>L</b>	<b>L</b>	<b>L</b>
	Step 1: Review each "Hazard" with identified safety "Controls" and determine RAC (See above)					
	"Probability" is the likelihood to cause an incident, near miss, or accident and identified as: Frequent, Likely, Occasional, Seldom, or Unlikely.				<b>RAC Chart</b>	
"Severity" is the outcome/degree if an incident, near miss, or accident did occur and identified as: Catastrophic, Critical, Marginal, or Negligible				<b>E = Extremely High Risk</b>		
Step 2: Identify the RAC (Probability/Severity) as E, H, M, or L for each "Hazard" on AHA. Annotate the overall highest RAC at the top of AHA.				<b>H = High Risk</b>		
				<b>M = Moderate Risk</b>		
				<b>L = Low Risk</b>		

Job Steps	Hazards	Controls	RAC
Determine location for setup/staging equipment	Traffic-Struck by hazards	Select location away from traffic. Place barricades for work site protection, if necessary. Wear high-visibility vest. Note all moving equipment in work areas.	<b>L</b>
	Driving and walking over soft ground Uneven terrain	Choose location with level and firm soils. Be aware of rocks, brush, animal borroughs, and other hazards. Choose firm ground for walking.	<b>L</b>
	Slip, trip, and fall hazards	Wear slip-resistant footwear. Keep work area picked up and as clean as feasible and free of tripping and fall hazards. Use railings and barrier with gated access around underground openings.	<b>L</b>

Job Steps	Hazards	Controls	RAC
Drum waste, sealing drums, and transporting drums	Cut/crush/skin absorption hazards-Hand and Foot	<p>Wear safety-toed/composite-toed boots when there is heavy material being handled.</p> <p>Check bung lids to be sure they are tight to prevent leaks.</p> <p>Use mechanical aid (drum dolly) for relocating drums.</p> <p>Wear appropriate chemical resistant personal protective equipment (PPE) as defined in Site Safety and Health Plan (SSHP).</p> <p>Wear thick clothing when there is a potential for lacerations. Wear heavy duty work gloves.</p>	L
	<p>Inhalation, skin contact, and ingestion hazards with chemicals of concern (COC), etc.</p> <p>Cross-contamination and contact with potentially contaminated materials</p>	<p>Communicate air sampling results.</p> <p>Review hazards of COCs and review Safety Data Sheets (SDSs) of chemicals brought to site.</p> <p>Wear chemical-resistant gloves based on the identified chemicals. Use boot covers and splash suit protection, if necessary.</p> <p>Label all investigative-derived waste (IDW) containers as to contents.</p> <p>Follow good hygiene practices: no eating, drinking or smoking until decontaminated and out of Exclusion zone.</p> <p>IDW transport and disposal activities shall be in accordance with applicable local, municipal, county, state, and Federal rules and regulations.</p> <p>Adequate lighting will be provided to control for safety and visibility concerns</p>	L L
	Flying debris-eye	<p>Wear safety glasses when there is potential for flying debris or splash hazard.</p> <p>Ensure eyewash bottles available.</p>	L
	Electric shock	Require a ground fault circuit interrupter (GFCI) for any electrical equipment powered by a generator.	L
	Environmental protection/spills	<p>Place plastic where it is needed, to protect environment.</p> <p>Containerize all purge water and waste.</p> <p>Use absorbents and containers for spills.</p>	L
	Remote location Lone worker	<p>Determine accessibility to associates, communication needs, first aid and rescue equipment and procedure.</p> <p>"Buddy System" - Visual contact will be maintained with the sampling technician during sampling activities.</p> <p>Refer to General Site Hazards AHA</p>	L



Job Steps	Hazards	Controls	RAC
Drum waste, sealing drums, and transporting drums	Environment and biological hazards: Adverse weather Temperature Stress UV Hazards Plants, insects and local wildlife General Site Hazards: Noise, lifting, slips/falls, traffic, etc.	See General Site Work AHA.	L
	Take home toxics	Decontaminate with soap and water. Remove all contaminated clothing and materials and leave on site. Use plastic as a barrier for soil, truck bed or foot well contact. Check for ticks on body and remove within 24 hours to prevent transmittal of infection (Lyme Disease precaution).	
Drum placement	Crushing injuries	Transport drums evenly and slowly; keep on level ground.	L
	Fire	Transport/store all flammable liquids in UL/FM approved containers. Prohibit smoking and all other sources of ignition during refueling operation. Keep fully charged ABC fire extinguisher in vehicle (10-B:C). Inspect weekly. Use in well-ventilated area.	L
	Malfunctioning equipment	Inspect generators and support equipment (pumps, water meters, transducers, and related equipment) daily and document.	L
IDW collection	Chemical spills and chemical contact with skin and eyes.	Never leave open chemicals unattended. Know location of nearest eyewash station. Wear proper PPE (for example: nitrile gloves, safety glasses, acid apron). Keep prep and pack area well ventilated (open window). Know location of SDS, absorbent spill cloth and hazmat spill kit. Make sure all caps are secure.	L

Job Steps	Hazards	Controls	RAC
<i>Add Steps, Hazards, and Actions to Eliminate or Minimize Hazards based on conditions encountered in the field.</i>			

Equipment	Training	Inspection
<p><u>Personal Protective Equipment:</u></p> <p>Level D:  Hard Hat  Safety Glasses  Safety-Toed Boots  Work Gloves/Chemical resistant gloves  ANSI Class 2 reflective warning vests</p> <p><u>Other Equipment:</u></p> <p>Fire Extinguishers  Emergency Eyewash bottle  First Aid Kit  Insect repellent with DEET  Repel Permanone™  Hand tools  Spill containment supplies  Containers as needed  Tarps  GFCI  Heavy duty extension cords  Drinking water  Weather radio and or smart phone apps for temperature and noise  Heat stress monitoring</p>	<p>Competent Person (CP) / Qualified Person (QP):</p> <p>CP/CDSO <u>TBD</u>  QP/First Aid and CPR <u>TBD</u>  QP/First Aid and CPR <u>TBD</u></p> <p>Training Requirements (as determined by the SSHO):</p> <p>HAZWOPER 40 hour  Site safety orientation  Tailgate meetings  Emergency procedures  Hazard communication  Hearing conservation  MEC awareness  Applicable AHAs  Fire extinguisher use  Biological hazard identification and control  Tornado shelter location  Lightning safety procedures  Heat stress prevention and heat stroke treatment  Cold stress prevention</p>	<p>Daily site safety inspection (CDSO) <u>TBD</u></p> <p>Housekeeping (daily)  Eye wash bottle  Fire extinguisher (monthly)  Vehicle inspection daily  Equipment and tools inspection daily and before use  Survey areas for poisonous plants, insects, and animals (each work area)  Check body for ticks (each evening during tick season)  Identify closest usable tornado shelter that is available (each work area).</p>

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**ACTIVITY HAZARD ANALYSIS (AHA)**

<b>Activity/Work Task:</b> Surveying <b>Project Name:</b> Former Seneca Army Depot (SEDA) - RI at 4 Known PFAS Sites and SI at Suspected PFAS Sites <b>Project Location:</b> Romulus, NY <b>Contract Number:</b> W912DY20D0017 <b>Task Order Number:</b> W912DY21F0310 <b>Baseline AHA Prepared By:</b> Richard Totino, Project Manager <b>Reviewed By:</b> Edie Scala-Hampson, CIH, CHMM <b>Date Prepared:</b> 06 January 2023 <b>Task Start Date:</b> 1 March 2023 <b>Task Duration:</b> 6 Months <b>Field Notes, Comments, etc.:</b>	<b>Overall Risk Assessment Code (RAC) (Use highest code)</b>					<b>L</b>
	<b>Risk Assessment Code (RAC) Matrix</b>					
	<b>Severity</b>	<b>Probability</b>				
		Frequent	Likely	Occasional	Seldom	Unlikely
	Catastrophic	<b>E</b>	<b>E</b>	<b>H</b>	<b>H</b>	<b>M</b>
	Critical	<b>E</b>	<b>H</b>	<b>H</b>	<b>M</b>	<b>L</b>
	Marginal	<b>H</b>	<b>M</b>	<b>M</b>	<b>L</b>	<b>L</b>
	Negligible	<b>M</b>	<b>L</b>	<b>L</b>	<b>L</b>	<b>L</b>
	Step 1: Review each “ <b>Hazard</b> ” with identified safety “ <b>Controls</b> ” and determine RAC (See above)					
	“ <b>Probability</b> ”: likelihood the activity will cause a mishap (near miss, incident or accident) identified as: Frequent, Likely, Occasional, Seldom, or Unlikely.				<b>RAC Chart</b>	
“ <b>Severity</b> ”: the outcome if a mishap occurred. Identify as: Catastrophic, Critical, Marginal, or Negligible.				<b>E = Extremely High Risk</b>		
Step 2: Identify the RAC (Probability vs. Severity) as E, H, M, or L for each “ <b>Hazard</b> ” on AHA. Annotate the overall highest RAC at the top of AHA.				<b>H = High Risk</b>		
				<b>M = Moderate Risk</b>		
				<b>L = Low Risk</b>		

Job Steps	Hazards	Controls	RAC
Walking through the site Land surveying Working on or adjacent to streets and roads	Tripping Falling/slipping Striking objects Struck by and against (vehicles and equipment)	Use caution in unfamiliar areas and when walking on wet, muddy, frosty, icy, or snow-covered surfaces. Be aware of surroundings, holes, and nests. Watch where you step. Avoid slippery areas when possible. Slow down - take smaller steps. Lower your center of gravity when necessary. Maintain proper illumination in work areas. Wear personal protective equipment (PPE) with high-visibility vests when walking or working near moving equipment or vehicles. Maintain a safe distance from operations. Do not enter the swing radius of the equipment. Do not assume equipment and vehicle operators have seen you unless operator has made eye contact with you and signaled to you.	<b>M</b>
Use of tools/equipment	Hand injuries	Items to be handled shall be inspected for sharp edges, splinters, burrs, rough surfaces, etc. prior to being handled. Personnel shall wear leather gloves when handling materials with sharp edges, splinters, burrs, rough surfaces, etc. Personnel shall be aware of and avoid pinch point hazards.	<b>L</b>

Job Steps	Hazards	Controls	RAC
Gaining access to site	Cuts and scrapes from crossing barbed wire fences	Avoid crossing barbed wire fences when possible. If crossing is necessary, then a thick blanket (or equivalent) shall be wrapped around the wires/barbs at the point of crossing. Personnel shall assist workmates over the fence.	L
Vehicle use	Slips, trips, and falls	Do not jump from equipment or elevated surfaces. Use three-point contact rule for entering/exiting vehicles. Use handrails and other stationary objects (door frames, doorknobs, steering wheels, walls, etc.) to increase stability.	L
	General site hazards: Insect bites and stings. Contact dermatitis from poisonous and irritating plants (poison ivy, poison oak, and poison sumac). Vehicle traffic Severe weather Heat stress Cold stress Noise Lifting Slips, trips, falls UV hazards, etc.	See General Site Work AHA	L

Job Steps	Hazards	Controls	RAC
<b>Add Steps, Hazards, and Actions to Eliminate or Minimize Hazards based on conditions encountered in the field.</b>			

Equipment	Training	Inspection
<p><u>Personal Protective Equipment:</u></p> <p>Safety Glasses with side shields            Safety-Toed Boots            Work Gloves            Class 2 high visibility vests            Tyvek® coveralls to avoid skin contact with irritating plants, if necessary</p> <p><u>Other Equipment:</u></p> <p>Drinking water            Weather smart phone apps            Insect repellent with DEET (Deep Woods Off™ or equivalent) Repel Permanone™</p>	<p>Competent Person (CP) / Qualified Person (QP):</p> <p>CP/CDSO <u>TBD</u>            QP/First Aid and CPR <u>TBD</u>            QP/First Aid and CPR <u>TBD</u></p> <p>Training Requirements (as determined by the SSO):</p> <p>Site safety orientation            Emergency procedures            Applicable AHAs            Fire extinguisher use            Biological hazard identification and control            Tornado shelter location            Lightning safety procedures            Heat stress prevention and heat stroke treatment            Cold stress prevention</p>	<p>Daily site safety inspection (CDSO) <u>TBD</u></p> <p>Housekeeping (daily)            Vehicle inspection (daily)            Equipment and tools inspection (daily and before use)            Survey areas for poisonous plants, insects, and animals (each work area)            Check body for ticks (each evening during tick season)            Identify closest usable tornado shelter that is available (each work area)</p>

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**ATTACHMENT 2**

**SAFETY PERSONNEL  
PROOF OF TRAINING AND  
COMPETENCY CERTIFICATIONS  
EMPLOYEE MEDICAL SURVEILLANCE PROGRAM PARTICIPATION**

*(To be provided with installation-specific SSHP)*

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**WRIGHT STATE**  
**UNIVERSITY™**

# **Certificate of Participation**

***Michael D. Jackson***

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**for successful completion of**

**Hazardous Materials Health and Safety  
EH 368**

*Meets OSHA 40 Hour Training Requirements (29 CFR 1910.120)  
for Hazardous Materials Cleanup Operations*

**June 10, 1995**

A handwritten signature in black ink, appearing to read "G. A. Burton".

G. Allen Burton, Jr.  
*Director, Institute for Environmental Quality*



**This Certificate Demonstrates That**

**Michael Jackson**

**Has successfully completed the**

**8-HOUR HAZARDOUS WASTE SAFETY ANNUAL REFRESHER COURSE**

Hazardous Waste Safety: 29 CFR 1910.120(e)(8) and 29 CFR 1926.65(e)(8)

DOT Hazardous Materials Shipping Awareness and Safety: 49 CFR 172.700(H)

Respiratory Protection: 29 CFR 1910.134

Hearing Conservation: 29 CFR 1910.95

Hazard Communication: 29 CFR 1910.1200

**April 28, 2022**

**Steve Davis CIH, CSP** Digitally signed by Steve Davis CIH,  
CSP  
Date: 2022.04.29 10:49:16 -04'00'

---

**Steve Davis CIH, CSP**



# **CLICKSAFETY**

## CERTIFICATE OF COURSE COMPLETION

**MICHAEL JACKSON**

Has Successfully Completed

**OSHA 30 Hour Construction**

This course was developed and presented by ClickSafety

I confirm that I personally took the  
course listed above.

6021706

SERIAL NUMBER

3/24/2012

COMPLETION DATE

30 HOURS

COURSE DURATION

Michael D. Jackson

STUDENT SIGNATURE



This card acknowledges that the recipient has successfully completed a 30-hour Occupational Safety and Health Training Course in **Construction Safety and Health**

*el*

**Michael Jackson**

*Pete Rice 66873*

**03/24/2012**

(Trainer name – print or type)

(Course end date)

OSHA recommends Outreach Training Courses as an orientation to occupational safety and health for workers. Participation is voluntary. Workers must receive additional training on specific hazards of their job. This course completion card does not expire.

Use or distribution of this card for fraudulent purposes, including false claims of having received training, may result in prosecution under 18 U.S.C. 1001. Potential penalties include substantial criminal fines, imprisonment up to five years, or both.

For OSHA Outreach Training Program go to "Training" at [www.osha.gov](http://www.osha.gov)

Rev. 12/2009



**This is To Certify That**

**Mike Jackson**

**Has successfully completed**

**OSHA 8-HOUR HAZARDOUS WASTE OPERATIONS SUPERVISOR  
REFRESHER TRAINING**

In accordance with the requirements of 29 CFR PART 1910.120(e) (4) and 29 CFR 1926.65(e) (4)

**February 22, 2016**

**Steve Davis**

Digitally signed by Steve Davis  
DN: cn=Steve Davis, o=HGL, ou=EHS,  
email=sdavis@hgl.com, c=US  
Date: 2016.02.23 07:42:35 -05'00'

---

**Steve Davis CIH, CSP**



# Barton & Loguidice

## CERTIFICATE OF COURSE COMPLETION

This certifies that Michael Jackson has completed

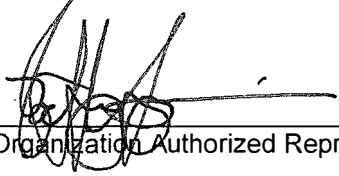
### **PFAS SEMINAR**

***Presented by:***

*Daniel Lang, Linda Shaw, Dan Casey, Greg Lesniak, Jon Sundquist, Jim  
Occhialini **Training Provider:** Alpha Analytical*

3.0 Professional Development Hours<sup>\*'\*\*</sup>

April 10, 2019  
Albany, New York

  
\_\_\_\_\_  
Sponsor Organization Authorized Representative

\*Based on the regulations that govern the certification of coursework in NYS

\*\*To confirm the acceptance of these PDHs outside of NYS, please consult the licensure board of that state.

Barton & Loguidice, D.P.C.  
443 Electronics Parkway  
Liverpool, New York 13088



# PROFESSIONAL LICENSING

GEORGIA SECRETARY OF STATE BRAD RAFFENSPERGER

CORPORATIONS • ELECTIONS • LICENSING • CHARITIES

## Licensee Details

### Licensee Information

**Name:** Michael David Jackson

**Address:**

Mechanicville NY 12118

### Primary Source License Information

<b>Lic #:</b>	PG001852	<b>Profession:</b>	Geologists	<b>Type:</b>	Registered Professional Geologist
<b>Secondary:</b>		<b>Method:</b>	Examination	<b>Status:</b>	Active
<b>Issued:</b>	11/21/2006	<b>Expires:</b>	12/31/2023	<b>Last Renewal Date:</b>	11/28/2021

### Associated Licenses

No Prerequisite Information

### Public Board Orders

Please see Documents section below for any Public Board Orders

### Other Documents

No Other Documents

Data current as of: December 8, 2021 14:55:30

This website is to be used as a primary source verification for licenses issued by the Professional Licensing Boards. Paper verifications are available for a fee. Please contact the Professional Licensing Boards at 844-753-7825.



STATE OF TENNESSEE  
DEPARTMENT OF  
COMMERCE AND INSURANCE



MICHAEL D. JACKSON

ID NUMBER: 4896  
LIC STATUS: ACTIVE  
EXPIRATION DATE: February 01, 2025

31338

TENNESSEE BOARD OF PROFESSIONAL GEOLOGISTS  
LICENSED PROFESSIONAL GEOLOGIST

THIS IS TO CERTIFY THAT ALL REQUIREMENTS  
OF THE STATE OF TENNESSEE HAVE BEEN MET

MICHAEL D. JACKSON  
173 MEEHAN ROAD  
MECHANICVILLE NY 12118

# State of Tennessee

13266921

TENNESSEE BOARD OF PROFESSIONAL GEOLOGISTS  
LICENSED PROFESSIONAL GEOLOGIST  
MICHAEL D. JACKSON

*This is to certify that all requirements of the State of Tennessee have been met.*



ID NUMBER: 4896  
LIC STATUS: ACTIVE  
EXPIRATION DATE: February 01, 2025

IN-1313  
DEPARTMENT OF  
COMMERCE AND INSURANCE



# MISSISSIPPI STATE BOARD OF REGISTERED PROFESSIONAL GEOLOGISTS

POST OFFICE BOX 22742  
JACKSON, MISSISSIPPI 39225-2742  
TELEPHONE – 601-354-6370

[GEOLOGY@MSBRPG.MS.GOV](mailto:GEOLOGY@MSBRPG.MS.GOV)

[WWW.MSBRPG.MS.GOV](http://WWW.MSBRPG.MS.GOV)

*L. Wayne Williams II, RPG, Executive Director*

December 16, 2022

Mr. Michael David Jackson  
173 Meehan Road  
Mechanicville, NY 12118

Re: Receipt for Payment – DELIVERED BY EMAIL TO [mjackson@hgl.com](mailto:mjackson@hgl.com)      [mdj68@yahoo.com](mailto:mdj68@yahoo.com)

Dear Mr Jackson:

The Mississippi State Board of Registered Professional Geologists is in receipt of your payment for the item described below. This letter is your official receipt for your payment.

<b>ITEM:</b>	2023 RENEWAL PAYMENT FOR RPG 0949
<b>DATE PAYMENT RECORDED:</b>	12/16/2022
<b>PAYMENT TYPE:</b>	CC 66646298
<b>AMOUNT:</b>	\$200
<b>EXPIRATION:</b>	12/31/2023

Thanks for allowing us to serve you and please contact us if we can help you in anyway.

Sincerely,

L. Wayne Williams II, RPG  
Executive Director



Mississippi State Board Of  
Registered Professional Geologists

**Michael David Jackson**

**Registered Professional Geologist**

**RPG # 0949 Registration Date: 12/19/2017**

**Expiration Date: 12/31/2023**

**Verify license status at <https://www.msbrpg.ms.gov/rpg-roster>**

If a wallet card is desired, print this renewal certificate at a reduced scale on card stock. Approximately 55-65% depending on printer, some experimentation may be required.



Gobierno de Puerto Rico  
*Government of Puerto Rico*

DEPARTAMENTO DE ESTADO  
*Department of State*

'Secretaría Auxiliar de Juntas Examinadoras'  
*Office of the Assistant Secretary of State for Examining Boards*

La Junta Examinadora de Geólogos  
*The Examining Board of Geologists*

por la presente certifica que  
*hereby certifies that*

**Michael David Jackson**

por haber cumplido todos los requisitos de Ley, ha sido inscrito en el Registro de esta Junta como  
*having met all the requirements of law, has been registered as:*

**Geólogo Profesional**  
*Professional Geologist*

En testimonio de lo cual se expide este certificado para autorizar el ejercicio de dicha profesión bajo el sello de la Junta Examinadora.  
*In testimony whereof, this certificate is issued to authorize the practice of this profession, under the seal of the Examining Board.*

En San Juan, Puerto Rico, hoy 09 de abril de 2018  
*In San Juan, Puerto Rico, on April 09, 2018.*

Número de Certificado: 135  
*Certificate Number*

Vencimiento: 08 de abril de 2023  
*Expires: April 08, 2023*



*Jesús Rodríguez Martínez*  
Presidente  
*Mariana E. Costas Aldibey*  
Directora  
Director

# HGL Construction Management Execution (CMEX) Personnel Training

*HydroGeoLogic, Inc.*

Test Score: 88%

*hereby certifies that*

# Michael Jackson

*has successfully completed*

## *HGL Construction Management Execution (CMEX) Training*

*On this 15<sup>th</sup> Day of April 2022*

*Jeff Neumann*  
Jeff Neumann  
CMEX Training Provider

04-15-2022

Date

Expires: 04-15-2024





certifies that

**MICHAEL JACKSON**


has successfully completed

**C2 Confined Spaces in Construction an Introduction**

and has earned 0.1 IACET CEUs and 1 Contact Hours.



I confirm that I personally took the  
course listed above.

  
STUDENT SIGNATURE



27995453  
SERIAL NUMBER

2/15/2019  
COMPLETION DATE

1.25 HOURS  
COURSE DURATION

27995453





certifies that

**MICHAEL JACKSON**

has successfully completed ClickSafety's web-based training course:

**C3 Competent Person, Excavations**

This course was developed and presented by ClickSafety.com, Inc.



I confirm that I personally took the course listed above.

11573368  
SERIAL NUMBER

12/5/2014  
COMPLETION DATE

2.75 HOURS  
COURSE DURATION

*Michael D. Johnson*  
STUDENT SIGNATURE

11573368



1775 West 55<sup>th</sup> Avenue  
Denver, CO 80221  
303.410.4941  
trainingchc.com

*Certifies that*  
Michael D. Jackson

---

*In recognition of satisfactory completion of  
A Two-Hour Awareness Course of instruction entitled*

**Asbestos Awareness Training**

*in compliance with Asbestos Hazard Emergency Response Act  
(AHERA) – 40 CFR 763.92(a)(1), OSHA, Subpart Z, 1910.1001(j)(k)(iv), and 1926.1101(k)(9)(vi).*

---

Course Date: June 27, 2016  
Hours: 2  
Certificate No.: 16-706-AA-O  
Expiration Date: June 27, 2017  
Certification not valid without watermark

*Danaya Benedetto*

---

Danaya Benedetto – Training Program Manager



This is To Certify that

**Michael Jackson**

has successfully completed the

**WASTE AWARENESS TRAINING**

on

**April 28, 2022**

---

**Jody Sanchez**

**Senior Hazardous Materials Manager**

# Zika Virus

## What is Zika Virus Disease?

The most common symptoms of Zika are fever, rash, joint pain, and conjunctivitis (red eyes). The illness is usually mild with symptoms lasting for several days to a week. For this reason, many people might not realize they have been infected. An individual's symptoms may appear anywhere from 2 to 7 days after exposure to the virus. The Zika virus has been documented to result in injuries to fetuses, resulting in **severe birth defects** such as microcephaly, if the mother becomes infected immediately before or during pregnancy.

## How is Zika Transmitted?

Zika is primarily transmitted through the bites of infected Aedes mosquitoes. Mosquitoes become infected when they bite a person infected with the virus. Infected mosquitoes can then spread the virus to other people through bites. Zika can also be transmitted from a pregnant mother to her baby during pregnancy or around the time of birth and through contact with bodily fluids of an infected person.

## What can you do?

Although the following action steps won't eliminate the possibility of Zika transmission completely, they are prudent steps that all of us can take to prevent the spread of many types of mosquito-borne diseases. Project Activity Hazard Analyses for work in areas where Zika is present may specify additional precautions.

- Use insect repellent containing an EPA registered active ingredient such as DEET (N,N-diethyl-m-toluamide) or picaridin (KBR 3023). Use a repellent that provides protection for the amount of time that you will be outdoors or reapply as recommended on the product instructions. The more DEET a repellent contains, the longer time it can protect you from mosquito bites, with protection times ranging from 1 hour (4.75% DEET) to 5 hours (23.8% DEET).
- If you are using sunscreen, apply sunscreen first and then insect repellent.
- Wear long sleeved shirts and long pants.
- Permethrin is another long-lasting repellent that is intended for application to clothing and gear, but not directly to skin.
- If you are or may become pregnant, or, for males, if your sexual partner is or may become pregnant, talk to your supervisor(s) about any outdoor work assignment(s) in areas where Zika is present. If you are in this category you should consider declining assignments that pose a risk of Zika infection.
- If symptoms of Zika infection develop, seek medical attention promptly.

Sources of additional information:

Centers for Disease Control - [www.cdc.gov/zika/](http://www.cdc.gov/zika/)

HGL health and safety staff: Steve Davis: 865-659-0499, [sdavis@hgl.com](mailto:sdavis@hgl.com); Edie Scala-Hampson: 847-409-6384, [escala-hampson@hgl.com](mailto:escala-hampson@hgl.com)

I have read and understand the information above.



Employee Signature

MICHAEL D. JACKSON

Printed Name

9/12/2016

Date



HSI  
 1450 Westec Drive  
 Eugene, OR 97402  
 800-447-3177

10/7/2022  
 Michael Jackson

Dear Michael

Congratulations on successfully completing your HSI Adult First Aid | CPR AED Adult (2020) -DC class. This HSI-Approved Training Center has chosen to issue your certification card digitally.

The digital certification card below is identical to a printed version of the card. It documents that you have demonstrated achievement of the required knowledge and hands-on skill objectives of the training program to the satisfaction of a currently authorized HSI Instructor. Your digital certification card may be printed for validation of certification. If further proof is required, scan the QR Code or go to [www.hsi.com/validation](http://www.hsi.com/validation) and follow the instructions. The QR Code link in this letter will stay active. If you lose this letter, you may request a copy from the Training Center named below.

We strongly recommend that you download and save a copy of this letter for safekeeping.

To download the digital student book for this class or to complete a short evaluation of your class and instructor, please go to [www.hsi.com/passport](http://www.hsi.com/passport) and register using the following number: 202662

Adirondack Health & Safety Training Ne LLC  
 Glens Falls, NY



Certification Validation QR Code



<b>Jack Beagle</b>	
Authorized Instructor (Print Name)	
<b>2220519</b>	
Registry No.	
<b>10/7/2022</b>	<b>10/2024</b>
Class Completion Date	Expiration Date
<b>518-792-6146</b>	<b>ADIR17</b>
Training Center Phone No.	Training Center I.D.

This Adult First Aid | CPR AED training program conforms with the 2020 American Heart Association (AHA) Guidelines Update for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care and the 2020 AHA and American Red Cross Focused Update for First Aid. This training program was not designed to meet pediatric first aid training requirements and should not be used for that purpose.

**Expiration date may not exceed two years from month of class completion.**

# WORK STATUS REPORT

Employer Copy

**TYPE OF EXAMINATION:** Periodic Exam  
**EXAM CLASSIFICATION:** Periodic Examination

<b>EMPLOYEE:</b>	Jackson, Michael D.	<b>COMPANY:</b>	HydroGeoLogic, Inc.
<b>ID:</b>	1320	<b>POSITION:</b>	Geologist
<b>DATE OF EXAM:</b>	03/11/2022	<b>LOCATION:</b>	HydroGeoLogic - Ballston Lake, NY
<b>EXPIRATION DATE:</b>	03/11/2024	<b>SITE:</b>	

The following recommendations are based on a review of one or all of the following: a base history questionnaire, supporting diagnostic tests, physical examination, and the essential functions of the position applied for or occupied by the individual named above.

	Yes	No	Undecided
Has the employee any detected medical conditions that would increase his/her risk of material health impairment from occupational exposure in accordance with 29 CFR §1910.120 (Hazardous)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Has the employee any contraindication for work in accordance with 29 CFR §1910.95(g)1926.52 (Hearing Conservation)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Has the employee any limitations in accordance with 29 CFR §1910.134 (Respirator)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

### WORK STATUS

**QUALIFIED**

The examination indicates no significant medical condition. Employee can be assigned any work consistent with skills and training.

**QUALIFIED - WITH LIMITATIONS**

Pursuant to applicable OSHA regulations, the examination indicates that a medical condition currently exists which will require the following work assignment limitations:

**NOT QUALIFIED**

**DEFERRED**

The examination indicated that additional information is necessary. The employee has been given the following instructions.

### Comments:

I have reviewed the medical data of the above named employee, and informed the employee of the results of the medical examination and any medical conditions that require follow-up examination or treatment.

Name of Physician: Peter P. Greaney, M.D. Date: 03/17/22

Signature: 



3980 Quebec St., 2nd Floor, Denver CO 80207-1633 800-711-2706

Student Affiliation  
HydroGeoLogic Inc

## *Certificate of Completion*

**Brandon DiCicco**

has successfully completed training and passed all testing requirements for

***40-Hour HAZWOPER Initial Training  
per 29 CFR 1910.120(e) & Title 8CCR 5192(e)(3)(A)***

Presented This  
***November 1, 2021***

***Compliance Solutions Occupational Trainers, Inc.***

**Certificate Number: REG12107**

Jeffrey Kline  
President/CEO

Anthony Camper  
Instructor



**This Certificate Demonstrates That**

**Brandon DiCicco**

**Has successfully completed the**

**8-HOUR HAZARDOUS WASTE SAFETY ANNUAL REFRESHER COURSE**

Hazardous Waste Safety: 29 CFR 1910.120(e)(8) and 29 CFR 1926.65(e)(8)

DOT Hazardous Materials Shipping Awareness and Safety: 49 CFR 172.700(H)

Respiratory Protection: 29 CFR 1910.134

Hearing Conservation: 29 CFR 1910.95

Hazard Communication: 29 CFR 1910.1200

**April 28, 2022**

**Steve Davis CIH, CSP** Digitally signed by Steve Davis CIH,  
CSP  
Date: 2022.04.28 13:46:12 -04'00'

---

**Steve Davis CIH, CSP**



Student Affiliation  
HydroGeoLogic Inc



3980 Quebec St., 2nd Floor, Denver CO 80207-1633 800-711-2706

## *Certificate of Completion*

**Brandon DiCicco**

**has successfully completed training and passed all testing requirements for**

***8-Hour Dress Out for HAZWOPER***

***N/A***

**Presented This  
October 29, 2021**

***Compliance Solutions Occupational Trainers, Inc.***

**Certificate Number: REG11939**

Jeffrey Kline  
President/CEO

Dane Wilcox  
Instructor

# HGL Construction Management Execution (CMEX) Personnel Training

*HydroGeoLogic, Inc.*

Test Score: 94%

*hereby certifies that*

# Brandon DiCicco

*has successfully completed*

## *HGL Construction Management Execution (CMEX) Training*

*On this 15<sup>th</sup> Day of April 2022*

*Jeff Neumann*  
Jeff Neumann  
CMEX Training Provider

04-15-2022

Date

Expires: 04-15-2024



**CLICKSAFETY™**

TRAINING. COMPLIANCE. YOUR FUTURE.

certifies that

**Brandon DiCicco**

has successfully completed

**Cal Confined Space for Construction**

and 0.10 CEUs

and 1.00 Contact Hours.

This course was developed and  
presented by ClickSafety.com, Inc.



I confirm that I personally took the  
course listed above.

1220197013

**Serial Number**

03/04/2022

**Completion Date**

1.25 Hours

**Course Duration**

A handwritten signature in blue ink that reads "B. DiCicco".

**Student Signature**



This is To Certify that

**Brandon DiCicco**

has successfully completed the

**WASTE AWARENESS TRAINING**

on

**April 28, 2022**

A handwritten signature in black ink that reads "Jody Sanchez".

Digitally signed by

Jody L Sanchez

Date: 2022.05.02

11:19:45 -07'00'

**Jody Sanchez**

**Senior Hazardous Materials Manager**



This is To Certify that

**Brandon DiCicco**

has successfully completed the

**HAZARDOUS MATERIALS  
AWARENESS TRAINING**

on

**January 12, 2023**

---

**Jody Sanchez**  
**Senior Hazardous Materials Manager**

# **CLICKSAFETY™**

TRAINING. COMPLIANCE. YOUR FUTURE.

certifies that

## **Brandon DiCicco**

has successfully completed ClickSafety's web-based training course:

### **Competent Person, Excavations for Construction (UPDATED)**

This course was developed and presented by ClickSafety.com, Inc.



I confirm that I personally took the course listed above.

1220208180

**Serial Number**

03/17/2022

**Completion Date**

2.83 Hours

**Course Duration**



**Student Signature**

**Forklifts and Earthmoving Equipment**

H&S Procedure No.: 30
Publication Date: December 2012
Revision No.: 05
Revision Date: November 2020
Review Date: November 2021

**AUTHORIZATION FOR OPERATION OF FORK LIFTS OR EARTHMOVING EQUIPMENT BY HGL PERSONNEL**

Operator name: Brandon DiCicco

Authorized to operate the following equipment

- Agricultural tractors
- Excavators
- Crawler loaders
- Skid steers
- Crawler dozers
- Backhoe loaders
- Fork lift
- Other: \_\_\_\_\_

Any conditions of operation:  
None

**Supervisor's Authorization:** I authorize operation of the equipment indicated above. I have confirmed this employee's knowledge of the equipment by review of relevant training certificates or documentation of prior operating experience. I have also observed this employee operate this equipment, to confirm the required knowledge and skill.

Supervisor Name (print): Stephen Phelps

Supervisor Signature: Steph Phelps Date: 2-2-2022

**Concurrence by HGL Director of Environmental Construction Services:** I have reviewed the submitted information regarding training and equipment operation and I concur with this authorization.

Director of Environmental Construction Services (print): Jeff Neumann

Signature: Jeffrey Neumann Date: 02/03/2022

This authorization is valid for three years. Reevaluation or retraining is required within three years of the date of this authorization.



American Safety & Health Institute
1450 Westec Drive
Eugene, OR 97402
800-447-3177

Monday, April 11, 2022

Brandon DiCicco

Dear Brandon

Congratulations on successfully completing your American Safety & Health Institute Basic First Aid/CPR and AED for Adult/Child (G2015) class. In an effort to be more environmentally friendly your ASHI Approved Training Center has chosen to issue your certification card electronically.

The digital certification card below is identical to a printed version of the card and documents that a properly authorized ASHI Instructor evaluated your knowledge and hands on skills in accordance with the program standard. You may duplicate this page as needed to provide proof of your training.

Go online to access your HSI Passport and take advantage of the additional training resources available to you:

- Metronome for CPR Rate
• CPR and First Aid Skill Guides
• Digital download of Student Handbook
• Mobile Application Downloads
• E-mail Renewal Notification
• Rate Your Program Survey

Find the mobile app in the appstore on your smartphone or tablet.

Register now at www.hsi.com/passport/. Use the registration code 152662 to register.

Adirondack Health & Safety Training Ne LLC
11 Broad Street
Glens Falls, NY 12801

CERTIFICATION CARD
CPR, AED, and Basic First Aid
Brandon DiCicco
has successfully completed and competently performed the required knowledge and skill objectives for this program.
[ ] Adult [x] Adult and Child [ ] Adult, Child, and Infant
Card is void if more than one box is checked.
Validation Code: C2864194177156449
Jack Beagle
Authorized Instructor (Print Name)
2220519
Registry No.
03/29/2022
Class Completion Date
3/2024
Expiration Date
518-792-6146
Training Center Phone No.
ADIR17
Training Center I.D.
This card certifies the above named individual has successfully completed the required objectives and hands-on skill evaluations to the satisfaction of a currently authorized ASHI Instructor. This program conforms to the 2015 AHA Guidelines Update for CPR and ECC and the 2015 AHA and ARC Guidelines Update for First Aid. This program is not designed to meet pediatric first aid training regulatory requirements and should not be used for that purpose. Expiration date may not exceed two years from month of class completion.



## WORK STATUS REPORT

Employer Copy

**TYPE OF EXAMINATION:** Baseline Exam  
**EXAM CLASSIFICATION:** Baseline Examination

**EMPLOYEE:** DiCicco, Brandon  
**ID:**  
**DATE OF EXAM:** 10/05/2021  
**EXPIRATION DATE:** 10/05/2023

**COMPANY:** HydroGeoLogic, Inc.  
**POSITION:** Assistant Geologist  
**LOCATION:** HydroGeoLogic - Ballston Lake, NY  
**SITE:**

The following recommendations are based on a review of one or all of the following: a base history questionnaire, supporting diagnostic tests, physical examination, and the essential functions of the position applied for or occupied by the individual named above.

	Yes	No	Undecided
Has the employee any detected medical conditions that would increase his/her risk of material health impairment from occupational exposure in accordance with 29 CFR §1910.120 (Hazardous Materials)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Has the employee any contraindication for work in accordance with 29 CFR §1910.95(g)1926.52 (Hearing Conservation)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Has the employee any limitations in accordance with 29 CFR §1910.134 (Respirator)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### WORK STATUS

 **QUALIFIED**

The examination indicates no significant medical condition. Employee can be assigned any work consistent with skills and training.

 **QUALIFIED - WITH LIMITATIONS**

Pursuant to applicable OSHA regulations, the examination indicates that a medical condition currently exists which will require the following work assignment limitations:

 **NOT QUALIFIED** **DEFERRED**

The examination indicated that additional information is necessary. The employee has been given the following instructions.

### Comments:

#### ***Negative Drug Screen.***

I have reviewed the medical data of the above named employee, and informed the employee of the results of the medical examination and any medical conditions that require follow-up examination or treatment.

Name of Physician: Dr. Jeffrey Jacobs Date: 10/11/21

Signature: \_\_\_\_\_



3980 Quebec St., 2nd Floor, Denver CO 80207-1633 800-711-2706

Student Affiliation  
HydroGeoLogic Inc

## *Certificate of Completion*

**Rebecca Lynch**

**has successfully completed training and passed all testing requirements for**

***40-Hour HAZWOPER Initial Training  
per 29 CFR 1910.120(e) & Title 8CCR 5192(e)(3)(A)***

**Presented This  
October 16, 2021**

***Compliance Solutions Occupational Trainers, Inc.***

**Certificate Number: REG10945**

**Jeffrey Kline  
President/CEO**

**Anthony Camper  
Instructor**



3980 Quebec St., 2nd Floor, Denver CO 80207-1633 800-711-2706

Student Affiliation  
HydroGeoLogic Inc  
200901421

## *Certificate of Completion*

**Rebecca Lynch**  
has successfully completed training and passed all testing requirements for  
**8-Hour Dress Out for HAZWOPER**  
**N/A**

Presented This  
**October 15, 2021**

***Compliance Solutions Occupational Trainers, Inc.***

Certificate Number: REG11411

Jeffrey Kline  
President/CEO

Dane Wilcox  
Instructor



**This Certificate Demonstrates That**  
**Rebecca Lynch**  
**Has successfully completed the**  
**8-HOUR HAZARDOUS WASTE SAFETY ANNUAL REFRESHER COURSE**

Hazardous Waste Safety: 29 CFR 1910.120(e)(8) and 29 CFR 1926.65(e)(8)

DOT Hazardous Materials Shipping Awareness and Safety: 49 CFR 172.700(H)

Respiratory Protection: 29 CFR 1910.134

Hearing Conservation: 29 CFR 1910.95

Hazard Communication: 29 CFR 1910.1200

**April 28, 2022**

**Steve Davis CIH, CSP** Digitally signed by Steve Davis CIH,  
CSP  
Date: 2022.04.28 13:38:16 -04'00'

---

**Steve Davis CIH, CSP**

# HGL Construction Management Execution (CMEX) Personnel Training

HydroGeoLogic, Inc.  
hereby certifies that

Test Score: 100%

# Rebecca Lynch

has successfully completed

## HGL Construction Management Execution (CMEX) Training

On this 15<sup>th</sup> Day of April 2022



Jeff Neumann  
CMEX Training Provider

04-15-2022

Date

Expires: 04-15-2024





This is To Certify that

**Rebecca Lynch**

has successfully completed the

**WASTE AWARENESS TRAINING**

on

**April 28, 2022**

A handwritten signature in black ink that reads "Jody Sanchez".

Digitally signed by

Jody L Sanchez

Date: 2022.05.02

11:16:59 -07'00'

**Jody Sanchez**

**Senior Hazardous Materials Manager**



This is To Certify that

**Rebecca Lynch**

has successfully completed the

**HAZARDOUS MATERIALS  
AWARENESS TRAINING**

on

**January 12, 2023**

---

**Jody Sanchez**  
**Senior Hazardous Materials Manager**



A member of the HSI family of brands

American Safety & Health Institute
1450 Westec Drive
Eugene, OR 97402
800-447-3177

Tuesday, March 29, 2022

Rebecca Lynch

Dear Rebecca

Congratulations on successfully completing your American Safety & Health Institute Basic First Aid/CPR and AED for Adult/Child (G2015) class. In an effort to be more environmentally friendly your ASHI Approved Training Center has chosen to issue your certification card electronically.

The digital certification card below is identical to a printed version of the card and documents that a properly authorized ASHI Instructor evaluated your knowledge and hands on skills in accordance with the program standard. You may duplicate this page as needed to provide proof of your training.

Go online to access your HSI Passport and take advantage of the additional training resources available to you:

- Metronome for CPR Rate
• CPR and First Aid Skill Guides
• Digital download of Student Handbook
• Mobile Application Downloads
• E-mail Renewal Notification
• Rate Your Program Survey

Find the mobile app in the appstore on your smartphone or tablet.

Register now at www.hsi.com/passport/. Use the registration code 152662 to register.

Adirondack Health & Safety Training Ne LLC
Adirondack Health & Safety Tra
Glens Falls, NY 12801

CERTIFICATION CARD
CPR, AED, and Basic First Aid
Rebecca Lynch
has successfully completed and competently performed the required knowledge and skill objectives for this program.
[ ] Adult [x] Adult and Child [ ] Adult, Child, and Infant
Card is void if more than one box is checked.
Validation Code: C2864194177156448
Jack Beagle
Authorized Instructor (Print Name)
2220519
Registry No.
03/29/2022
Class Completion Date
3/2024
Expiration Date
518-792-6146
Training Center Phone No.
ADIR17
Training Center I.D.
This card certifies the above named individual has successfully completed the required objectives and hands-on skill evaluations to the satisfaction of a currently authorized ASHI Instructor. This program conforms to the 2015 AHA Guidelines Update for CPR and ECC and the 2015 AHA and ARC Guidelines Update for First Aid. This program is not designed to meet pediatric first aid training regulatory requirements and should not be used for that purpose. Expiration date may not exceed two years from month of class completion.



# WORK STATUS REPORT

Employer Copy

**TYPE OF EXAMINATION:** Baseline Exam  
**EXAM CLASSIFICATION:** Baseline Examination

**EMPLOYEE:** Lynch, Rebecca      **COMPANY:** HydroGeoLogic, Inc.  
**ID:**      **POSITION:** Assistant Geologist  
**DATE OF EXAM:** 09/24/2021      **LOCATION:** HydroGeoLogic - Ballston Lake, NY  
**EXPIRATION DATE:** 09/24/2023      **SITE:**

The following recommendations are based on a review of one or all of the following: a base history questionnaire, supporting diagnostic tests, physical examination, and the essential functions of the position applied for or occupied by the individual named above.

	Yes	No	Undecided
Has the employee any detected medical conditions that would increase his/her risk of material health impairment from occupational exposure in accordance with 29 CFR §1910.120 (Hawpoper)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Has the employee any contraindication for work in accordance with 29 CFR §1910.95(g)1926.52 (Hearing Conservation)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Has the employee any limitations in accordance with 29 CFR §1910.134 (Respirator)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**WORK STATUS**


- QUALIFIED**      The examination indicates no significant medical condition. Employee can be assigned any work consistent with skills and training.
  
- QUALIFIED - WITH LIMITATIONS**      Pursuant to applicable OSHA regulations, the examination indicates that a medical condition currently exists which will require the following work assignment limitations:
  
- NOT QUALIFIED**
  
- DEFERRED**      The examination indicated that additional information is necessary. The employee has been given the following instructions.

**Comments:**

***Qualified for biennial frequency.***  
***Negative Drug Screen.***

I have reviewed the medical data of the above named employee, and informed the employee of the results of the medical examination and any medical conditions that require follow-up examination or treatment.

Name of Physician: Dr. Jeffrey Jacobs      Date: 10/01/21

Signature: 

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**PARSONS**

CERTIFIES THAT

*Stephane Aube*

has successfully completed

HAZWOPER REFRESHER 2022

on

October 27, 2022



**The New England Consortium**  
(Partially supported by the National Institute of Environmental Health Sciences)



This is to certify that  
**Stephane Aube**

Certificate #: 4c0e97d8-0a95-4a14-b54d-9820f60b5802

has successfully completed the  
**(101) 40-hr Hazardous Waste Site Worker**

**Health & Safety Training per requirements of 29 CFR 1910.120**

**CEUs:4.0 - MA DWT-2011-51 3/16/11 TCHs:40 MA WWT-BC-2011-2324 2/8/11 TCHs:40**

Training Date(s): 10/07/2019 - 10/11/2019

Event #: EV1579

This training was delivered in conjunction with:

ConnectiCOSH  
MassCOSH  
New HampshireCOSH  
RICOSH

To verify authenticity of this certificate, please call The New England Consortium at (978) 934-3257

A handwritten signature in blue ink that reads "Paul Morse".

Paul Morse, Project Director/co-PI

A handwritten signature in blue ink that reads "David Coffey".

David Coffey, Training Manager

# Certificate Of Completion

PRESENTED TO

*Stephane Aube*

In Recognition of Successful Completion of Requirements In

CPR/AED (Adult / Child / Infant)  
Universal First Aid

2/25/2021

CERTIFICATION DATE

2/25/2023

EXPIRATION DATE

HOLDER'S SIGNATURE

*Christopher Bauer*

AUTHORIZED SIGNATURE



[www.AmericanSTI.org](http://www.AmericanSTI.org)

This certifies participant listed above has successfully passed skills evaluation in accordance with national cognitive skills examination standards, and American Safety Training Institute certification terms and conditions. American Safety Training Institute courses follow national guidelines set by the American Heart Association (AHA), and the International Liaison Committee on Resuscitation (ILCOR). The American Safety Training Institute is not associated, affiliated with, sponsored, or endorsed by, American Safety and Health Institute (ASHI), American Heart Association (AHA), or American Red Cross (ARC), and unless otherwise specified no affiliation or endorsement is implied. **SUCCESSFUL COMPLETION DOES NOT GUARANTEE FUTURE PERFORMANCE.**

**Hazardous Waste Operations and Emergency Response  
CERTIFICATE OF COMPLETION**

**Michael Hayes**

Certificate Number: Parsons HAZ22-64601

*Has completed 8 hours of refresher training on items specified in 29 CFR 1910.120(e)(2), including the critique of Parsons incidents that have occurred over the past 12 months and satisfactorily passing an examination demonstrating an understanding of the material.*

**PARSONS**  
Somerset, New Jersey

September 26, 2022

Date of Course  
Completion

September 26, 2023

Date of Expiration



John R. Barker, CSP  
V.P. Safety, Health, Environment

Certificate of Completion

**Michael Hayes**

has completed the requirements for

**Adult First Aid/CPR/AED**

conducted by

**American Red Cross**

Date Completed: **09/20/2021**

Valid Period: **2 Years**

Certificate ID: **00OJ83M**



Scan code or visit:

<https://www.redcross.org/take-a-class/qrcode?certnumber=00OJ83M>

**Hazardous Waste Operations and Emergency Response  
CERTIFICATE OF COMPLETION**

**Cory Mahony**

Certificate Number: Parsons HAZ22-4590D

*Has completed 8 hours of refresher training on items specified in 29 CFR 1910.120(e)(2), including the critique of Parsons incidents that have occurred over the past 12 months and satisfactorily passing an examination demonstrating an understanding of the material.*

**PARSONS**  
Somerset, New Jersey

October 14, 2022

Date of Course  
Completion

October 14, 2023

Date of Expiration



John R. Barker, CSP  
V.P. Safety, Health, Environment



**Certificate of Completion**



**American Red Cross**  
Training Services

Cory Mahony  
has completed the requirements for  
**Adult First Aid/CPR/AED**  
conducted by  
**RescueStat**  
Date Completed: 11/28/22  
Validity Period: 2 Years  
Certificate ID: 012Q142





**American Red Cross**  
Training Services

## **Certificate of Completion**

Cory Mahony

has successfully completed requirements for

**Adult First Aid/CPR/AED**

Date Completed: 11/28/2022

Validity Period: 2 Years

Conducted by: RescueStat



To verify certificate, scan code or visit [redcross.org/digitalcertificate](https://redcross.org/digitalcertificate) and enter ID.

Learn and be inspired at [LifesavingAwards.org](https://LifesavingAwards.org)



012Q142

**Hazardous Waste Operations and Emergency Response  
CERTIFICATE OF COMPLETION**

**Kevin Ronhock**

Certificate Number: Parsons HAZ22-5141D

*Has completed 8 hours of refresher training on items specified in 29 CFR 1910.120(e)(2), including the critique of Parsons incidents that have occurred over the past 12 months and satisfactorily passing an examination demonstrating an understanding of the material.*

**PARSONS**  
Somerset, New Jersey

June 2, 2022

Date of Course  
Completion

June 2, 2023

Date of Expiration



John R. Barker, CSP  
V.P. Safety, Health, Environment

**CleanHarbors**  
**ENVIRONMENTAL SERVICES®**  
*Certificate of Training*

*This is to certify that*

**Kevin Ronhock**

*Representing*


***Clean Harbors Environmental Services, Inc.***

*Satisfactorily completed training in*  
**40-HOUR HAZARDOUS WASTE SITE OPERATIONS**  
**29 CFR 1910.120 (e)(3)**  
**CONFINED SPACE ENRTY / RESCUE**  
**29CFR 1910.146**

*Conducted by*

**CLEAN HARBORS ENVIRONMENTAL TRAINING SPECIALISTS**

**May 20, 2016**

  
**Gregory Bird, Sr. Mgr. Health and Safety**

**ATTACHMENT 3**

**FACT SHEET**  
**PFOA & PFOS DRINKING WATER**  
**HEALTH ADVISORIES**

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## Drinking Water Health Advisories for PFAS Fact Sheet for Communities

On June 15, 2022, EPA released four drinking water health advisories for per- and polyfluoroalkyl substances (PFAS). In releasing these drinking water health advisories, EPA is acting in accordance with its mission and responsibility to protect public health and keep communities informed when new science becomes available. EPA is committed to partnering with states, Tribes, territories, and water utilities, and the agency's new health advisories represent a key input that can be used to inform actions to address PFAS in drinking water, including water quality monitoring, changing sources of drinking water or modifying treatment to reduce exposure to these substances. EPA also announced that it is inviting states and territories to apply for \$1 billion – the first of \$5 billion in Bipartisan Infrastructure Law grant funding – to address PFAS and other emerging contaminants in drinking water, specifically in small or disadvantaged communities.

### What are PFAS?

PFAS are a group of manufactured chemicals that have been used in industry and consumer products since the 1940s. There are thousands of different PFAS, some of which have been more widely used and studied than others. One common concern is that PFAS generally break down very slowly, meaning that concentrations can accumulate in people, animals, and the environment over time.

Perfluorooctanoic Acid (PFOA) and Perfluorooctane Sulfonate (PFOS) are two of the most widely used and studied chemicals in the PFAS group. PFOA and PFOS have been replaced in the United States with other PFAS in recent years. In chemical and product manufacturing, GenX chemicals are considered a replacement for PFOA, and perfluorobutane sulfonate (PFBS) is considered a replacement for PFOS.

### What Is a Health Advisory?

Drinking water health advisories provide information on contaminants that can cause human health effects and are known or anticipated to occur in drinking water. EPA's health advisories are non-enforceable and non-regulatory and provide technical information to states agencies and other public health officials on health effects, analytical methods, and treatment technologies associated with drinking water contamination.

EPA's lifetime health advisories identify levels to protect all people, including sensitive populations and life stages, from adverse health effects resulting from exposure throughout their lives to these PFAS in drinking water. The health advisory levels were calculated to offer a margin of protection against adverse health effects. EPA's lifetime health advisories also take into account other potential sources of exposure to these PFAS beyond drinking water (for example, food, air, consumer products, etc.), which provides an additional layer of protection.

### What Is the Basis for EPA's New Health Advisories?

The interim updated health advisories for PFOA and PFOS are based on human studies in populations exposed to these chemicals. Human studies have found associations between PFOA and/or PFOS

exposure and effects on the immune system, the cardiovascular system, human development (e.g., decreased birth weight), and cancer. The final health advisories for GenX chemicals and PFBS are based on animal studies following oral exposure to these chemicals. GenX chemicals have been linked to health effects on the liver, the kidney, the immune system, and developmental effects, as well as cancer. PFBS has been linked to health effects on the thyroid, reproductive system, development, and kidney.

### Why is EPA Issuing Interim Updated Health Advisories for PFOA and PFOS?

Consistent with EPA's mission and responsibility to protect public health and keep communities informed when new science becomes available, EPA is issuing interim updated health advisories for PFOA and PFOS in light of new scientific information on these chemicals' health effects. These interim health advisories will be in place until EPA's forthcoming PFAS National Primary Drinking Water Regulation is in effect.

### What are the Health Advisory Levels?

- Interim updated Health Advisory for PFOA = 0.004 parts per trillion (ppt)
- Interim updated Health Advisory for PFOS = 0.02 ppt
- Final Health Advisory for GenX chemicals = 10 ppt
- Final Health Advisory for PFBS = 2,000 ppt

### What Does this Mean for Communities?

The agency recognizes that these new health advisories may raise many questions. EPA encourages people who are concerned to learn about PFAS, including actions that may already be underway and opportunities to reduce exposure. EPA has created [answers to a list of important questions](#) related to this announcement to help members of the public learn more.

If you are concerned about PFAS in your drinking water, EPA recommends you contact your local water utility to learn more about your drinking water and to see whether they have monitoring data for PFAS or can provide any specific recommendations for your community. EPA recommends that public water systems that find PFOA or PFOS in their drinking water take steps to inform customers, undertake additional sampling to assess the level, scope, and source of contamination, and examine steps to limit exposure.

In many communities, public health officials have taken steps to reduce exposure to PFAS in drinking water. Current science indicates that **lower levels of PFAS exposure present less risk**, so those efforts help protect public health.

**Drinking water systems have reduced exposure to PFAS** by closing contaminated wells, changing the rates of blending of water sources, or installing technologies that remove PFAS from the water (such as granular activated carbon or reverse osmosis).

If you are **concerned about PFAS in your drinking water**:

- Learn about testing and actions your water system may have taken, or request testing.
- If you have a home drinking water well, ensure you are protecting and maintaining it: <https://www.epa.gov/ground-water-and-drinking-water>
- Consider any resources and recommendations from your state: <https://www.epa.gov/pfas/us-state-resources-about-pfas>



- Review EPA’s Meaningful and Achievable Steps You Can Take to Reduce Your Risk:  
<https://www.epa.gov/pfas/meaningful-and-achievable-steps-you-can-take-reduce-your-risk>
- Review EPA’s questions and answers about these drinking water health advisories:  
<https://www.epa.gov/sdwa/questions-and-answers-drinking-water-health-advisories-pfoa-and-pfos>
- Follow EPA’s progress in developing a PFAS National Drinking Water Regulation:  
<https://www.epa.gov/sdwa/and-polyfluoroalkyl-substances-pfas>
- Learn about EPA funding through the Bipartisan Infrastructure Law to reduce PFAS in water:  
<https://www.epa.gov/dwcapacity/wiin-grant-emerging-contaminants>.
- Learn more about PFAS and review the agency’s PFAS Strategic Roadmap:  
<https://www.epa.gov/pfas/pfas-strategic-roadmap-epas-commitments-action-2021-2024>

\* List of Acronyms: Per- and poly-fluoroalkyl substances (PFAS); Perfluorooctanoic Acid (PFOA); Perfluorooctane Sulfonic Acid (PFOS); Perfluorobutane Sulfonic Acid and its Potassium Salt (PFBS); Hexafluoropropylene Oxide (HFPO) Dimer Acid and its Ammonium Salt (GenX Chemicals)

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**ATTACHMENT 4**

**LIST OF PROHIBITED ITEMS FOR SAMPLING OF PFAS**

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**SITE SAFETY AND HEALTH PLAN**  
**Former Seneca Army Depot Activity**  
**ATTACHMENT 4**  
**LIST OF PROHIBITED AND ACCEPTABLE ITEMS**  
**FOR SAMPLING OF PFAS**

<b>Prohibited Items</b>	<b>Acceptable Items</b>
<b>Field Equipment</b>	
Teflon®-containing materials	High-density polyethylene (HDPE)
Low-density polyethylene (LDPE)	Polyvinyl chloride (PVC) or acetate liners
Aluminum foil	Silicon tubing
Waterproof field books	Loose paper (non-waterproof)
Plastic clipboards, binders or spiral cover notebooks	Aluminum field clipboards or with Masonite
Post-it notes	Sharpies
<b>Field Clothing and Personal Protective Equipment</b>	
New cotton clothing or synthetic water-resistant, waterproof or stain-treated clothing. Clothing containing Gor-Tex®.	Well laundered clothing, defined as clothing that has been washed six or more times after purchase, made of natural fibers (preferably cotton).
Clothing laundered using fabric softener.	Clothing laundered without fabric softener.
Boots containing Gore-Tex®	Boots made with polyurethane and PVC
Tyvek®	Cotton clothing
No cosmetics, moisturizers, hand cream or other related products as part of personal cleaning/showering routine on the morning of sampling.	Sunscreens – Alba Organics Natural Sunscreen, Yes to Cucumbers, Aubrey Organics, Jason Natural Sunblock, Kiss my face, and baby sunscreens that are “free” or “natural.” Insect Repellents – Jason Natural Quit Bugging Me, Repel Lemon Eucalyptus Insect Repellent, Herbal Armor, California Baby Natural Bug Spray, Babyganics Sunscreen and Insect Repellent, and Avon Skin So Soft Bug Guard Plus – SPF 30 Lotion
<b>Sample Containers</b>	
LDPE or glass containers	HDPE or polypropylene
Teflon®-lined caps	Unlined polypropylene caps
<b>Rain Events</b>	
Waterproof or water-resistant rain gear	Gazebo tent that is only touched or moved prior to and following sampling activities.
<b>Equipment Decontamination</b>	
Decon 90	Alconox® and/or Liquinox®
Water from an on-site well	PFAS-free water from a tested source.
<b>Food Considerations</b>	
All food and drink, with exceptions noted at right.	Bottled water and hydration drinks (i.e., Gatorade, Powerade) to be brought and consumed only in the staging area.

The U.S. Army Corps of Engineers, Omaha District has adopted, with minimal modifications, sample handling and processing methods as presented in Appendix A of the February 2016 Government of Western Australia, Department of Environmental Regulation, Interim Guideline on the Assessment and Management of Perfluoroalkyl Substances (PFAS), Contaminated Sites Guidelines.

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**ATTACHMENT 5**

**EMERGENCY CONTACTS LIST AND HOSPITAL MAP**

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**EMERGENCY INFORMATION**

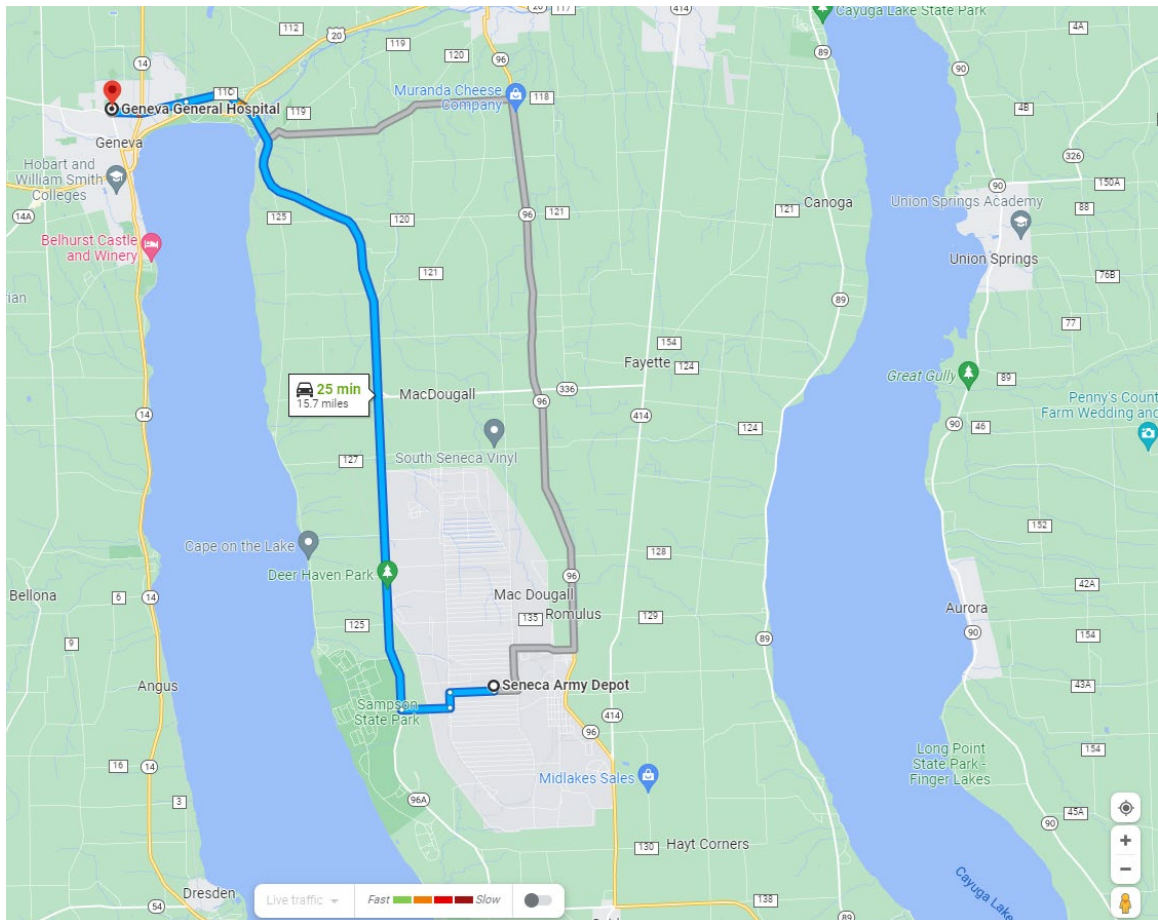
To facilitate the quick retrieval of information in the event of an emergency, this summary has been placed in the front of this Accident Prevention Plan. A copy must be posted in a conspicuous location on site and carried in field vehicles. For emergency situations, telephone contact should be made with the site point of contact who will then contact the appropriate response teams. In the event of a serious, life-threatening emergency, emergency personnel should be contacted prior to contacting the site point of contact.

**Emergency Telephone Numbers and Project Contacts**

<b>EMERGENCY (Police, Fire, Hospital)</b>		<b>911</b>
<b>Fire – Romulus Fire Department</b>	Operations Commander	(607) 869-5282
<b>Police – Seneca County Sheriff’s Office</b>	Patrol Section	(315) 220-3200
<b>Emergency Medical Services – Geneva General Hospital</b>		(315) 787-4000
<b>U.S. Army Corp of Engineers</b>		
MM Design Center Technical Lead Contracting Officer's Representative	Charles “Hud” Heaton	(256) 324-9097
Safety & Occupational Health Specialist Ordnance & Explosives Directorate	Anthony Isadore	(256) 895-8098
Project Manager	Chris Gallo	(917) 790-8230
Baseline Realignment and Closure Environmental Coordinator	Jim Moore	(347) 271-0226
<b>HydroGeoLogic, Inc. (HGL) and Parsons Team Contacts</b>		
HGL 24/7 Emergency number	(800) 341-3647	
HGL Program Manager	Derek Anderson	(706) 372-5138
HGL Senior Project Manager	John Blaum	(518) 369-1733
HGL Site Manager	Mike Jackson	(518) 877-3789
HGL Site Safety and Health Officer	Mike Jackson	(518) 877-3789
Corporate Health and Safety Director (CHSD)	Steve Davis, CSP, CIH	Cell: (865) 659-0499
Safety and Health Manager (SHM)/Project Certified Industrial Hygienist (CIH)	Edie Scala-Hampson, CIH, CHMM	Cell: (847) 409-6384
WorkCare 24/7 Incident Intervention Service (first aid and injury management guidance)	To be contacted for all work-related injuries and illnesses.	(888) 449-7787
Parsons Project Manager	Beth Badik	(617) 429-9624
Parsons Field Team Manager	Todd Belanger	(202) 591-6826
Parsons Project Safety, Health and Environmental Officer	Todd Belanger	(202) 591-6826

**Directions and map to nearest hospital:** Map and travel time to nearest hospital will be noted in Attachment 5 of the Site-Specific Site Safety and Health Plan.

1. Seneca Army Depot  
6600 NY-96, Romulus, NY 14541
2. Take Seneca Army Depot and Smith Vineyard Rd to NY-96A N  
7 min (1.8 mi)
3. Follow NY-96A N to Sessler Dr in Waterloo  
12 min (11.4 mi)
4. Take Border City Rd and E North St to your destination in Geneva  
6 min (2.4 mi)
5. Geneva General Hospital  
196 North St, Geneva, NY 14456



**Evacuation and rally points for severe weather:** HGL will coordinate a safe place of refuge with all site personnel to include rally points and evacuation methods to be identified on site.

**ATTACHMENT 6**

**HGL STANDARD OPERATING**

**PROCEDURES**

**201.506 – Personal Protective Equipment**  
**408.507 - MEC Anomaly Avoidance Support**

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	<b>CORPORATE TECHNICAL PROCEDURE</b>	
	Approved for issue by:	
	Process Owner	
	Corporate Quality Director	
<b>Personal Protective Equipment</b>	<b>Document No.: HGL SOP 201.506 (Formerly H&amp;S Procedure 06)</b>	
	<b>Process Category: Health and Safety</b>	
	<b>Revision No.: 10</b>	
	<b>Effective Date: December 22, 2022</b>	
	<b>Last Review Date: December 2022</b>	
<b>Next Review Date: December 2023</b>		

## 1.0 PURPOSE AND APPLICABILITY

The purpose of this procedure is to provide guidance in the proper selection and use of personal protective equipment (PPE) and to support compliance with regulatory and client requirements for PPE. HydroGeoLogic, Inc. (HGL) staff must use PPE when engaged in activities where a potential exists for harmful exposure to chemical, biological, physical, or mechanical hazards that cannot be controlled by other means such as elimination, substitution of chemical agents, engineering controls, or administrative controls. This procedure applies to all HGL locations and all HGL activities.

## 2.0 SUMMARY OF METHOD

- Implement other hazard controls rather than using PPE, whenever possible, such as removing the hazard, substituting less hazardous materials, implementing engineering/mechanical controls, or utilizing administrative controls.
- Perform and document hazard evaluations for all work that may require use of PPE before initiating the work. The required PPE should be documented in an APP, SSHP, or Activity Hazard Analyses. The PPE requirements in these documents should be specific and should not include phrases like “proper” PPE.
- Purchase PPE as specified in HGL’s Policy 505.160: *Personal Protective Equipment*.
- Provide employees with a choice of PPE in a selection of sizes from several different vendors. Proper fit of PPE is critical to providing adequate protection.
- Train personnel to use required PPE properly.
- Verify that PPE is used properly and provides adequate protection against credible hazards.

HGL-branded hard hats and Class II high visibility vests are available from corporate health and safety and maintained in HGL’s Reston office. Contact Barbara Farmar at (703) 478-5186 or at [bfarmar@hgl.com](mailto:bfarmar@hgl.com).

<b>Personal Protective Equipment</b>	<b>Document No.: HGL SOP 201.506</b>
	<b>Process Category: Health and Safety</b>
	<b>Revision No.: 10</b>
	<b>Last Review Date: December 22, 2022</b>
	<b>Next Review Date: December 2023</b>

### **3.0 DEFINITIONS**

Protective clothing categories established by the U.S. Environmental Protection Agency are as follows.

- Level A – Fully encapsulating suit with pressure-demand supplied air respiratory protection. May include other components such as hard hat and safety toe boots, as appropriate.
- Level B – Chemical resistant suit with pressure-demand supplied air respiratory protection. May include other components such as hard hat and safety toe boots, as appropriate.
- Level C – Clothing appropriate for potential dermal exposure in addition to the clothing specified for level D and air purifying respiratory protection.
- Level D – Long pants, shirt with sleeves, ANSI-rated safety glasses, safety-toe shoes or boots, and hard hat.

PPE – Clothing, gloves, and other protective items to be worn/used by individuals to minimize potential exposure to hazards, including safety glasses, hard hats, safety-toed boots or shoes, work gloves, chemical protective gloves, chemical protective clothing, respiratory protection, and hearing protection.

### **4.0 HEALTH AND SAFETY WARNINGS**

Failure to follow this procedure can result in injuries or illnesses.

### **5.0 CAUTIONS**

This section is not applicable to this procedure.

### **6.0 INTERFERENCES**

This section is not applicable to this procedure.

### **7.0 PERSONNEL QUALIFICATIONS/RESPONSIBILITIES**

Corporate officers, managers, and project-level staff should all be role models for safety. Other responsibilities are summarized below.

#### **7.1 PRESIDENT, CHIEF OPERATING OFFICER, DIVISIONAL VICE PRESIDENTS**

- Provide adequate resources to enable safe work.
- Maintain a general awareness of procedural requirements.

<b>Personal Protective Equipment</b>	<b>Document No.: HGL SOP 201.506</b>
	<b>Process Category: Health and Safety</b>
	<b>Revision No.: 10</b>
	<b>Last Review Date: December 22, 2022</b>
	<b>Next Review Date: December 2023</b>

## **7.2 CORPORATE HEALTH AND SAFETY DIRECTOR (CHSD)**

- Approve this procedure and subsequent revisions.
- Revise this procedure as needed to address regulatory or other changes.
- Verify the implementation of this procedure.

## **7.3 OFFICE MANAGERS**

- Maintain a general awareness of the applicable portions of these requirements.
- Ensure that PPE is provided and used, as needed, for work conducted in offices and workplaces controlled by the offices.

## **7.4 SUPERVISORS AND PROJECT MANAGERS**

- Prepare or review and approve hazard evaluations for work under their purview.
- Provide adequate resources to control hazards and acquire PPE, as necessary.
- Enforce the requirements of applicable hazard evaluations, including PPE use.

## **7.5 OFFICE HEALTH AND SAFETY OFFICERS**

- Prepare hazard evaluations and specify PPE, as requested.
- Verify that hazard controls, including PPE, are adequate and effective by performing inspections, air monitoring or sampling, and other evaluations.
- Take steps to correct inadequate hazard controls by stopping or modifying the task or modifying PPE.
- Notify the responsible manager and CHSD if the planned hazard controls are found to be inadequate.

## **7.6 SITE SAFETY AND HEALTH OFFICER**

- Read and understand the site-specific health and safety plan, or Accident Prevention Plan. Circulate the project safety plan(s) to workers and ensure that they read and sign documenting their review.
- Lead and document daily tailgate safety meetings to discuss the day's work, review potential hazards, required PPE, and discuss planned risk mitigation efforts.
- Monitor site work to verify that PPE is being used as planned and that it is effective at controlling hazards.
- Maintain adequate quantities of expendable PPE.
- Report unsafe acts and conditions to the CHSD and stop work or require control of the hazards. Verify successful implementation of improvement actions.

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## 7.7 ALL HGL PERSONNEL

- Use the required hazard controls, including PPE.
- Understand how to use and care for PPE.
- Stop or question work that does not meet applicable requirements or that may be unsafe.

## 8.0 EQUIPMENT AND SUPPLIES

Equipment and supplies required for this procedure include various types of PPE.

## 9.0 PROCEDURAL STEPS

HGL initiates engineering and work practice controls to minimize the potential for employee exposure to chemical, biological, physical, or mechanical hazards. If potentially harmful hazards cannot be feasibly removed from the work environment or controlled by administrative means, and if PPE will provide adequate hazard control, HGL provides employees with appropriate PPE and requires its use. Hazard evaluations and selection of PPE will be conducted and documented as specified in Health and Safety (H&S) Procedure 2: *Hazard Evaluation*, the Preliminary Hazard Assessment Checklist (HGL SOP 201.506.F01), or other appropriate documentation.<sup>1</sup>

### 9.1 PPE SELECTION

PPE should be selected based on the following criteria:

- Planned work tasks;
- Potential for exposure to physical agents such as traffic; heavy equipment; impact; puncture; falls; or electrical, mechanical, hydraulic, pneumatic, thermal, nuclear, or non-ionizing radiation energy;
- Environmental hazards such as temperature, stinging or biting insects and spiders, poisonous snakes, allergenic plants, pathogenic organisms in bird and rodent droppings, and harmful mold spores;
- Toxic materials, physical agents, waste contaminants, or process chemicals known to be present;
- Concentrations of hazardous components in waste media or process chemicals that may be encountered during implementation of a task;
- Toxicology and probable routes of entry into the body;
- Breakthrough times and permeability of PPE material; and
- Known or expected airborne concentrations.

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<sup>1</sup> When updated, H&S Procedure 2 will be renumbered as HGL SOP 201.502.



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## 9.2 PPE INSPECTION

Employees should inspect PPE before use and periodically while in use. Visually inspect PPE for damage, imperfect seams, uneven coatings, tears, and malfunctioning closures. If a defect is observed in PPE, replace the defective item.

## 9.3 PPE DECONTAMINATION

Implement a decontamination process (see 29 CFR 1910.120 [k]) if PPE will become contaminated with hazardous substances sufficient to pose a risk to personnel during removal of the PPE or pose a risk of transporting hazardous quantities of material off site. The decontamination process must address the following:

- **Type of Contaminant.** The extent of personnel decontamination is a function of the amount of the contaminant, its toxicity, and its interaction with the PPE articles.
- **Amount of Contamination.** Gross contamination increases the probability of personal contact or the degradation and permeation.
- **Type and Level of PPE.** Clothing variations and different levels of protection may require adding or deleting stations to the decontamination line.
- **Work Function.** Employees performing tasks that will not bring them into contact with contaminants may not need to have their garments decontaminated, while others in the Exclusion Zone, with potential direct contact with the hazardous material, will require a more thorough decontamination.
- **Location of the Contamination.** Contamination on the upper areas of protective clothing poses a greater risk to workers. Volatile compounds may generate a hazardous breathing concentration for both the worker and the decontamination personnel.

Confine decontamination activities to a designated area within the Contamination Reduction Zone, known as the Contamination Reduction Corridor. The Corridor controls access into and out of the Exclusion Zone and confines decontamination activities to a limited area. The size of the Corridor varies depending on the number of stations in the decontamination procedure, overall dimensions of the work control zones, and the amount of space available at the site.

Within the Corridor, set aside distinct areas for decontamination of personnel, portable field equipment, discarded clothing, and other items, as needed. Step-by-step procedures for decontamination of personnel wearing PPE Levels A, B and C are found in Attachment 4.

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## 9.4 TRAINING

HGL provides training for personnel provided with PPE in its use, care, capabilities, and limitations prior to using it in a hazardous work environment. At a minimum, training must cover the following:

- When PPE must be worn.
- What PPE is necessary and the selection criteria used for this determination.
- The operation of the selected PPE, including capabilities and limitations.
- The nature of the hazards and the consequences of not using the PPE.
- Donning, doffing, checking, fitting, and using PPE.
- The user's responsibility for inspection, decontamination, maintenance, and repair of PPE.
- Limitations of the PPE.
- Useful life and disposal of the PPE.
- How to recognize PPE failure.
- Emergency procedures and self-rescue in the event of PPE failure.

## 10.0 DATA AND RECORDS MANAGEMENT

Documentation generated as a result of this procedure must be collected and maintained in accordance with the document control requirements of the HGL Quality Manual.

## 11.0 QUALITY CONTROL AND QUALITY ASSURANCE

The responsible manager or site safety and health officer must perform sufficient due diligence to verify that work meets requirements.

## 12.0 REFERENCES

ANSI/ISEA Z87.1-2020, American National Standard for Occupational and Educational Personal Eye and Face Protection Devices

Occupational Safety and Health Administration (OSHA), Personal Protective Equipment, 29 CFR 1910, Subpart I.

OSHA, Eye and Face Protection, 29 CFR 1910.133.

OSHA, Occupational Head Protection, 29 CFR 1910.135.

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OSHA, Occupational Foot Protection, 29 CFR 1910.136.

U.S. Army Corps of Engineers (USACE), 2014 Engineer Manual (EM) 385-1-1, Safety and Health Requirements Manual.

### 13.0 REVISION HISTORY

Revision Number	Revision Date	Reasons for Revision
10	December 22, 2022	Initial CMS Library Version

### ATTACHMENTS

Attachment 1 - PPE Types, Specifications, Capabilities, and Limitations

Attachment 2 - PPE Ensembles For Hazardous Waste Operations Levels of Protection for Levels A Through D

Attachment 3 - Example BTEX Airborne Action Level Guidance for Selection of PPE Ensembles

Attachment 4 - Minimum and Maximum Decontamination Stations and Equipment for PPE Ensemble Levels A, B, AND C

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**ATTACHMENT 1**  
**PPE TYPES, SPECIFICATIONS, CAPABILITIES, AND LIMITATIONS**

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# ATTACHMENT 1

## PPE TYPES, SPECIFICATIONS, CAPABILITIES, AND LIMITATIONS

This attachment provides information on the technical specifications, capabilities, and limitations of various types of PPE typically used by HGL employees. This information is by no means exhaustive and may become dated by new research findings and product development. The project or task evaluation in the Preliminary Hazard Assessment Checklist (HGL SOP 201.506.F01), EPA's *Guidelines for the Selection of Chemical Protective Clothing* (Ref. 1), and the *Quick Selection Guide to Chemical Protective Clothing* (Ref. 2), are useful in selecting appropriate protective clothing. If you have any questions regarding the applicability of an item of PPE, contact your Health & Safety Coordinator or the Corporate Health & Safety Director (CHSD).

### 1.0 PROTECTIVE CLOTHING

Protective clothing is a type of PPE that provides protection against hazards including but not limited to the following, hazardous chemicals or waste, impacts, sharp points or edges, burrs, abrasion, pinching, extreme cold, thermal radiation, fire, and arc flash. (Note: Specific guidance on selection of gloves is provided in Section 5.0, Hand Protection.) Protective clothing is made of various fabrics and fabric treatments that impart the desired physical and chemical resistive properties.

Protective clothing comes in various sizes. The larger sizes (large, XL, or XXL) are preferable during cold weather because they allow the garment to be worn over layered winter clothing. Pay attention to project team members who have special sizing requirements. While protective clothing is useful to protect personal clothing from becoming soiled, there may be hazards involved in using protective garments. Therefore, using unnecessary PPE is discouraged.

Protective clothing has two critical components, the fabric and the tailoring. The fabric imparts the physical and chemical properties of the garment. Fabric manufacturers conduct tests using ASTM International, American National Standards Institute (ANSI), and National Fire Protection Association (NFPA) protocols to determine and rate the protective characteristics of their products.

Protective clothing of any type has various performance characteristics and criteria as summarized below. Evaluate the physical performance characteristics of each garment under consideration. These performance characteristics may increase the hazards associated with using the garment. The cost of certain types of protective clothing and the effect of the clothing on employee productivity are secondary but valid concerns.

- **Heat transfer** – A garment with a low rate of heat transfer increases heat stress of the person wearing it.
- **Durability** – Durability is the degree to which protective clothing resists tears, punctures, abrasions, and repeated decontamination.
- **Flexibility** – The garment should be flexible to allow mobility.

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- **Temperature effects** – The garment should be able to maintain its protective integrity and flexibility in the temperature ranges expected at the work site.
- **Decontamination** – If reusable protective clothing cannot be decontaminated easily, use a disposable garment with the same resistive properties.
- **Compatibility** – The selected garment should not make it difficult or impossible to use other required protective equipment (e.g., a hard hat).
- **Lifetime** – Lifetime is determined by the length of time a reusable garment can resist aging, especially under severe conditions.

## 1.1 CHEMICAL PROTECTIVE CLOTHING

Chemical protective clothing (CPC) is made from protective fabrics. Common failure points are the seams, stitching, and zippers. Chemicals that may not be able to permeate through the fabric may easily pass through split seams, stitch holes, or zipper teeth. Seams should be sewn, heat sealed, or taped. Zippers should have overlapping closures or be taped if there is a potential for splash with hazardous liquids.

CPC shall be selected to protect employees from occupational hazards while considering the hazards presented by the garments themselves. When selecting protective clothing,

- Consider the hazardous chemicals present, the task(s) to be performed, and the ambient site conditions;
- Match the physical and chemical resistance characteristics of the garment against the requirements and limitations of the chemicals and conditions; and
- Choose the garment with the widest range of protection for a site that has a variety of chemical hazards.

Multiple layers of protection may be needed when more than one contaminant is present or when the hazards are unknown. Disposable boots, gloves, and splash suits are used to provide an extra layer of protection.

## 1.2 REPETITIVE USE RAINWEAR/SPLASH PROTECTION

Splash protection and rainwear garments are used alone or in combination with CPC to provide extra protection against chemical splashes or prevent exposure to inclement weather and incidental mud. When choosing these garments consider the following:

- Whether the garment will be subject to limited use or continuous exposure,
- What the specific physical or chemical hazards will be, and
- What are the flexibility and thermal requirements.



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This type of protective clothing can be made of the following materials:

- ***Vinyl*** – Extremely lightweight PVC material that offers a reasonable initial barrier to liquid penetration. Good flexibility through changing temperatures. Best for short term use with water based liquids, mild acids, solvents, oils and salts.
- ***PVC-coated fabrics*** – A broad class of synthetic thermoplastic polymers that protects against many liquids and chemicals. The degree of protection varies depending upon the specific formulation and the thickness of the coating. Resists salts, alkalis, oils, ketones, aldehydes, alcohols, some acids, and organic esters.
- ***Rubber-coated fabrics*** – A very flexible heavy fabric for heavy duty use in extreme cold or heat. Abrasion and tear resistant and offers general protection against solvents and chemicals.
- ***Neoprene-coated fabrics*** – A very flexible heavy fabric for heavy duty use in extreme cold or heat. Abrasion and tear resistant and offers general protection against acids, hydrocarbons, and oils.
- ***Nitrile-coated fabrics*** – Thin gauge material resistant to cuts and punctures. Resistant to grease, acids, and solvents.
- ***Polyurethane-coated fabrics*** – Lightweight materials that shed liquids easily. Breathability depends upon thickness of coating and material additives. Good abrasion resistance. General protection against many liquids.

### 1.3 HEAT AND FLAME PROTECTIVE CLOTHING

Flame and flash protective clothing is required when personnel are potentially exposed to extreme thermal radiation, fire, heated metal, and metal particles from welding or oxy-fuel cutting, arc flash, or pyrophoric materials. Flame and flash protective clothing may be made of leather, natural fibers such as treated cotton, or synthetic fibers such as Nomex. Some products also have an aluminized outer layer to reflect heat. Clothing made of synthetic fabric that is not fire and heat resistant, such as nylon, polyester, or acetate, must not be worn as outer or inner layers when heat or flame is a potential hazard.

### 1.4 LIMITED USE GENERAL PROTECTION CLOTHING

This type of protective clothing is an economical choice for protection against limited hazards such as lead and asbestos dusts, radionuclides, light chemical splashes, and biohazards. When choosing these garments consider the following:

- Whether the garment will stand up to the rigors of the work environment,
- The degree of protection offered by the garment against the contaminants (and concentrations) present, and
- Flexibility and thermal requirements.

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The following are common types of limited use protective clothing:

- **Tyvek** – A registered trademark of the E.I. DuPont Company, Tyvek is a spun-bonded olefin fiber that delivers high tear resistance and a high level of protection against particulate materials. Available in a variety of styles and colors.
- **Kleenguard** – A registered trademark of the Kimberly Clark Corporation, Kleenguard is a polypropylene fabric, usually layered, that effectively repels many liquids, oils, and greases and that allows air to pass through to reduce the potential for heat stress. Available in a variety of styles and colors.

## 2.0 HEAD PROTECTION

Head protection must be worn when working in areas where there is danger of head injury from overhead impacts, falling and flying objects, electrical shock and burns, and contact with hazardous chemicals.

Hard hats must be worn on all construction sites, in the immediate vicinity of drilling operations, in industrial facilities where there are overhead activities, during confined space entry tasks, and in posted hard hat areas. Hard hat suspensions must always be in place, properly adjusted and free from defects. The hard hat selected shall be compatible with any other type of PPE in use, including suits, respirators, face shields, and hearing protection. Hard hat equipment is summarized below:

- **Hard hats** – Hard hats that comply with ANSI Z89.1-1986, Class A and B, and are SEI certified, provide appropriate head protection from overhead impact and electrical hazards. Bump caps are not acceptable. Employees must not deface, drill holes, or otherwise tamper with hard hats in any way that might compromise their effectiveness.
- **Chin straps** – Employees must use chin straps when tasks involve strenuous bending, downward movements or in any circumstance, for instance, confined space entry, that may result in the hard hat falling off the employee's head.
- **Liners** – Hard hat liners can be worn inside the hard hat to provide thermal protection during cold weather.
- **Hoods** – Hoods protect the head and neck from hazardous chemicals. Hoods can be used to protect the hair when wearing respirators.
- **Visitor's hard hats** – Project offices and trailers should be equipped with an adequate number of spare hard hats for the use of visitors to the project site.

## 2.1 INSPECTION AND MAINTENANCE

Hard hats and components must be inspected before each use. Cracking, signs of excessive wear, or frayed webbing is cause for replacement. Contact Saf-T-Gard (see Section 8.0) for parts or hard hat replacement.

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### **3.0 EYE AND FACE PROTECTION**

Appropriate eye and face protection must be worn by employees and visitors when exposed to hazards from flying particles, molten metal, liquid chemicals, acids or caustic liquids, chemical gases, or vapors, or potentially injurious light radiation. Employees shall use eye protection that provides side protection when there is a hazard from flying objects. Project offices and trailers should be equipped with an adequate number of spare safety glasses and goggles for the use of visitors to the project site. In the presence of radiant energy, filter lenses will be provided based on the guidance provided in Table 1

Employees who wear prescription lenses while engaged in operations involving eye hazards shall wear eye protection that incorporates the prescription in its design or shall wear eye protection that can be worn over the prescription lenses without disturbing the proper position of the prescription lenses or the protective lenses. Contact lenses should not be worn in the presence of significant particulate, chemical, or gaseous eye hazards.

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**Table 1. Filter Lenses for Protection against Radiant Energy**

<b>Operations</b>	<b>Electrode Size 1/32 in.</b>	<b>Arc Current</b>	<b>Minimum (*) Protective Shade</b>
Shielded metal arc welding	Less than 3	Less than 60	7
	3-5	60-160	8
	5-8	160-250	10
	More than 8	250-550	11
Gas metal arc welding and flux cored arc welding		less than 60	7
		60-160	10
		160-250	10
		250-500	10
Gas Tungsten arc welding		less than 50	8
		50-150	8
		150-500	10
Air carbon Arc cutting	(Light)	less than 500	10
	(Heavy)	500-1,000	11
Plasma arc welding		less than 20 ...	6
		20-100	8
		100-400	10
		400-800	11
Plasma arc cutting	(light) (**)	less than 300	8
	(medium) (**)	300-400	9
	(heavy) (**)	400-800	10
Torch brazing			3
Torch soldering			2
Carbon arc welding			14
<b>Filter Lenses for Protection against Radiant Energy</b>			
<b>Operations</b>	<b>Plate thickness in inches</b>	<b>Plate thickness in mm</b>	<b>Minimum (*) Protective Shade</b>
<b>Gas Welding:</b>			
Light	Under 1/8	Under 3.2	4
Medium	1/8 to 1/2	3.2 to 12.7	5
Heavy	Over 1/2	Over 12.7	6
<b>Oxygen Cutting:</b>			
Light	Under 1	Under 25	3
Medium	1 to 6	25 to 150	4
Heavy	Over 6	Over 150	5

\*As a rule of thumb, start with a shade that is too dark to see the weld zone. Then go to a lighter shade that gives sufficient view of the weld zone without going below the minimum. In oxyfuel gas welding or cutting where the torch produces a high yellow light, it is desirable to use a filter lens that absorbs the yellow or sodium line in the visible light of the (spectrum) operation.

\*\*These values apply where the actual arc is clearly seen. Experience has shown that lighter filters may be used when the arc is hidden by the work piece.

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Eye protection equipment and components are summarized below:

- **Safety glasses with side shields** – Safety glasses with full side shields (prescription to 20/40 vision if required) complying with ANSI Z87.1-2020 shall be worn during drilling operations, and when working near impact tools or equipment. The glasses protect the eyes from large particles
- **Goggles** – Goggles complying with ANSI Z87.1-2020 are available in two types: chemical splash (indirectly vented) and non-vented. Both are available with polycarbonate lenses to protect the eyes from impact injury, chemical splashes, large particles, and projectiles. Non-vented goggles provide additional protection against vapors and gases. Goggles may be worn over prescription eyeglasses.
- **Face shields** – Face shields complying with ANSI Z87.1-2020 and at least 8 inches long protect the face and neck from chemical splashes but do not protect against projectiles. Face shields provide only limited eye protection. Goggles or safety glasses should be worn in conjunction with face shields. Face shields that attach directly to the hard hat are sealed to prevent overhead splashes from running down the inside of the face shield.
- **Full-face respirators** – Because the lens of the full-face respirator is constructed of polycarbonate material meeting the impact resistance standards specified in 30 CFR 11, additional eye and face protection is not required when wearing a full-face respirator.
- **Optical inserts** – Spectacle kits are provided by HGL to users of full-face respiratory protection who wear corrective eye wear. Each eligible employee may take a spectacle kit to their personal eyewear provider to have prescription lens ground and fitted to the kit. The inserts should correct visual acuity to at least 20/40. The reimbursement rates for safety related prescription eyewear and respirator lens inserts are presented in HGL POL 505.160: *Personal Protective Equipment*.

#### 4.0 HEARING PROTECTION

Hearing protection shall be worn by employees who are exposed to noise levels in excess of those defined in OSHA standard 29 CFR 1910.95. See the section on Hearing Conservation for additional information.

Two basic types of hearing protectors are available: ear plugs and earmuffs. The use of earplugs shall be considered with caution because earplugs can introduce chemical contaminants into the ear. The selection of hearing protectors shall be based on the attenuation requirements of 29 CFR 1910.95, and on the comfort of the wearer. Employees may require hearing protection when working near drilling and heavy equipment operations, high impact tools, or when working near generators, air compressors or other noisy machinery. Earmuffs are not a stock item since they need to be sized to the individual. Hearing protection must have a noise reduction rating of 30 dB or better unless equipment or location specific monitoring indicates that a lower rating will provide adequate protection.

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## 5.0 HAND PROTECTION

Employees shall use appropriate hand protection when exposed to hazards such as those from skin absorption of harmful substances; severe cuts and lacerations; severe abrasions; punctures; chemical burns; thermal burns; and harmful temperature extremes. A qualified employee shall select gloves designed to provide protection against specific chemicals and physical demands of the site. Use flexibility, resistance to tearing and puncturing, and resistance to specific chemicals as criteria for selection. The qualified employee shall consider the glove's thickness and cuff length. Thick gloves with long cuffs (gauntlet type) provide more protection than thin, short gloves. However, the material should not be so thick that it interferes with the dexterity required by the task.

Disposable nitrile (surgical) gloves are a general purpose disposable inner glove and are routinely discarded after each use. Permeation resistant outer gloves such as Viton and butyl rubber are selected based on the chemicals involved. Neoprene is a general purpose outer glove. Cotton liners are used inside chemical resistant gloves to provide warmth during cold weather, or to absorb sweat during summer.

If heavy duty chemical resistant gloves are not available wear heavy leather gloves or disposable studded cotton gloves over chemical resistant gloves to provide better gripping during manual labor.

Combinations or layers of chemical resistant gloves are used to protect against multiple chemical contaminants. For example, a mixture of acids, caustics, and aromatic hydrocarbons may require the use of outer neoprene gloves for protection against acids and caustics, and inner PVA gloves for protection against the aromatics.

Gloves are available in the following materials:

- ***Natural rubber (polyisoprene)*** – Resists degradation by alcohols and caustics. Not recommended for organics.
- ***Butyl rubber (synthetic rubber)*** – Resists degradation by many contaminants including ketones and esters. Especially resistant to permeation by gases and water vapors. Not recommended for halogenated hydrocarbons and petroleum compounds.
- ***Polyvinyl Alcohol (PVA)*** – Resists degradation and permeation by aromatic and chlorinated hydrocarbons and petroleum compounds. Not recommended for water based solutions, acids, bases, ethers and esters.
- ***Neoprene (chloroprene)*** – Resists degradation by caustics, acids, alcohols, and oils. Not recommended for halogenated and aromatic hydrocarbons, PCBs and ketones.
- ***Nitrile (acrylonitrile polymers / butadiene)*** – Resists degradation by petroleum compounds, gasoline, alcohols, acids, caustics, and peroxides. Not recommended for

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aromatic or halogenated hydrocarbons, amines, ketones, and esters. Can be used for some chlorinated compounds.

- ***Viton*** – Resists degradation and permeation by aromatic and chlorinated hydrocarbons and petroleum compounds, oxidizers, and acids. Not recommended for aldehydes, esters, ketones, amines, acetone, or water based solutions.
- ***Silver shield*** – Resists degradation and permeation by aromatic and chlorinated hydrocarbons and petroleum compounds, oxidizers, acids, and most water based solutions. Not recommended for amides.

## 6.0 FOOT PROTECTION

Footwear worn at field sites where there is a potential for loads heavier than 35 pounds to fall on employees’ feet must comply with the ANSI Z41-1999. Protective footwear protects the foot from crushing, puncture, electrical, and chemical hazards. Protective footwear options are summarized below:

- ***Leather safety boots with steel or composite toe*** – Resists punctures and crushing. Employees are responsible for purchasing their own boots and this expense may be reimbursed per corporate policy. These boots are generally not chemical or water resistant without the use of disposable latex/butyl/“Tyvek” boot covers or neoprene overboots.
- ***Overboots*** – Made of PVC, latex, butyl, natural rubber, polyethylene, neoprene, or vinyl provide protection from a wide range of chemicals. Some overboots have an integrated steel or composite toe and puncture resistant insert.
- ***Waders*** – Waders are waterproof garments with boots and coveralls that protect the lower body (up to the hip/chest) from water immersion. Employees sampling water from ponds, streams or sewers at locations that are no more than waist deep are to wear waders and personal flotation devices. Belts must be worn around the waist and on the outside of waders to reduce water intrusion if water seeps through the open chest area during a fall or overtop situation.
- ***Hip boots*** – Hip boots are useful for water sampling or sewer inspections when the water level is below the thighs. Hip boots are less expensive and provide more mobility than chest high waders.

## 7.0 ANCILLARY PPE

Ancillary PPE listed below, is used for protection against specific health and safety hazards.

- ***Harnesses, lanyards, and lifelines*** – Body harnesses, lanyards, and lifelines are used to prevent, or control falls from elevated areas or into water, and to make possible the emergency retrieval of employees who have entered confined spaces.

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- **Cooling vests** – Cooling vests are used to remove excess heat generated by worker activity, protective clothing, or extremely hot environments. The most commonly used units resemble vests with cold pack pockets, and are used when personnel are wearing level B or C protection in warm weather, usually above 80°F. To use the vests, ice making equipment and cold pack storage must be available on site. The availability of this equipment must be addressed in planning for the work.
- **Floatation gear** – Floatation gear such as life jackets, work vests and cold water survival suits that meet U.S. Coast Guard (USGS) standards (46 CFR Part 160) shall be worn when working in or on surface waters, e.g., ponds, lagoons, and streams, at chest high depths (4 feet) or greater. Floatation gear is commonly worn over protective clothing. Floatation vests add bulk to the wearer and may restrict mobility. Floatation vests may be difficult to decontaminate. Inflatable personal flotation devices (PFDs) are available that use a hydrostatic inflator to protect against accidental inflation due to high humidity, rain, or a splash.
- **Reflectorized vests** – Reflectorized vests are to be worn by all employees when working near vehicular traffic, around heavy equipment and in situations where visibility is essential. Class 3 vests will be worn if near traffic moving at 30 mph or greater. Class 2 vests can be used if near traffic moving at less than 30 mph.
- **Tool pouches and belts** – Equipment pouches and belts may be worn by site personnel who use portable equipment and tools during field activities. Pouches and belts are worn around the waist, outside of the protective clothing.
- **Infection control kits** – An infection control kit or bloodborne pathogen kit, shall be available in each office, field office, field trailer, and field vehicle for use in the event of an injury resulting in contact with blood or other bodily fluids. The kit will include at least safety glasses, protective gloves, and CPR mouth barrier.
- **Protective leggings** – Leggings (Gaiters) are worn to protect against snakebites or other hazards to the lower extremities.
- **Survival suits** – Mustang Flotation Coverall provides flotation and hypothermia protection when working on water at temperatures less than 40°F.

## 8.0 SAF-T-GARD ORDERING INSTRUCTIONS

HGL accounts are set up for ordering safety equipment and supplies at Saf-T-Gard. Contact Edie Scala-Hampson with questions about ordering from Saf-T-Gard.



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## 9.0 REFERENCES

U.S. Environmental Protection Agency (EPA), 1987. *Guidelines for the Selection of Chemical Protective Clothing*.

Forsberg, K. and S.Z. Mansdorf, 1989. *Quick Selection Guide to Chemical Protective Clothing*. Van Nostrum Reinhold, New York.

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**ATTACHMENT 2**

**PPE ENSEMBLES FOR HAZARDOUS WASTE OPERATIONS  
LEVELS OF PROTECTION FOR LEVELS A THROUGH D**

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## ATTACHMENT 2

### PPE ENSEMBLES FOR HAZARDOUS WASTE OPERATIONS LEVELS OF PROTECTION FOR LEVELS A THROUGH D

Four distinct levels of protection have been defined by EPA: A, B, C, and D. Each provides protection against varying degrees of respiratory, dermal, and safety hazards. A specific level of protection shall be selected based on the following:

- The type, concentration, and toxicity of airborne contaminants, and
- The potential for personal exposures, liquid splashes, or direct contact with hazardous materials in relation to site tasks/activities.

Levels A and B specify the same respiratory protection (self-contained or airline breathing apparatus), but Level A includes specific dermal protection (fully encapsulating suit). Levels B and C generally specify the same dermal protection (chemical resistant coveralls or partially encapsulating suit), but Level B includes a higher degree of respiratory protection.

Each standard level of protection may be modified in the Site Safety and Health Plan (SSHP) to account for varying degrees of respiratory and dermal hazard. For instance, a Level C ensemble may be modified for a task involving surface soil sampling for a semivolatile compound in wet conditions by making the use of the respirator contingent upon air monitoring results but mandating full body protective clothing for dermal exposure control. Modified Level D may specify use of gloves to prevent contact with potentially contaminated sample media, or to prevent cross contamination of samples.

The four levels of protection that may be used by HGL personnel are described below, beginning with Level D, which is the most common level of protection for HGL worksites (with site-specific modifications). Selection criteria are presented for general guidance only: protection shall be tailored to specific site contaminants and conditions.

#### 1.0 LEVEL D AND MODIFIED LEVEL D PROTECTION

Level D, essentially an ordinary work uniform ensemble, is used when there is minimal potential for exposure to hazardous materials or waste on site. Modified Level D consists of the general PPE required for Level D, plus additional PPE specified for site-specific hazards or potential hazards.

Level D consists of a work uniform providing minimal protection constitutes. Level D shall not be used in a hazardous atmosphere or environment. Level D will be used only when there is no indication of a hazardous atmosphere and the work tasks have no potential for splashes, immersion, or other bodily contact with hazardous substances. PPE at Level D consists of the following:

- Coveralls (cotton or “Tyvek™”),
- Work boots with protective steel or composite toe caps, and
- Safety glasses with side shields.

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Selection Criteria: Use Level D or Modified Level D in the following situations:

- Sites where the SSHP writer and reviewer have made a reasonable determination that exposure to hazardous materials is unlikely. This may include sites where minimal or no sampling is performed, or where HGL is conducting oversight of another contractor or subcontractor's work.
- Sites where there is limited potential for exposure to hazardous materials, but procedures for monitoring on-site air and upgrading the protection level or evacuating the site have been established and are being followed.
- In situations where the possibility of a hazardous atmosphere exists, Level D/modified Level D is permissible when prescribed by the SSHP if monitoring indicates the continued absence of a hazardous atmosphere. When hazardous atmospheres are detected, workers in Level D shall upgrade their protection in accordance with instructions in the SSHP.

Additional equipment that may be required for a Level D entry such as the following:

- Inner and outer gloves,
- Hardhat,
- Hearing protection,
- Emergency escape respirator (readily available on site),
- Air provided respirator (APR) (readily available on site), and
- Aprons, boot covers.

Additional PPE that may be required at Modified Level D consists of the following:

- Tyvek™ coveralls,
- Work boots with steel or composite toe,
- Safety glasses with side shields,
- Splash proof goggles,
- Face shield,
- Inner and outer gloves,
- Hard hat,
- Hearing protection,
- Emergency escape respirator (readily available on site), and
- Aprons, boot covers.

## 2.0 LEVEL C PROTECTION

Level C protection is composed of dermal protection and an APR. Level C shall be used only when the types and concentrations of airborne substances are known, when the criteria for using APRs are met, and when hazardous skin exposure is unlikely. Use of this level is limited by the

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restrictions placed on the use of APRs in 29 CFR 1910.134 and ANSI Z88.2-2015. Air contaminants shall be measured and compared to action levels specified in the SSHP. Level C may be sufficiently cumbersome to aggravate heat stress.

Selection Criteria: Use Level C when the type and concentration of airborne contaminants are known, an approved respirator cartridge/canister is available that will remove the contaminants, and the following criteria for use of APRs are met:

- Oxygen content is equal to or greater than 19.5 percent.
- Concentrations do not exceed the NIOSH-approved use levels for the respirator and cartridge/canister.
- Contaminants have obvious warning properties (e.g., contaminant can be detected by odor, taste, or irritation at concentrations below its exposure limit).
- Atmospheres are not Immediately Dangerous to Life and Health (IDLH).
- Airborne contaminants are known and will be monitored throughout site activities.
- Site activities will not generate high airborne concentrations or liquid splashes or other means of contact with substances highly toxic to the skin.

PPE at Level C consists of the following:

- Full-face APR or full-face powered APR with cartridge or canister appropriate for the airborne contaminant present and made by the APR manufacturer. Cartridges must not be reused.
- Clothing appropriate for potential dermal exposure and at least as protective as Level D.
- Work boot with neoprene rubber sole, and steel or composite toe.

Additional equipment that may be required for a Level C entry is as follows:

- Coveralls,
- Disposable chemical-resistant latex or butyl booties,
- Cotton long underwear,
- Hard hat,
- Hearing protection, and
- Two-way radio communications.

### **3.0 LEVEL B PROTECTION**

Level B shall be selected when the highest level of respiratory protection is required but a degree of dermal protection lower than that afforded by Level A is acceptable. The specific type of dermal protection may vary from site to site. Level B is generally used in situations where respiratory

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hazards are difficult to evaluate. Level B protection is cumbersome and may cause heat stress. Level B protection shall be the minimum used during initial response, reconnaissance or when exposure to CWM is possible except when the respiratory hazard has been evaluated and it is determined that a lower level of respiratory protection is acceptable.

Selection Criteria: Use Level B under the following conditions:

- The type and concentration of airborne contaminants have been identified as those requiring a high level of respiratory protection, but a lower level of skin protection (e.g., when specific airborne substances, present in IDLH concentrations, do not present a severe skin contact/absorption hazard). Also when atmospheres do not meet the criteria that would permit use of APRs.
- Atmospheres contain less than 19.5 percent oxygen.
- Site activities generate high concentrations of substances highly toxic by skin absorption but skin contact with toxic substances is not likely.
- When the air contaminants of concern do not have adequate warning properties of breakthrough or there are no approved filter cartridges for Level C respiratory protection.
- When significant time will be spent in areas with contaminant concentrations at or above occupational exposure limits.

PPE at Level B consists of the following:

- Pressure-demand, full-face, self-contained breathing apparatus (SCBA) or dual-purpose breathing apparatus (DPBA);
- Chemical resistant clothing, including disposable “Tyvek™” coveralls, with or without various coatings, as well as butyl rubber aprons, or neoprene, acid resistant, full body coveralls;
- Inner chemical resistant gloves (latex or vinyl surgical type);
- Outer chemical resistant gloves (butyl, neoprene, Viton, or other appropriate material);
- Neoprene rubber boots with steel or composite toe; and
- Emergency escape bottle with 5 to 15 minute air supply.



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The following additional equipment that may be required for a Level B entry:

- Cotton coveralls worn beneath CPC,
- Cotton long underwear,
- Disposable chemical resistant booties (latex/butyl),
- Hard hat,
- Hearing protection,
- Two-way radio communications, and
- Cooling vest/jacket.

#### **4.0 LEVEL A PROTECTION**

Level A shall be selected when the highest level of respiratory, skin, and eye protection is required due to the presence in the air of high concentrations of hazardous materials, or the presence of contaminants highly toxic to the skin. Level A is also used when the hazards are unknown, inadequately defined, or when Level B protection is not adequate.

Level A protection is extremely cumbersome and may be hazardous due to heat stress and decreased peripheral vision. Level A is generally appropriate in emergency response and rescue circumstances not normally performed by HGL personnel.

Selection Criteria: Use Level A under the following circumstances:

- Hazardous materials have been identified on site that require the highest level of respiratory, skin, and eye protection based on measured (or potentially) high concentrations of hazardous vapors, gases, or particulate atmospheres that are greater than levels determined to be IDLH.
- Site operations or tasks present a high potential for splashing of, contact with, or airborne exposure to substances highly toxic by skin absorption.
- Site operations or tasks to be conducted in confined or poorly ventilated areas where there is potential for encountering highly toxic substances.

PPE at Level A consists of the following:

- Pressure-demand, full-face, SCBA or a pressure-demand, supplied air respirator/SCBA combination (i.e., a DPBA),
- Fully encapsulating suit with intrinsic gloves, booties, and polycarbonate lens,
- Inner chemical resistant gloves (nitrile or vinyl surgical type), and
- Overboots of appropriate chemical-resistant materials with steel or composite toe. (The boots are worn over the intrinsic booties of the rubber suit, and the boots themselves may be covered by disposable booties.)

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Additional equipment that may be required for a Level A entry consists of the following:

- Cooling vest/jacket,
- Disposable chemical resistant booties (latex/butyl),
- Coveralls,
- Cotton long underwear,
- Hard hat,
- Hearing protection, and
- Two-way radio communications (rated intrinsically safe).

**ATTACHMENT 3**

**EXAMPLE BTEX AIRBORNE ACTION LEVEL GUIDANCE FOR  
SELECTION OF PPE ENSEMBLES**

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## ATTACHMENT 3

### EXAMPLE BTEX AIRBORNE ACTION LEVEL GUIDANCE FOR SELECTION OF PPE ENSEMBLES

#### Toxic Airborne Vapors or Gases

##### Uncharacterized Airborne Vapors or Gases

Level D Up to 10 ppm above background\*

Level C 10 to 50 ppm above background

Level B 50 ppm to 500 ppm above background

Level A 500 ppm to 1,000 ppm above background

##### Characterized Gases, Vapors, Particulates\*\*

Up to 50% of the specific PEL, or TLV

Up to 25 times the specific PEL, or TLV

UP to 500 times the specific PEL, or TLV

Up to 1,000 times the specific PEL, or TLV

\* Off-site “clean” air measurement.

\*\* Use mixture calculations (% allowed =  $\sum C_n$  PEL<sub>n</sub>) if more than one contaminant is present.

#### Oxygen

##### Concentration

< 19.5% O<sub>2</sub>

19.5% to 23.5% O<sub>2</sub>

> 23.5% O<sub>2</sub>

##### Action Taken

Leave area. Reenter only with supplied air respirators.

Work may continue. Investigate if not 21%.

Work must stop. Ventilate area before returning.

#### Flammability

##### Concentration

< 10% of LEL

> 10% LEL

##### Action Taken

Work may continue. Consider toxicity potential.

Work must stop. Ventilate area before returning.

#### Radiation

##### Intensity

< 0.5 mR/hr

< 1 mR/hr

5 mR/hr

##### Action Taken

Work may continue.

Work may continue. Notify Corporate Health and Safety and Corporate Health Physicist.

Radiation work zone. Work must stop.

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**ATTACHMENT 4**

**MINIMUM AND MAXIMUM DECONTAMINATION STATIONS AND  
EQUIPMENT FOR PPE ENSEMBLE LEVELS A, B, AND C**

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## ATTACHMENT 4

### MINIMUM AND MAXIMUM DECONTAMINATION STATIONS AND EQUIPMENT FOR PPE ENSEMBLE LEVELS A, B, AND C

#### 1.0 LEVEL A

#### 1.1 MAXIMUM DECONTAMINATION PROCEDURES FOR LEVEL A

##### 1.1.1 Equipment Worn

This decontamination procedure outlined is the **maximum** number of decontamination stations necessary for HGL workers wearing the following protective clothing and equipment:

- One piece, hooded chemical resistant suit which covers SCBA,
- SCBA or airline,
- Hard hat,
- Chemical resistant boots with steel or composite toe,
- Boot covers, and
- Inner and outer gloves.

##### 1.1.2 Decontamination Procedures

###### ***Station 1: Segregated Equipment Drop***

Deposit equipment used on site (tools, sampling devices and containers, monitoring instruments, radios, clipboards, etc.) on plastic drop cloths or in different containers with plastic liners. During hot weather operations, a cool down station may be set up within this area.

###### ***Station 2: Boot Cover and Glove Wash***

Scrub outer boot covers and gloves with decontamination solution or detergent/water.

###### ***Station 3: Boot Cover and Glove Rinse***

Rinse off decontamination solution from station 2 using copious amounts of water.

###### ***Station 4: Tape Removal***

Remove tape around boots and gloves and deposit in container with plastic liner.

###### ***Station 5: Boot Cover Removal***

Remove boot covers and deposit in container with plastic liner.

###### ***Station 6: Outer Glove Removal***

Remove outer gloves and deposit in container with plastic liner.

###### ***Station 7: Suit and Boot Wash***

Wash encapsulating suit and boots using scrub brush and decontamination solution or detergent/water. Repeat as many times as necessary.

###### ***Station 8: Suit and Boot***

Rinse off decontamination solution using water. Repeat as many times as necessary.

###### ***Station 9: Tank Change***

If an air tank change is desired, this is the last step in the decontamination procedure. Air tank is exchanged, new outer gloves and boot covers donned, and joints taped. Worker returns to duty.

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***Station 10: Safety Boot Removal***

Remove safety boots and deposit in container with plastic liner.

***Station 11: Fully Encapsulating Suit and Hard Hat Removal***

Fully encapsulated suit is removed with the assistance of a helper and laid out on a drop cloth or hung up. Hard hat is removed. A hot weather rest station may be set up within this area for personnel returning to site.

***Station 12: SCBA Backpack Removal***

While still wearing face piece, remove backpack and place on table. Disconnect hose from regulator valve and proceed to next station.

***Station 13: Inner Glove Wash***

Wash with decontamination solution that will not harm the skin. Repeat as often as necessary.

***Station 14: Inner Glove Rinse***

Rinse with water. Repeat as many times as necessary.

***Station 15: Face Piece Removal***

Remove face piece. Deposit in container with plastic liner. Avoid touching face with fingers.

***Station 16: Inner Glove Removal***

Remove inner gloves and deposit in container with liner.

***Station 17: Inner Clothing Removal***

Remove clothing and place in lined container. Do not wear inner clothing off site since there is a possibility that small amounts of contaminants might have been transferred in removing the fully encapsulating suit.

***Station 18: Field Wash***

Shower if highly toxic, skin-corrosive or skin-absorbable materials are known or suspected to be present. Wash hands and face if shower is not available.

***Station 19: Redress***

Put on clean clothes.

**1.2 MINIMUM DECONTAMINATION PROCEDURES FOR LEVEL A**

**1.2.1 Equipment Worn**

This decontamination procedure outlined is the **minimum** number of decontamination stations necessary for HGL workers wearing the following protective clothing and equipment:

- One piece, hooded chemical resistant suit which covers SCBA,
- SCBA or airline,
- Hard hat,
- Chemical resistant boots with steel or composite toe,
- Boot covers, and
- Inner and outer gloves.

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## 1.2.2 Decontamination Procedures

### ***Station 1: Equipment Drop***

Deposit equipment used on site (tools, sampling devices and containers, monitoring instruments, radios, clipboards, etc.) on plastic drop cloths. Segregation at the drop reduces the probability of cross contamination. During hot weather operations, cool down stations may be set up within this area.

### ***Station 2: Outer Garment, Boots, and Gloves Wash and Rinse***

Scrub outer boots, outer gloves and fully encapsulating suit with decontamination solution or detergent and water. Rinse off using copious amounts of water.

### ***Station 3: Outer Boot and Glove Removal***

Remove outer boots and gloves. Deposit in container with plastic liner.

### ***Station 4: Tank Change***

If worker leaves Exclusion Zone to change air tank, this is the last step in the decontamination procedure. Worker's air tank is exchanged, new outer gloves and boot covers donned, joints taped, and worker returns to duty.

### ***Station 5: Boots, Gloves, and Outer Garment Removal***

Boots, fully encapsulating suit, inner gloves removed and deposited in separate containers lined with plastic.

### ***Station 6: SCBA Removal***

SCBA backpack and face piece is removed (avoid touching face with fingers). SCBA deposited on plastic sheets.

### ***Station 7: Field Wash***

Hand and face are thoroughly washed. Shower as soon as possible.

## 2.0 LEVEL B

### 2.1 MAXIMUM DECONTAMINATION PROCEDURES FOR LEVEL B

#### 2.1.1 Equipment Worn

This decontamination procedure outlined is the **maximum** number of decontamination stations necessary for HGL workers wearing the following protective clothing and equipment:

- One piece, hooded chemical resistant splash suit,
- SCBA,
- Hard hat,
- Chemical resistant boots with steel or composite toe,
- Boot covers,
- Inner and outer gloves, and
- Taped joints between gloves, boots, and suit.

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## 2.1.2 Decontamination Procedures

### ***Station 1: Segregated Equipment Dump***

Deposit equipment used on the site (tools, sampling devices and containers, monitoring instruments, radios, clipboards, etc.) on plastic drop cloths or in different containers with plastic liners. Each piece of equipment may be contaminated to a different degree; therefore, segregation at the drop reduces the potential for contamination. Equipment needed:

- Containers of various sizes,
- Plastic liners, and
- Plastic drop cloths.

### ***Station 2: Suit, Boot Covers, and Glove Wash***

Thoroughly wash and scrub fully encapsulating suit, outer boot covers, and gloves with a decontamination solution. Equipment needed:

- Container (20- to 30-gallon),
- Decontamination solution,
- Detergent water solution, and
- Two or three long-handled, soft-bristled scrub brushes.

### ***Station 3: Suit, Boot Covers, and Glove Rinse***

Rinse off the decontamination solution from Station 2 using copious amounts of water. Repeat as many times as necessary. Equipment needed:

- Container (20- to 30-gallon),
- High pressure spray unit and splash guard,
- Water, and
- Two or three long-handled, soft-bristled scrub brushes.

### ***Station 4: Tape Removal***

Remove tape around boots and gloves and deposit it in a container with a plastic liner. Equipment needed:

- Container (20- to 30-gallon), and
- Plastic liners.

### ***Station 5: Boot Cover Removal***

Remove boot covers and deposit them in a container with a plastic liner. Equipment needed:

- Container (20- to 30-gallon),
- Plastic liners, and
- Bench or stool.

### ***Station 6: Outer Glove***

Remove outer gloves and deposit them in a container with a plastic liner. Equipment needed:

- Container (20- to 30-gallon), and
- Plastic liners.

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***Station 7: Suit, SCBA, Boot, and Glove Wash***

If design does not include Station 2, wash suit at this station. Thoroughly wash suit, SCBA, boots, and gloves with a long-handled, soft-bristled scrub brush and copious amounts of decontamination solution or detergent water solution. Wrap SCBA regulator (if belt mounted type) with plastic to keep out water. Wash backpack assembly with sponges or cloth. Equipment needed:

- Container (30- to 50-gallon),
- Decontamination solution,
- Detergent water solution,
- Two or three long-handled bristled scrub brushes,
- Small buckets,
- Sponges or cloths.

***Station 8: Suit, SCBA, Boot, and Glove Rinse***

If design does not include Station 3, rinse suit at this station. Rinse off the decontamination solution or detergent water solution using copious amounts of water. Repeat as many times as necessary. Equipment needed:

- Container (30- to 50-gallon),
- High pressure spray unit and splash guard,
- Water,
- Small buckets,
- Two or three long-handled, soft-bristled scrub brushes, and
- Sponges or cloths.

***Station 9: Tank Change***

If a worker leaves the exclusion zone to change their air tank, this is the last step in the decontamination procedure. They exchange the tank, don new outer gloves and boots, and have the joints taped. They then return to duty. Equipment needed:

- Air tanks,
- Tape,
- Boot covers, and
- Gloves.

***Station 10: Chemical-Resistant Boot Removal***

Remove chemical resistant boots and deposit them in a container with a plastic liner. Equipment needed:

- Container (30- to 50-gallon),
- Plastic liners,
- Bench or stool, and
- Bootjack.

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***Station 11: SCBA Backpack Removal***

While still wearing face piece, remove backpack and place it on a table. Disconnect hose from regulator valve and proceed to next station. Equipment needed:

- Table.

***Station 12: Splash Suit Removal***

With assistance, remove splash suit. Deposit it in a container with a plastic liner. Equipment needed:

- Container (30- to 50-gallon),
- Plastic liners, and
- Bench or stool.

***Station 13: Inner Glove Wash***

Wash with decontamination solution or detergent water solution that will not harm skin. Repeat as many times as necessary. Equipment needed:

- Basin or bucket,
- Decontamination solution,
- Detergent water solution, and
- Small table.

***Station 14: Inner Glove Rinse***

Rinse with water. Repeat as many times as necessary. Equipment needed:

- Water,
- Basin or bucket, and
- Small table.

***Station 15: Face Piece Removal***

Remove face piece. Deposit it in a container with a plastic liner. Avoid touching face with fingers. Equipment needed:

- Container (30- to 50-gallon), and
- Plastic liners.

***Station 16: Inner Glove Removal***

Remove inner gloves and deposit them in a container with a plastic liner. Equipment needed:

- Container (20- to 30-gallon), and
- Plastic liners.

***Station 17: Inner Clothing Removal***

Remove inner clothing. Place it in a container with a plastic liner. Do not wear inner clothing off the site, since small amounts of contaminants may have been transferred in removing fully encapsulating suit. Equipment needed:

- Container (30 to 50 gallon), and
- Plastic liners.

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***Station 18: Field Wash***

Shower if highly toxic, skin-corrosive, or skin-absorbable materials are known or suspected to be present. Wash hands and face if shower is not available. Equipment needed:

- Water,
- Soap,
- Small table,
- Basin or bucket,
- Field showers, and
- Towels.

***Station 19: Redress***

Put on clean clothes. A dressing trailer is needed in inclement weather. Equipment needed:

- Table,
- Chairs,
- Lockers, and
- Clothes.

**2.2 MINIMUM DECONTAMINATION PROCEDURES FOR LEVEL B**

**2.2.1 Equipment Worn**

This decontamination procedure outlined is the **minimum** number of decontamination stations necessary for HGL workers wearing the following protective clothing and equipment:

- One-piece, hooded, chemical-resistant splash suit,
- SCBA,
- Hard hat,
- Chemical-resistant boots with steel or composite toe,
- Boot covers,
- Inner and outer gloves, and
- Taped joints between gloves, boots, and suit.

**2.2.2 Decontamination Procedures**

***Station 1: Segregated Equipment Dump***

Deposit equipment used on the site (tools, sampling devices and containers, monitoring instruments, radios, clipboards, etc.) on plastic drop cloths or in different containers with plastic liners. Segregation at the drop reduces the probability for cross contamination. During hot weather operations, cool down station may be set up within this area. Equipment needed:

- Containers of various sizes,
- Plastic liners, and
- Plastic drop cloths.

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***Station 2: Suit, Boot Covers, and Glove Wash and Rinse***

Thoroughly wash and scrub chemical resistant splash suit, outer boots, and gloves with a decontamination solution. Rinse off using copious amounts of water. Equipment needed:

- Containers (20- to 30-gallon),
- Decontamination solution,
- Detergent solution,
- Rinse water,
- High pressure spray unit and splash guard, and
- Two or three long-handled, soft-bristled scrub brushes.

***Station 3: Outer Boot and Glove Removal***

Remove outer boots and gloves and deposit them in a container with a plastic liner. Equipment needed:

- Container (30- to 40-gallon),
- Plastic liners,
- Bench or stool,
- Water, and
- Two or three long-handled, soft-bristled scrub brushes.

***Station 4: Tank Change***

If a worker leaves the exclusion zone to change their air tank, this is the last step in the decontamination procedure. They exchange the tank, don new outer gloves and boots, and have the joints taped. They then return to duty. Equipment needed:

- Air tanks,
- Tape,
- Boot covers, and
- Gloves.

***Station 5: Outer Garment Removal***

Chemical-resistant splash suit, if worn outside the SCBA, is removed and deposited in separate containers with plastic liners. If the suit is worn underneath the SCBA, see Station 5A. Equipment needed:

- Containers (20- to 30-gallon), and
- Plastic liners.

***Station 5A: Suit Removal When Worn Underneath the SCBA***

If the chemical resistant splash suit is worn beneath the SCBA, remove SCBA backpack, but not the face piece, and hand to a buddy or lay down on plastic sheeting and remove suit. Equipment needed:

- Plastic sheeting.



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***Station 6: SCBA Removal and Decontamination***

Wrap SCBA regulator (if belt mounted type) with plastic to keep out water. Wash backpack assembly with sponges or cloth. Remove face piece while avoiding facial contact by fingers. SCBA is deposited on a clean plastic sheet. Equipment needed:

- Water,
- Small buckets,
- Sponges or cloths,
- Plastic sheeting, and
- Two or three long-handled, soft-bristled scrub brushes.

***Station 7: Inner Glove Removal***

Remove inner gloves and deposit them in a container with a plastic liner. Equipment needed:

- Container (20- to 30-gallon), and
- Plastic liners.

***Station 8: Field Wash***

Shower if highly toxic, skin-corrosive, or skin-absorbable materials are known or suspected to be present. Wash hands and face if shower is not available. Equipment needed:

- Water,
- Soap,
- Small table,
- Basin or bucket,
- Field showers, and
- Towels.

**3.0 LEVEL C**

**3.1 MAXIMUM DECONTAMINATION PROCEDURES FOR LEVEL C**

**3.1.1 Equipment Worn**

This decontamination procedure outlined is the **maximum** number of decontamination stations necessary for HGL workers wearing the following protective clothing and equipment:

- One-piece coverall,
- Full-face respirator,
- Hard hat,
- Safety boots with steel or composite toe,
- Boot covers,
- Inner and outer gloves, and
- Taped joints between gloves, boots, and suit.

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### 3.1.2 Decontamination Procedures

#### ***Station 1: Segregated Equipment Dump***

Deposit equipment used on the site (tools, sampling devices and containers, monitoring instruments, radios, clipboards, etc.) on plastic drop cloths or in different containers with plastic liners. Each piece of equipment may be contaminated to a different degree; therefore, segregation at the drop reduces the potential for contamination. Equipment needed:

- Containers of various sizes,
- Plastic liners, and
- Plastic drop cloths.

#### ***Station 2: Boot Covers and Glove Wash***

Thoroughly wash and scrub outer boot covers and gloves with a decontamination solution. Equipment needed:

- Container (20- to 30-gallon),
- Decontamination solution,
- Detergent water solution, and
- Two or three long-handled, soft-bristled scrub brushes.

#### ***Station 3: Boot Covers and Glove Rinse***

Rinse off the decontamination solution from Station 2 using copious amounts of water. Repeat as many times as necessary. Equipment needed:

- Container (30- to 50-gallon),
- High pressure spray unit and splash guard,
- Water, and
- Two or three long-handled, soft-bristled scrub brushes.

#### ***Station 4: Tape Removal***

Remove tape around boots and gloves and deposit it in a container with a plastic liner. Equipment needed:

- Container (20- to 30-gallon), and
- Plastic liners.

#### ***Station 5: Boot Cover Removal***

Remove boot covers and deposit them in a container with a plastic liner. Equipment needed:

- Container (30- to 40-gallon),
- Plastic liners, and
- Bench or stool.

#### ***Station 6: Outer Glove Removal***

Remove outer gloves and deposit them in a container with a plastic liner. Equipment needed:

- Container (20- to 30-gallon), and
- Plastic liners.

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***Station 7: Canister or Mask Change***

If a worker leaves the exclusion zone to change their canister (or mask), this is the last step in the decontamination procedure. The worker’s canister is exchanged, new outer gloves and boot covers are donned, joints are taped, and the worker returns to duty. Equipment needed:

- Respirator canisters appropriate to the field hazard,
- Extra respirators,
- Tape,
- Boot covers, and
- Gloves.

***Station 8: Outer Garment Removal***

One piece coverall is removed and deposited in containers with plastic liners. Equipment needed:

- Containers (20- to 30-gallon), and
- Plastic liners.

***Station 9: Inner Glove Wash***

Wash with decontamination solution that will not harm skin. Repeat as many times as necessary. Equipment needed:

- Basin or bucket,
- Decontamination solution,
- Detergent water solution, and
- Small table.

***Station 10: Inner Glove Rinse***

Rinse with water. Repeat as many times as necessary. Equipment needed:

- Water,
- Basin or bucket, and
- Small table.

***Station 11: Face Piece Removal and Decontamination***

Remove face piece while avoiding facial contact by fingers. Face piece is deposited on a clean plastic sheet. Canisters are removed and deposited in containers with plastic liners. Respirators are scrubbed with soap and water and rinsed with copious amounts of clean water. Equipment needed:

- Water,
- Soap,
- Small buckets,
- Small brushes,
- Sponges or cloths, and
- Plastic sheeting.

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***Station 12: Inner Glove Removal***

Remove inner gloves and deposit them in a container with a plastic liner. Equipment needed:

- Container (20- to 30-gallon), and
- Plastic liners.

***Station 13: Inner Clothing Removal***

Remove inner clothing. Place it in a container with a plastic liner. Do not wear inner clothing off the site, since small amounts of contaminants may have been transferred in removing outer suit. Equipment needed:

- Container (30- to 50-gallon), and
- Plastic liners.

***Station 14: Field Wash***

Shower if highly toxic, skin-corrosive, or skin-absorbable materials are known or suspected to be present. Wash hands and face if shower is not available. Equipment needed:

- Water,
- Soap,
- Small table,
- Basin or bucket,
- Field showers, and
- Towel.

***Station 15: Redress***

Put on clean clothes. A dressing trailer is needed in inclement weather. Equipment needed:

- Table,
- Chairs,
- Lockers, and
- Clothes.

**3.2 MINIMUM DECONTAMINATION PROCEDURES FOR LEVEL C**

**3.2.1 Equipment Worn**

This decontamination procedure outlined is the **minimum** number of decontamination stations necessary for HGL workers wearing the following protective clothing and equipment:

- One-piece coverall,
- Full-face respirator,
- Hard hat,
- Safety boots with steel or composite toe,
- Boot covers,
- Inner and outer gloves, and
- Taped joints between gloves, boots, and suit.

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### 3.2.2 Decontamination Procedures

#### ***Station 1: Segregated Equipment Dump***

Deposit equipment used on the site (tools, sampling devices and containers, monitoring instruments, radios, clipboards, etc.) on plastic drop cloths or in different containers with plastic liners. Segregation at the drop reduces the probability for cross contamination. During hot weather operations, cool-down station may be set up within this area. Equipment needed:

- Containers of various sizes,
- Plastic liners, and
- Plastic drop cloths.

#### ***Station 2: Boot Cover, and Glove Wash and Rinse***

Thoroughly wash and scrub outer boots, and gloves with a decontamination solution. Rinse off using copious amounts of water. Equipment needed:

- Containers (20- to 30-gallon),
- Decontamination solution,
- Detergent solution,
- Rinse water,
- High-pressure spray unit and splash guard, and
- Two or three long-handled, soft-bristled scrub brushes.

#### ***Station 3: Outer Boot and Glove Removal***

Remove outer boots and gloves and deposit them in a container with a plastic liner. Equipment needed:

- Container (30- to 40-gallon),
- Plastic liners,
- Bench or stool, and
- Water, and
- Two or three long-handled, soft-bristled scrub brushes.

#### ***Station 4: Canister or Mask Change***

If a worker leaves the exclusion zone to change their canister (or mask), this is the last step in the decontamination procedure. The worker's canister is exchanged, new outer gloves and boot covers are donned, joints are taped, and the worker returns to duty. Equipment needed:

- Respirator canisters appropriate to the field hazard,
- Extra respirators,
- Tape,
- Boot covers, and
- Gloves.

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***Station 5: Outer Garment Removal***

One piece coverall is removed and deposited in containers with plastic liners. Equipment needed:

- Containers (20- to 30-gallon), and
- Plastic liners.

***Station 6: Face Piece Removal and Decontamination***

Remove face piece while avoiding facial contact by fingers. Face piece is deposited on a clean plastic sheet. Canisters are removed and deposited in containers with plastic liners. Respirators are scrubbed with soap and water and rinsed with copious amounts of clean water. Equipment needed:

- Water,
- Soap,
- Small buckets,
- Small brushes,
- Sponges or cloths, and
- Plastic sheeting.

***Station 7: Inner Glove Removal***


Remove inner gloves and deposit them in a container with a plastic liner. Equipment needed:

- Container (20- to 30-gallon), and
- Plastic liners.

***Station 8: Field Wash***

Shower if highly toxic, skin-corrosive, or skin-absorbable materials are known or suspected to be present. Wash hands and face if shower is not available. Equipment needed:

- Water,
- Soap,
- Small table,
- Basin or bucket,
- Field showers, and
- Towels.

	<b>CORPORATE TECHNICAL PROCEDURE</b>	
	Approved for issue by:	
	Process Owner	
	Corporate Quality Director	
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## 1.0 PURPOSE AND APPLICABILITY

This standard operating procedure (SOP) describes the procedures for all HydroGeoLogic, Inc. (HGL) and subcontractor personnel providing munitions and explosives of concern (MEC) anomaly avoidance support during field operations where there is a potential for encountering MEC hazards.

Personnel who use this procedure must complete the SOP Acknowledgement Form (HGL SOP 408.501.F01) and submit it to the Senior Unexploded Ordnance Supervisor (SUXOS) and Unexploded Ordnance Quality Control Specialist (UXOQCS) as evidence that they have read and understand this procedure. Project leaders retain this documentation in the project file.

## 2.0 SUMMARY OF METHOD

All HGL employees tasked with performing MEC-related activities must qualify in accordance with (IAW) the Department of Defense Explosive Safety Board (DDESB) Technical Paper (TP) 18. Perform all work in a manner consistent with Occupational Safety and Health Administration-established standards and requirements. Conduct all activities in conformance with the project-specific Accident Prevention Plan (APP) and Site Safety and Health Plan (SSHP).

This MEC SOP discusses surface and subsurface anomaly avoidance procedures and techniques to be used while conducting munitions response and hazardous, toxic, and radioactive waste (HTRW)-related activities during investigative, design, and remedial actions. Anomaly avoidance techniques must be employed on properties known or suspected to contain MEC or chemical agent to avoid surface and subsurface explosive and chemical hazards. Anomaly avoidance techniques are implemented for activities that include the following:

- Surveying and mapping,
- Environmental and natural resource assessments,
- Surface and subsurface sampling,
- Boring and drilling,
- Groundwater monitoring, and
- Sign and fence installation.

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### 3.0 DEFINITIONS

#### 3.1 DEFINITIONS

Anomaly Avoidance: Techniques employed on property known or suspected to contain MEC or chemical agent, regardless of configuration, to avoid contact with potential surface or subsurface hazards, to allow entry into the area for the performance of required operations.

Hazardous, Toxic, and Radioactive Waste (HTRW) Activities: Activities undertaken for the following:

- The U.S. Environmental Protection Agency’s Superfund program,
- The Defense Environmental Restoration Program, including Formerly Used Defense Sites (FUDS),
- Installation Restoration Program sites at active U.S. Department of Defense (DoD) facilities,
- HTRW actions associated with civil works projects, and
- Any other mission or non-mission work performed for others at HTRW sites.

HTRW actions during the investigative/design phase of an HTRW project on a site with known MEC or unknown fillers require anomaly avoidance procedures. MEC removal actions may be required in advance of HTRW activities (construction) on a HTRW project site with known MEC hazards.

Munitions and Explosives of Concern (MEC): Specific categories of military munitions that may pose unique explosives safety risks, including the following:

- Unexploded ordnance (UXO), as defined in 10 United States Code (U.S.C.) § 101(e)(5)(A) through (C);
- Discarded military munitions (DMM), as defined in 10 U.S.C. § 2710(e)(2); or
- Munitions constituents (such as TNT or RDX), as defined in 10 U.S.C. § 2710(e)(3), present in high enough concentrations to pose an explosive hazard.

Munitions Constituents: Any materials originating from UXO, DMM, or other military munitions, including explosive and non-explosive materials, and emission, degradation, or breakdown elements of such ordnance or munitions.

Munitions Debris: Remnants of munitions remaining after munitions use, demilitarization, or final disposition. Examples of munitions remnants include fragments, penetrators, projectiles, shell



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casings, links, and fins. Munitions debris also includes inert munitions-related material recovered during an MEC removal.

Recovered Chemical Warfare Materiel (CWM): Non-stockpiled CWM previously discarded, buried, or fired and discovered either unexpectedly or during planned environmental restoration operations that DoD has either secured in place or placed under DoD control pending final disposition. CWM is normally secured in a DDESB-approved storage location or interim holding facility, pending final disposition.

Unexploded Ordnance (UXO): As defined by 10 U.S.C. § 101(e)(5)(A) through (C), military munitions that

- Have been primed, fuzed, armed, or otherwise prepared for action;
- Have been fired, dropped, launched, projected, or placed in such a manner as to constitute a hazard to operations, installation, personnel, or material; and
- Remain unexploded whether by malfunction, design, or any other cause.

UXO-Qualified Personnel: Personnel who have performed successfully in military explosive ordnance disposal positions or are qualified to perform in the following contractor positions as listed in the Department of Labor’s Service Contract Act Directory of Occupations: UXO Technician II, UXO Technician III, UXO Safety Officer, UXO Quality Control Specialist, or Senior UXO Supervisor.

### 3.2 ABBREVIATIONS/ACRONYMS

APP	Accident Prevention Plan
bgs	below ground surface
CWM	chemical warfare materiel
DDESB	Department of Defense Explosive Safety Board
DMM	discarded military munition
DoD	U.S. Department of Defense
DPT	direct push technology
FUDS	Formerly Used Defense Site
GPS	global positioning system
HGL	HydroGeoLogic, Inc.
HTRW	hazardous, toxic, and radioactive waste

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IAW	in accordance with
MEC	munitions and explosives of concern
MMRP	Military Munitions Response Program
PA/SI	Preliminary Assessment/Site Inspection
RDX	Hexahydro-1,3,5-trinitro-1,3,5-triazine (also known as Royal Demolition Explosive)
SOP	standard operating procedure
SSHP	Site Safety and Health Plan
SUXOS	Senior Unexploded Ordnance Supervisor
TNT	trinitrotoluene
TP	Technical Paper
U.S.C.	United States Code
UXO	unexploded ordnance
UXOQCS	Unexploded Ordnance Quality Control Specialist

#### 4.0 HEALTH AND SAFETY WARNINGS

Before entering an area requiring MEC anomaly avoidance, the UXO Technician must conduct a safety brief covering emergency procedures, operations, MEC hazards, and anomaly avoidance procedures. If MEC is encountered during any phase of work, follow the procedures in the project planning documents. In general, adhere to the following MEC safety precautions and protocols:

- Observe this cardinal principle when work may involve ordnance, explosives, ammunition, severe fire hazards, or toxic materials: limit the exposure to a minimum number of personnel, for the minimum amount of time, to a minimum amount of hazardous material consistent with a safe and efficient operation.
- **DO NOT** touch, move, or jar any ordnance items regardless of their markings or apparent condition.
- **Under no circumstances handle any MEC during avoidance activities or move MEC in an attempt to make a positive identification.**
- **DO NOT** touch, pick up, kick, or move anything that is unfamiliar or unknown.
- **DO NOT** roll the item over or scrape the item to identify markings.
- **DO NOT** approach or enter a munitions site if an electrical storm is occurring or approaching. If a storm approaches during site operations, leave the site immediately and seek shelter.

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- DO NOT transmit radios or cellular phones in the vicinity of suspect MEC hazards.
- DO NOT walk across an area where the ground surface cannot be seen or that has not been cleared of MEC hazards by the UXO Technician.
- DO NOT rely on color codes for positive identification of ordnance items nor their contents.
- DO NOT drive vehicles into a suspected MEC area until anomaly avoidance techniques have been implemented.
- DO NOT be misled by markings on the MEC item stating “practice” or “dummy.” Practice ordnance can have explosive charges used to mark and/or spot the point of impact, or the item could be marked incorrectly.
- Clearly mark the location of any ordnance item found during anomaly avoidance activities so that it can be easily located and avoided.

**— WARNING —**  
*Removing or taking any munitions, explosive, or UXO or munitions-related debris from the site by any employee is strictly prohibited.*

## 5.0 CAUTIONS

### 5.1 MEC ENCOUNTERED

If MEC is encountered, the UXO Technician performs the following:

- Stops the team, draws attention to the hazard, and marks the hazard with a high-visibility pin flag, paint, or surveyors tape.
- If safe to do so, attempts to identify the MEC hazard via markings and other external features such as shape, size, and external features.
- Records the locations of any MEC hazard items in a Global positioning system (GPS), if possible.
- Photographs the hazard.
- Makes notifications required in the project planning documents.

### 5.2 MEC DISPOSITION

The UXO escort is not authorized or equipped to perform MEC disposition. MEC discoveries must be reported to the designated personnel/agencies identified in project planning documents. If staff encounter a MEC item that cannot be avoided or that, based on its fuzing or current condition,

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presents an imminent hazard, the UXO escort must immediately notify the personnel/agencies designated in project planning documents.

## 6.0 INTERFERENCES

Not applicable.

## 7.0 PERSONNEL QUALIFICATIONS/RESPONSIBILITIES

For anomaly avoidance on a site with potential MEC, HGL provides a UXO team consisting of a minimum of two personnel, one of whom must be a UXO Technician II or above (see exception in following paragraph). The UXO Technician serves as the UXO Team Leader and has ultimate responsibility for ensuring that all MEC anomaly avoidance support activities are performed IAW this SOP, project planning documents, and/or the APP/SSHP. The UXO Technician directs all MEC anomaly avoidance support during field operations.

A UXO Technician I can provide escort duties if under the supervision of UXO-qualified personnel. (Note: Although escort by a UXO Technician I is typically performed under the supervision of UXO-qualified personnel, the responsible commander or authority may approve UXO Technician I personnel to perform escort duties without supervision. Such approval must be based on an approved risk assessment and implementation of methods to mitigate potential exposures). Escorts will help ensure that MEC on the surface and subsurface anomalies are avoided.

### 7.1 UXO PERSONNEL

UXO personnel perform the following:

- Provide MEC recognition, location, and explosive safety functions.
- Conduct explosive safety briefing for all site personnel and visitors.
- Conduct a surface and subsurface anomaly avoidance.
- Work closely with U.S. Army Corps of Engineers/client personnel on all MEC-related matters.
- Coordinate and report MEC discoveries IAW project planning documents.

### 7.2 NON-UXO PERSONNEL

Non-UXO personnel perform the following:

- Obtain training in recognizing the potential hazards associated with MEC.

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- Remain with the UXO Technician at all times unless otherwise cleared to work without a UXO escort.
- Follow the instructions given by the UXO Technician if an accident occurs.

Exercise caution when walking on site and follow UXO Technician directions

## **8.0 EQUIPMENT AND SUPPLIES**

### **8.1 GENERAL EQUIPMENT AND SUPPLIES**

The following geophysical equipment is typically used during MEC anomaly avoidance operations:

- Magnetometers such as the Schonstedt GA 52-CX,
- Frequency-domain electromagnetic induction metal detectors such as the White's All Metals Detector, and
- Downhole monitors.

The following supplies are typically used during MEC anomaly avoidance operations:

- Flagging ribbon,
- Pin flags,
- GPS units, and
- High visibility, biodegradable spray paint.

### **8.2 EQUIPMENT INSPECTIONS**

Staff must perform the following equipment inspections:

- Perform a daily equipment function check on all geophysical instruments and GPS equipment. Describe the performance results of the equipment check in the logbook or in an instrument maintenance and calibration log following each functionality test.
- If an equipment function check indicates that any piece of equipment is not operating correctly, and it cannot be field repaired immediately, remove the equipment from service until it can be repaired.

## **9.0 ANOMALY AVOIDANCE PROCEDURES**

Conduct anomaly avoidance procedures during field investigation activities whenever there is a potential for encountering MEC. The purpose of the procedures is to avoid any potential surface

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and subsurface MEC hazards during these activities. Anomaly avoidance procedures including the following are outlined in the subsections below:

- Establishing site access routes and site boundaries, and conducting MEC avoidance surveys;
- Conducting land surveying and mapping;
- Conducting Preliminary Assessments/Site Inspections (PAs/SIs) on FUDS and Base Realignment and Closure sites;
- Conducting geophysical surveying; and
- Assessing environmental and natural resources:
  - Surface soil sampling,
  - Subsurface soil sampling,
  - Boring and drilling,
  - Groundwater monitoring, and
  - Test pits and trenches excavations.

## **9.1 ACCESS SURVEY AND MEC AVOIDANCE PROCEDURES**

The UXO escort must conduct an access path survey for surface hazards and subsurface anomalies before any type of activities commence, including foot and vehicular traffic. The UXO escort is responsible for conducting the access survey using the following steps:

- Conduct an access survey of the footpath and/or vehicular lanes approaching and leaving work areas with known or suspected MEC. Typically, the access route will be twice as wide as the widest vehicle that will use the route.
- Conduct an access survey around the proposed work site that is large enough to support all planned operations. The size of the area will consider the maneuverability of the equipment and the space required to stage support vehicles or equipment.
- Use geophysical instrumentation capable of detecting the smallest known or anticipated MEC to locate anomalies just below the ground surface that may be encountered because of erosion from rain or because of continual foot or vehicular traffic. If the emplacement depth is greater than the detection capabilities, then the escort must complete the geophysical survey in intervals until the required depth is reached (for example, every 6 inches, 1 foot, 2 feet, and so forth).
- Clearly mark the route(s) for future entry control.
- If anomalies or surface MEC are encountered, mark the items and relocate the work area to an anomaly free area to avoid contact.
- Prohibit personnel from working outside of the surveyed areas.

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## 9.2 CLEARING AND GRUBBING

Initial clearing and grubbing operations may be required before field activities. The objective of clearing and grubbing is to create unhindered access for the field teams. In areas with potential MEC hazards, the UXO Team must perform the following:

- Survey the proposed clearing and grubbing area with a geophysical instrument. Mark hazards with survey flagging or pin flags.
- Begin clearing and grubbing within the area established by the survey.
- Use qualified UXO Technicians to escort grubbing teams at all times.
- Exercise caution when using mechanical grubbing equipment.
- Keep the lowest part of the cutting deck of mechanized equipment at least 6 inches above ground level to avoid potential contact with any MEC hazards remaining after the initial survey.

## 9.3 LAND SURVEYING AND MAPPING PROCEDURES

The UXO Technician performs the following during land surveying and mapping activities:

- Conducts an access survey of the routes to and from the proposed survey site and an area around the site.
- Visually inspects the surface of each proposed survey point for any indication of MEC or MEC-related contamination.
- Uses a handheld geophysical instrument to assess the presence or absence of subsurface anomalies at the locations where survey points/stakes installation is planned. If responses indicate an anomaly, the UXO Technician disallows survey point/stake installation at that specific location and assists in selecting an alternate location.

## 9.4 SAMPLING AND DRILLING PROCEDURES

### 9.4.1 Surface Soil Sampling (Zero to 6 Inches)

The following paragraphs describe anomaly avoidance procedures for surface soil sampling between 0 and 6 inches below ground surface (bgs) in areas with potential MEC.

- Conduct a surface access survey of the routes to and from the proposed investigation site as well as of a support area around the investigation site.
- Visually inspect the surface of each proposed surface soil sampling site for any indication of MEC or MEC-related contamination.

<b>MEC Anomaly Avoidance Support</b>	<b>Document No.: HGL SOP 408.507</b>
	<b>Process Category: Services</b>
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	<b>Next Review Date: September 2024</b>

- Survey the proposed sample locations using handheld geophysical instruments.
- Select an alternate location to collect surface soil samples if anomalies are detected at a proposed sampling location or too many anomalies are detected in a general area of interest.

#### **9.4.2 Subsurface Soil Sampling (Below 6 Inches) and Monitoring Well Installation**

The following paragraphs describe anomaly avoidance procedures for subsurface soil sampling and monitoring well installations in an area with potential MEC. Subsurface soil sampling is defined as the collection of samples below a nominal depth of approximately 6 inches with a split-spoon, Shelby tube, direct push sampler, or bucket auger (hand auger) soil sampler using drilling techniques. Drilling techniques are also used to install groundwater monitoring wells for HTRW investigations. The UXO team adheres to the following procedures:

- Conduct a surface access survey of the routes to and from the proposed investigation site as well as an area around the investigation site.
- Conduct a subsurface survey of the proposed drill hole location(s) with a handheld, geophysical instrument to detect subsurface MEC anomalies.
- Prominently mark the locations of any anomalies detected with survey flagging or non-metallic pin flags for avoidance.
- Select a new sampling or borehole location if an anomaly is detected.
- Incrementally complete the downhole geophysical survey (for example, every 2 feet) if the subsurface sampling depth is greater than the geophysical detection capabilities.

#### **9.4.3 Incremental Geophysical Survey for Conventional MEC Avoidance**

For intrusive sampling (subsurface sampling and well drilling) in areas with suspected MEC, the team completes follows this procedure:

##### **1. Begin the installation:**

- Complete the access survey of the area.
- Complete the geophysical survey and install a pilot hole at the sample or drill location if no anomalies are detected.
- As long as no anomalies are detected, advance the pilot hole to the maximum reach of the auger or to the maximum depth of the proposed drill hole.
- During installation, incrementally complete the downhole geophysical survey (for example, every 2 feet) if the subsurface sampling depth is greater than the geophysical detection capabilities.



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- When working in impact areas, the UXO team may discontinue incremental screening once a depth of 30 feet bgs is reached or the depth of MEC penetration has been exceeded, whichever is less.
- For all other areas, incremental geophysical screening will be determined based on an assessment of the site’s characteristics and history.

**2. If anomalies are detected:**

- Stop installation immediately and backfill the pilot hole IAW project-specific procedures.
- Direct HTRW sampling personnel to select a new location.

**9.4.4 Test Pits and Trench Excavations**

Test pits and trench excavations are used to identify and characterize large subsurface HTRW areas of concern. Adhere to the following procedures:

- Conduct an access survey of the routes to and from the proposed excavation locations.
- If an anomaly is detected, select a new excavation location.
- If the proposed excavation depth is greater than the geophysical instrument detection capabilities, the UXO team proceeds as follows:
  - HTRW personnel can begin excavation in 1-foot increments.
  - At the end of each 1-foot increment, the UXO team screens for anomalies. If an anomaly is detected, the HTRW team must modify the excavation to avoid the anomaly.
  - If MEC is encountered, all operations must cease. The UXO team accesses the item and follows MEC procedures detailed in the project planning documents.
  - After the MEC hazard has been removed, excavation using anomaly avoidance can continue.
- If potentially hazardous waste, debris, or drums are encountered during test pit or trenching operations, stop all excavation activities. The Site Safety Officer adheres to the following procedure:
  - Assess the situation and direct a change to the personal protective equipment for site workers, if necessary.
  - Notify the appropriate personnel IAW the project planning documents.
  - Handle wastes IAW the project planning documents.

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	<b>Next Review Date: September 2024</b>

#### **9.4.5 Soil Sampling with Direct Push Technology**

The following paragraphs describe anomaly avoidance procedures for soil sampling and use of direct push technology (DPT) in areas with potential MEC. Soil sampling with DPT typically involves manual or mechanical penetration at the desired location, followed by withdrawal and collection of a soil sample. The UXO Team adheres to the following procedure:

- Conduct a surface access survey of the routes to and from the proposed investigation site as well as an area around the investigation site.
- Follow the anomaly-avoidance procedures described above for subsurface soil sampling and monitoring well installations as follows:
  - Conduct an incremental down-hole geophysical survey for metallic anomalies.
  - Conduct actual sampling and geophysical instrument screening through the DPT borehole.
  - Backfill the sampling location IAW project-specific procedures after collection of the soil samples.

#### **9.4.6 Groundwater Monitoring**

Groundwater monitoring activities include measuring groundwater elevations, measuring free product thickness, and collecting analytical samples. Unless a path is clearly marked, HTRW sampling personnel must be escorted by UXO-qualified personnel when conducting groundwater monitoring/aquifer characterization activities in areas with potential MEC.

### **9.5 PRELIMINARY ASSESSMENT AND SITE INSPECTION**

On sites where MEC hazards may be present, UXO Technicians perform anomaly avoidance measures to prevent non-UXO personnel conducting PA/SI work on the site from contacting MEC hazards.

## **10.0 DATA AND RECORDS MANAGEMENT**

Personnel performing MEC anomaly avoidance activities should maintain copies of daily safety and tailgate briefings. A logbook should be maintained to record information such as daily weather events, performance results of equipment checks, visitors to the site, and instructions from government personnel.

## **11.0 QUALITY CONTROL AND QUALITY ASSURANCE**

The Military Munitions Response Program (MMRP) Operations Manager ensures that this SOP is reviewed at least every two years for completeness, accuracy, and safety. Project Managers and

<b>MEC Anomaly Avoidance Support</b>	<b>Document No.: HGL SOP 408.507</b>
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	<b>Next Review Date: September 2024</b>

supervisors ensure that all site personnel read, understand, and follow this SOP, and they must bring any discrepancies with procedural steps or safety issues pertaining to this SOP to the attention of the responsible supervisor for corrective action.

The senior UXO-qualified person on site has final on-site authority on all munitions and MEC procedures and safety issues. This individual has direct reporting and communications responsibility with all responsible authorities as directed by the HGL Project Manager.

## 12.0 REFERENCES

U.S. Department of Defense (DoD), Defense Explosives Safety Regulation 6055.09, Edition 1.

DoD Explosives Safety Board, Technical Paper 18, Minimum Qualifications for Personnel Conducting Munitions and Explosives of Concern-Related Activities.

U.S. Army Corps of Engineers (USACE), Engineer Manual 385-1-97, Explosives Safety and Health Requirements Manual.

## 13.0 REVISION HISTORY

Revision Number	Revision Date	Reasons for Revision
3	September	Initial CMS Library Version

## ATTACHMENTS

None.

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## **APPENDIX B**

### **HEALTH AND SAFETY FIELD FORMS**

Automobile Accident Report  
Confined Space Entry Checklist  
Calibration Log  
Daily Project Safety Inspection Report  
Direct-Push Rig Inspection Checklist  
Drilling Equipment and Operations Inspection (Daily, Weekly, and Pre-Mobilization)  
Equipment, Property Damage and General Liability Loss Report  
First Aid Kit Inspection Log (Inventory Kit)  
HGL Incident Report  
Lessons Learned Form  
Master List of Measuring and Test Equipment  
Pre-Drilling/Boring/Geoprobe Checklist  
Pre-Task Safety and Health Analysis Worksheet  
Project Safety Inspection Report  
QC Health and Safety Checklist  
Safety and Occupational Health Deficiency Tracking Log  
Safety Meeting Training Log  
Supervisor's Incident Investigation Report  
USACE Accident Investigation Report Form 3394  
USACE Safety Inspection Checklist for Construction Equipment  
USACE Prime Contractor Monthly Record of Work-Related Injuries and Illness and Exposure Form  
Utility Markout Documentation  
Worksheet for Government and Contractor Preliminary Accident Notification (PAN)

*This page was intentionally left blank.*

<b>MOTOR VEHICLE ACCIDENT REPORT</b>	Please read the Privacy Act Statement on Page 3	<b>INSTRUCTIONS:</b> Sections I through IX are filled out by the vehicle operator. Section X, items 72 thru 82c are filled on by the operator's supervisor. Section XI thru XIII are filled out by an accident investigator for bodily injury, fatality, and/or damage exceeding \$500.
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**SECTION I - FEDERAL VEHICLE DATA**

1. DRIVER'S NAME (Last, first, middle)				2. DRIVER'S LICENSE NO./STATE/LIMITATIONS		DATE OF ACCIDENT	
4a. DEPARTMENT/FEDERAL AGENCY PERMANENT OFFICE ADDRESS						4b. WORK TELEPHONE NUMBER	
5. TAG OR IDENTIFICATION NUMBER		6. EST. REPAIR COST \$	7. YEAR OF VEHICLE	8. MAKE		9. MODEL	10. SEAT BELTS USED <input type="checkbox"/> YES <input type="checkbox"/> NO
11. DESCRIBE VEHICLE DAMAGE							

**SECTION II - OTHER VEHICLE DATA (Use Section VIII if additional space is needed)**

12. DRIVER'S NAME (Last, first, middle)			13. SOCIAL SECURITY NO./ TAX IDENTIFICATION NO.	14. DRIVER'S LICENSE NO./STATE/LIMITATIONS			
15. a DRIVER'S WORK ADDRESS						15b. WORK TELEPHONE NUMBER	
16a. DRIVER'S HOME ADDRESS						16b. HOME TELEPHONE NUMBER	
17. DESCRIPTION OF VEHICLE DAMAGE						18. ESTIMATED REPAIR COST \$	
19. YEAR OF VEHICLE		20. MAKE OF VEHICLE		21. MODEL OF VEHICLE		22. TAG NUMBER AND STATE	
23a. DRIVE'S INSURANCE COMPANY NAME AND ADDRESS						23b. POLICY NUMBER	
						23c. TELEPHONE NUMBER	
24. VEHICLE IS <input type="checkbox"/> CO-OWNED <input type="checkbox"/> RENTAL <input type="checkbox"/> LEASED <input type="checkbox"/> PRIVATELY OWNED			25a. OWNER'S NAME(S) (Last, first, middle)			25b. TELEPHONE NUMBER	
26. OWNER'S ADDRESS(ES)							




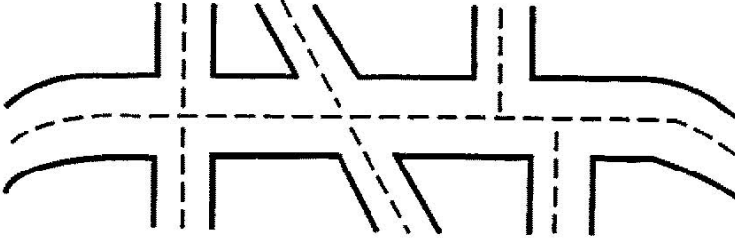
**SECTION III - KILLED OR INJURED (Use Section VIII if additional space is needed)**

27. NAME (last, first, middle)				28. SEX	29. DATE OF BIRTH	
30. ADDRESS						
<b>A</b>	31. MARK "X" IN TWO APPROPRIATE BOXES <input type="checkbox"/> KILLED <input type="checkbox"/> DRIVER <input type="checkbox"/> PASSENGER <input type="checkbox"/> INJURED <input type="checkbox"/> HELPER <input type="checkbox"/> PEDESTRIAN		32. IN WHICH VEHICLE <input type="checkbox"/> FED <input type="checkbox"/> OTHER (2)	33. LOCATION IN VEHICLE		34. FIRST AID GIVEN BY
	35. TRANSPORTED BY		36. TRANSPORTED TO			
37. NAME (last, first, middle)				38. SEX	39. DATE OF BIRTH	
40. ADDRESS						
<b>B</b>	41. MARK "X" IN TWO APPROPRIATE BOXES <input type="checkbox"/> KILLED <input type="checkbox"/> DRIVER <input type="checkbox"/> PASSENGER <input type="checkbox"/> INJURED <input type="checkbox"/> HELPER <input type="checkbox"/> PEDESTRIAN		42. IN WHICH VEHICLE <input type="checkbox"/> FED <input type="checkbox"/> OTHER (2)	43. LOCATION IN VEHICLE		44. FIRST AID GIVEN BY
	45. TRANSPORTED BY		46. TRANSPORTED TO			

<b>47. Pedestrian</b>	a. NAME OF STREET OR HIGHWAY		b. DIRECTION OF PEDESTRIAN (SW corner to NW corner, etc.)	
			FROM	TO
	c. DESCRIBE WHAT PEDESTRIAN WAS DOING AT TIME OF ACCIDENT ( <i>crossing intersection with signal, against signal, diagonally; in roadway playing, walking, hitchhiking, etc.</i> )			

**SECTION IV - ACCIDENT TIME AND LOCATION (Use section VII if additional space is needed.)**

48. DATE OF ACCIDENT	49. PLACE OF ACCIDENT (Street address, city, state, ZIP Code; Nearest landmark; Distance nearest intersection; Kind of locality (industrial, business, residential, open country, etc.); Road description).
50. TIME OF ACCIDENT	
<input type="checkbox"/> AM	
<input type="checkbox"/> PM	

51. INDICATE ON THIS DIAGRAM HOW THE ACCIDENT HAPPENED		52. POINT OF IMPACT (Check one for each vehicle)																												
<p>Use one of these outlines to sketch the scene. Write in street or highway names or numbers.</p> <p>a. Number Federal vehicle as 1, other vehicle as 2, additional vehicle as 3 and show direction of travel with arrow.</p> <p>Example: </p> <p>b. Use solid line to show path before accident and broken line after the accident.</p> <p>c. Show pedestrian by </p> <p>d. Show railroad by </p> <p>e. Place arrow in this circle to indicate NORTH.</p> 		<table border="1"> <thead> <tr> <th>FED</th> <th>2</th> <th>AREA</th> </tr> </thead> <tbody> <tr><td></td><td></td><td>a. Front</td></tr> <tr><td></td><td></td><td>b. R. Front</td></tr> <tr><td></td><td></td><td>c. L. Front</td></tr> <tr><td></td><td></td><td>d. Rear</td></tr> <tr><td></td><td></td><td>e. R. Rear</td></tr> <tr><td></td><td></td><td>f. L. Rear</td></tr> <tr><td></td><td></td><td>g. R. Side</td></tr> <tr><td></td><td></td><td>h. L. Side</td></tr> </tbody> </table>		FED	2	AREA			a. Front			b. R. Front			c. L. Front			d. Rear			e. R. Rear			f. L. Rear			g. R. Side			h. L. Side
FED	2	AREA																												
		a. Front																												
		b. R. Front																												
		c. L. Front																												
		d. Rear																												
		e. R. Rear																												
		f. L. Rear																												
		g. R. Side																												
		h. L. Side																												

53. DESCRIBE WHAT HAPPENED (Refer to vehicles as "Fed", "2", "3", etc. Please include information on posted speed limit, approximate speed of vehicles, road conditions, weather conditions, driver visibility, condition of accident vehicles, traffic controls (warning light, stop signal, etc.), condition of light (daylight, dusk, night, dawn, artificial light, etc.), and driver actions (making a U-turn, passing, stopped in traffic, etc.)

**SECTION V - WITNESS/PASSENGER (Witness must fill out SF 94, Statement of Witness) (Continue in Section VIII.)**

A	54. NAME (Last, first, middle)	55. WORK TELEPHONE NUMBER	56. HOME TELEPHONE NUMBER
	57. WORK ADDRESS		58. HOME ADDRESS
B	59. NAME (Last, first, middle)	60. WORK TELEPHONE NUMBER	61. HOME TELEPHONE NUMBER
	62. WORK ADDRESS		63. HOME ADDRESS

**SECTION VI - PROPERTY DAMAGE (Use Section VIII if additional space is needed.)**

64a. NAME OF OWNER (Last, first, middle)	64b. WORK TELEPHONE NUMBER	64c. HOME TELEPHONE NUMBER
64d. WORK ADDRESS		64e. HOME ADDRESS
65a. NAME OF INSURANCE COMPANY	65b. TELEPHONE NUMBER	65c. POLICY NUMBER
66. ITEM DAMAGED	67. LOCATION OF DAMAGED ITEM	68. ESTIMATED COST

**SECTION VII - POLICE INFORMATION**

69a. NAME OF POLICE OFFICER	69b. BADGE NUMBER	69c. TELEPHONE NUMBER
70. PRECINCT OR HEADQUARTERS	71a. PERSON CHARGED WITH ACCIDENT	71b. VIOLATION(S)



**SECTION VIII - EXTRA DETAILS**

SPACE FOR DETAILED ANSWERS. INDICATE SECTION AND ITEM NUMBER FOR EACH ANSWER. IF MORE SPACE IS NEEDED, CONTINUE ITEMS ON PLAIN BOND PAPER.

**PRIVACY ACT STATEMENT**

The information on this form is subject to the Privacy Act of 1974 (5 U.S.C. section 552a). Authority to collect the information is Title 40 U.S.C. Section 491 and the title 31 U.S.C. Section 7701. The formation is required by federal Government agencies to administer motor vehicle programs, including maintaining records on accidents involving privately owned and Federal fleet vehicles, and collecting accident claims resulting from accidents. Federal employees, and employees under contract, will use the information only in the performance of their official duties. Routine uses of the collected information may include disclosures to: appropriate Federal, State, or local agencies or contractors when relevant to civil, criminal, or regulatory investigations or prosecutions; the Office of personnel Management and the General Accounting Office for program evaluation purposes; a Member of Congress or staff in response to a request for assistance by the individual of record; another Federal agency, including the Department of Treasury and Justice, or a court under judicial proceedings; agency Inspectors General in conducting audits; private insurance and the collection agencies (including agencies under contract to Treasury to collect debt), and to other agency finance offices for federal management and debt collection. Furnishing the requested information is mandatory, including the Social security Number or Taxpayer's Identification Number(TIN) for use as a unique identifier to ensure accurate identification for individuals or firms in the system.

**SECTION IX - FEDERAL DRIVER CERTIFICATION**

I certify that the information on this form (Sections I thru VII) is correct to the best of my knowledge and belief.

72a. NAME AND TITLE OF DRIVER

72b. DRIVER'S SIGNATURE AND DATE

**SECTION X - DETAILS OF TRIP DURING WHICH ACCIDENT OCCURRED**

73. ORIGIN

74. DESTINATION

75. EXACT PURPOSE OF TRIP

76. TRIP BEGAN	DATE	TIME (Include AM or PM)	77. ACCIDENT OCCURRED	DATE	TIME (Include AM or PM)
78. AUTHORITY FOR THE TRIP WAS GIVEN TO THE OPERATOR <input type="checkbox"/> ORALLY <input type="checkbox"/> IN WRITING (Explain)			79. WAS THERE ANY DEVIATION FROM DIRECT ROUTE? <input type="checkbox"/> NO <input type="checkbox"/> YES (Explain)		
80. WAS THE TRIP MADE WITHIN ESTABLISHED WORKING HOURS? <input type="checkbox"/> YES <input type="checkbox"/> NO (Explain)			81. DID THE OPERATOR, WHILE ENROUTE, ENGAGE IN ANY ACTIVITY OTHER THAN THAT FOR WHICH THE TRIP WAS AUTHORIZED? <input type="checkbox"/> NO <input type="checkbox"/> YES (Explain)		

82. COMPLETED BY DRIVER'S SUPERVISOR	a. DID THIS ACCIDENT OCCUR WITHIN THE EMPLOYEE'S SCOPE OF DUTY	
	<input type="checkbox"/> YES <input type="checkbox"/> NO	b. COMMENTS

83a. NAME AND TITLE OF SUPERVISOR

83b. SUPERVISOR'S SIGNATURE AND DATE

83c. TELEPHONE NUMBER

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**SECTION XI - ACCIDENT INVESTIGATION DATA**

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84. DID THE INVESTIGATION DISCLOSE CONFLICTING INFORMATION.  NO  YES (If checked, explain below.)

---

**85. PERSONS INTERVIEWED**

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NAME		DATE	NAME		DATE
a.			c.		
b.			d.		

86. ADDITIONAL COMMENTS (Indicate section and item number of each comment).

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**SECTION XII - ATTACHMENTS**

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87. LIST ALL ATTACHMENTS TO THIS REPORT

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**SECTION XIII - COMMENTS/APPROVALS**

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88. REVIEWING OFFICIAL'S COMMENTS

89. ACCIDENT INVESTIGATOR			90. ACCIDENT REVIEWING OFFICIAL		
a. SIGNATURE		b. DATE	a. SIGNATURE		b. DATE
c. NAME (First, middle, last)			c. NAME (First, middle, last)		
d. TITLE			d. TITLE		
e. OFFICE			e. OFFICE		
f. OFFICE TELEPHONE NUMBER			f. OFFICE TELEPHONE NUMBER		
AREA CODE	NUMBER	EXTENSION	AREA CODE	NUMBER	EXTENSION



<b>PERMIT-REQUIRED CONFINED SPACE ENTRY</b>	
Procedure Number: <b>26.1</b>	Approval <i>M. McInnis CSP, CIH</i>

## APPENDIX A CONFINED SPACE PRE-ENTRY INSPECTION CHECKLIST

DATE: \_\_\_\_\_ CLIENT: \_\_\_\_\_

SPACE LOCATION AND DESCRIPTION: \_\_\_\_\_

\_\_\_\_\_ SPACE NUMBER \_\_\_\_\_  
(IF APPLICABLE)

PURPOSE OF ENTRY: \_\_\_\_\_

JOB NUMBER: \_\_\_\_\_

CLIENT CLASSIFICATION: \_\_\_ NON-PERMIT \_\_\_ PERMIT REQUIRED \_\_\_ UNKNOWN\*  
 \_\_\_ NON-PERMIT DUE TO VENTILATION/MONITORING (Permit Space; Hazard Eliminated)

If permit required, reasons for classification\*\*

**ATMOSPHERIC**

- |  |   |
|--|---|
| <input type="checkbox"/> Oxygen Deficient<br><input type="checkbox"/> LEL<br><input type="checkbox"/> Toxics | <input type="checkbox"/> Oxygen Enriched<br><input type="checkbox"/> Flammable Dusts<br><input type="checkbox"/> IDLH |
|--|---|

**Technical Notes:**

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**ENGULFMENT HAZARDS**

- |  |  |
|--|--|
| <input type="checkbox"/> Water/Liquids | <input type="checkbox"/> Solid Materials |
|--|--|

**INTERNAL CONFIGURATION**

- |   |  |
|---|--|
| <input type="checkbox"/> Converging Walls     | <input type="checkbox"/> Maze Construction |
| <input type="checkbox"/> Obstacle(s) in Space |  |

**OTHER RECOGIZED HAZARDS**

- |   |                                   |
|---|-----------------------------------|
| <input type="checkbox"/> Energy/Mechanical                          | <input type="checkbox"/> Hot Work |
| <input type="checkbox"/> Use of Chemicals/Compressed Gases in Space |                                   |
| <input type="checkbox"/> Other Serious Hazard(s)**                  |                                   |

List \_\_\_\_\_  
 \_\_\_\_\_

\*Space must be classified prior to entry

\*\*If available, reference and/or attach Confined space Classification Form

<b>PERMIT-REQUIRED CONFINED SPACE ENTRY</b>	
Procedure Number: <b>26.1</b>	Approval <i>M. McDaniel CSP, CIH</i>

**AIR MONITORING MEASUREMENTS**

TESTS MADE	PERMISSIBLE ENTRY LEVEL	DEPTH	DISTANCE	BEFORE VENTILATION	AFTER VENTILATION
Oxygen	19.5% to 23.5%				
Lower Flammable Limit	< 10%				
Carbon Monoxide	< 25 ppm				
Hydrogen Sulfide	< 11 ppm				
Hydrocarbons	< 1ppm				

**INSTRUMENTS**

MAKE	MODEL	SERIAL NO.	CALIBRATION DATE

**EQUIPMENT NECESSARY FOR ENTRY - CHECKLIST**

EQUIPMENT	YES	NO
Confined Space Entry Permit Needed (Corporate Health & Safety Notified)		
Authorized Entrants, Authorized Attendants, Entry Supervisor*		
Lockout/Tagout Materials		
Ventilation Fan, Hoses and Saddle Vent		
Barriers, Danger Signs, Flags, Traffic Cones (devices)		
Direct Reading Gas Monitor(s) with Current Bench Calibration		
Safety Harness and Lifelines for Entrant and Standby Persons		
Hoisting Equipment <input type="checkbox"/> with Fall Protection		
Fire Extinguisher (ABC)		
First Aid and Infection Control Kit		
Powered Communications <input type="checkbox"/> Intrinsically Safe		
Electric Equipment and Lighting <input type="checkbox"/> Explosion Proof		
Hardhat, Goggles, Boots, Gloves, Disposable Outerwear		
Chemical Protective Clothing		
Escape Bottles - 5 Minute/10 Minute (ESCBA)		
Air Purifying Respirators with ESCBA		
Supplied Air Respirators (Level B) <input type="checkbox"/> Airline with ESCBA <input type="checkbox"/> SCBA		

\*Please indicate dates of CSE training for authorized personnel

<b>PERMIT-REQUIRED CONFINED SPACE ENTRY</b>	
Procedure Number: <b>26.1</b>	Approval <i>M. McDaniel CSP, CIH</i>

**CONFINED SPACE RESCUE TEAM**

ONSITE

OFFSITE

Name: _____	Phone Number: _____
Contact Person: _____	Estimated Response Time: _____
<input type="checkbox"/> Rescue Team notified and available to <u>respond</u> to entry site when: <ul style="list-style-type: none"> <li>- Entrants are not wearing supplied air respirators; AND</li> <li>- Entrants are not exposed to obvious IDLH or potential IDLH conditions; AND</li> <li>- Entrants can be expected to “self-rescue” under normal circumstances; AND</li> <li>- No other need for a standby rescue team.</li> </ul>	<input type="checkbox"/> Rescue team notified and <u>staged</u> at entry site when: <ul style="list-style-type: none"> <li>- Entrants are wearing supplied air respirators; OR/AND</li> <li>- Entrants are exposed to obvious IDLH or potential IDLH conditions; OR/AND</li> <li>- Entrants would be expected to have difficulty in “self-rescue.”</li> </ul>

Sketch Confined Space - Ventilation Points - Monitoring Points

**A copy of this document shall be reviewed by the Confined Space Entry Team Prior to Entry.**

Inspector Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Project Manager: \_\_\_\_\_

Date: \_\_\_\_\_



Project Location: \_\_\_\_\_

Date: \_\_\_\_\_

Project Number: \_\_\_\_\_

### DAILY SAFETY INSPECTION LOG

Inspector name: \_\_\_\_\_ Work Area Checked: \_\_\_\_\_

Employees Present in Work Area: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

PPE and Work Equipment Being Used: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Special Health and Safety Issues and Notes: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Safety conditions and/or deficiencies:

Corrective actions implemented or to be completed:

\_\_\_\_\_

\_\_\_\_\_

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\_\_\_\_\_

Note: The status of corrective actions is to be tracked through closure on the Safety and Occupational Health Deficiency Tracking Log.

Signature: \_\_\_\_\_

(Inspector/Preparer)



## Direct-Push Rig Inspection Checklist

Project Name/Number: \_\_\_\_\_

Make/Model Number: \_\_\_\_\_

Equipment Number: \_\_\_\_\_

Hours/Mileage: \_\_\_\_\_

Rig clean and free of soils, oils, and other debris.		Tracks in good condition.	
All hydraulic fittings and hoses free of damage, tightened, and not leaking.		Tires fully inflated and in good condition.	
Rig controls clearly labeled and in working condition.		Back-up alarm working.	
Rig Kill Switch in working order.		First Aid Kit accessible and stocked.	
All of the Rig's connections tightened and leak-free.		Fire Extinguisher accessible and fully charged.	
Parking brake functions properly.		Eye Wash full and accessible.	
Steering controls in working order and clear of obstacles.		Hearing protection available and is being used during hammering.	
Copy of the manual for all drilling equipment available.		All overhead and underground hazards identified.	

√ = OK

N/A = Not Applicable


X = Defective

These items are to be checked each shift before operating this piece of equipment.

Report all items requiring repair to supervisor.

Notes:	
Operator/Inspector:	Date:



 <b>Drilling Equipment and Operations Inspection</b> <b>Daily</b>	Contractor:
	Hours/Mileage:
	Equipment No.:
	Date:
Drill Rig Manufacturer/Model:	
Inspection Completed By:	
Project Number:	

Answer each question by checking the appropriate column (Yes, No, or NA). If "no" is checked, an explanation should be provided in the space available. This checklist is to be completed daily by the drilling contractor and reviewed by the Site Safety and Health Officer (SSHO).

**Daily Drill Rig Inspection**

**Yes      No      NA**

- |  |                          |                          |                          |
|--|--------------------------|--------------------------|--------------------------|
| 1. Are applicable drilling materials/supplies Material Safety Data Sheets available at the site and attached to the AHA?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Explanation: _____   |                          |                          |                          |
| 2. Are daily safety meetings attended and are JSAs being completed daily by the crew?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Explanation: _____   |                          |                          |                          |
| 3. Are all warning and control labels on drill rig clean and legible?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Explanation: _____   |                          |                          |                          |
| 4. Are both "kill switches" installed by the manufacturer in operable condition and all workers at the drill site familiar with their location and how to activate them? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Explanation: _____   |                          |                          |                          |
| 5. Are drive shafts, belts, chain drives, and universal joints guarded to prevent accidental insertion of hand, fingers, or tools?                                       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Explanation: _____   |                          |                          |                          |
| 6. Are all hydraulic fittings and hoses free of damage, tightened, and not leaking (including panel)?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Explanation: _____   |                          |                          |                          |
| 7. Do high-pressure hoses have a safety (chain, cable, or strap) at each end of the hose connection to prevent whipping in the event of a failure (safety lashing)?      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Explanation: _____   |                          |                          |                          |
| 8. Is the rig clean and free of soils, oils, and other debris?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Explanation: _____   |                          |                          |                          |
| 9. Is the rig free of any miscellaneous leaks?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Explanation: _____   |                          |                          |                          |
| 10. Do controls operate smoothly; cables and lifting devices do not operate erratically to overcome resistance?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Explanation: _____   |                          |                          |                          |
| 11. Do controls have freedom of movement, not blocked, or locked in an action position?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Explanation: _____   |                          |                          |                          |
| 12. Are all safety devices not bypassed or neutralized?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Explanation: _____   |                          |                          |                          |
| 13. Are all cables free of kinks, frayed wires, "bird cages," and worn or missing sections?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Explanation: _____   |                          |                          |                          |

<b>Drilling Equipment and Operations Inspection Daily</b>	<b>Contractor:</b>
<b>Project Number:</b>	<b>Date:</b>

**Daily Drill Rig Inspection (continued)**

	<u>Yes</u>	<u>No</u>	<u>NA</u>
14. Are wire rope, sockets, splices, thimbles, and clips adequate and properly applied? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Are cables terminated on the working end with a proper eye splice, either swaged coupling or using cable clamps? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Are cable clamps installed with the saddle on the live or load side? Clamps should not be alternated and should be of the correct size and number for the cable size to which it is installed. Are clamps complete with no missing parts? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Are hooks, safety latches, shackles, rings, etc., in good condition? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Are safety latches functional and completely span the entire throat of the hook and have a positive action to close the throat except when manually displaced for connecting or disconnecting a load? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Are wedge sockets and hoisting plugs in good condition and properly installed? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Have all personnel entered their names on the Site Entry Log today? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. Is electronic communication effective for the field crews and checked daily? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. Has the exclusion zone been set-up with a radius equal to or greater than the boom height? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23. Is a 15-minute supply of fresh water available at the work site (eyewash station)? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24. Is an emergency first aid kit immediately available at the work site? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Is potable water available to employees? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. Are 3M Ultrathon or equivalent (DEET preparation) and Repel Permanone available? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27. Are two 2-A:40-B:C fire extinguishers in good working order (i.e., charged, inspected, and serviced up to date) and present at the work site? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28. Are employees on or near drilling equipment complying with the requirement to wear hearing protection? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<b>Drilling Equipment and Operations Inspection Daily</b>	<b>Contractor:</b>
<b>Project Number:</b>	<b>Date:</b>

**Daily Drill Rig Inspection (continued)**

	<u>Yes</u>	<u>No</u>	<u>NA</u>
29. Are personnel being monitored for temperature stress? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
30. Are personnel prohibited from drinking, chewing, smoking, taking medications, or other hand-to-mouth contact while in a regulated exclusion zone? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
31. Is proper fall protection provided and used for personnel working over 6 feet in height? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
32. Are outriggers extended prior to and whenever the mast is raised off its cradle? Hydraulic outriggers must maintain pressure to continuously support and stabilize the drill rig even when unattended. Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
33. Are outriggers properly supported on the ground surface to prevent settling into the soil? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
34. Are slings, chokers, and lifting devices inspected before using and in proper working order? Are rated capacities legible for the type of configuration to be used? Are damaged units removed from service and properly tagged? Is a competent rigger available for all rigging? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
35. Are shackles and clevises in proper working order and pins and screws fully inserted before placing under load? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
36. Are hoists being used only for their designed intent, are not loaded beyond their rated capacity, and are steps being taken to prevent two-blocking of hoists? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
37. Are the rig's manufacturer's procedures being followed if rope becomes caught in, or objects get pulled into, a cathead? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
38. Are drill rods not being run or rotated through rod slipping devices? No more than 1 foot (0.3 meter) of drill rod column shall be hoisted above the top of the drill mast. Drill rod tool joints shall not be made up, tightened, or loosened while the rod column is supported by a rod-slipping device. Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
39. Is there use of side-feed swivel collars on drill rods restricted to those collars that are retained by either a manufacturer-designed stabilizer or a stabilizer approved by a Professional Engineer? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
40. Are rotating parts of the drill string, rod, and augers free of sharp projections or hooks that could entrap clothing of foreign objects? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<b>Drilling Equipment and Operations Inspection Daily</b>	<b>Contractor:</b>
<b>Project Number:</b>	<b>Date:</b>

**Daily Drill Rig Inspection (continued)**

	<u>Yes</u>	<u>No</u>	<u>NA</u>
41. Is the work area around the drill rig kept clear of trip hazards? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
42. Are walking surfaces kept free of slippery materials? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
43. Are open excavations and mud or circulation pit barricaded or fenced? Is the discharge of drilling fluids being channeled away from the work area to prevent the ponding of water? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
44. Does the operator verbally alert employees and visually verify employees are clear from dangerous parts of equipment before starting or engaging equipment? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
45. Are personnel not wearing loose-fitting clothing, jewelry, or other items that could get caught in moving machinery? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
46. Are augers being cleaned only when the rotating mechanism is in neutral and the auger stopped? Are long-handled shovels only being used to remove cutting from the auger? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
47. Are open boreholes being capped and flagged? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
48. Is a daily inspection of the drilling area being performed and documented by the driller? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
49. Is the air hose free of damage, tightened, and not leaking? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b><u>Supplemental Inspection Items (from manufacturer's recommendations)</u></b>			
50. Are hydraulic fluid levels OK according to manufacturer's recommendations? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
51. Are motor oil levels OK according to manufacturer's recommendations? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
52. Are coolant levels OK according to manufacturer's recommendations? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
53. Are air cleaner systems OK according to manufacturer's recommendations? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
54. Are belt and pulley systems OK according to manufacturer's recommendations? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
55. Are all guards in place and adjusted properly? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
56. Is tub oil level OK (if equipped)? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<b>Drilling Equipment and Operations Inspection Daily</b>	<b>Contractor:</b>
<b>Project Number:</b>	<b>Date:</b>

**Daily Drill Rig Inspection (continued)**

**Yes    No    NA**

57. Are hydraulic stabilizer pads OK?

Explanation: \_\_\_\_\_

58. Are welder and generator oil levels OK according to manufacturer's recommendations?

Explanation: \_\_\_\_\_

59. Are fuel levels adequate to run a complete shift?

Explanation: \_\_\_\_\_

60. Are pull down cables inspected and in good condition?

Explanation: \_\_\_\_\_

61. Are pull down cables properly adjusted?

Explanation: \_\_\_\_\_

62. Are pull down cables properly lubricated?

Explanation: \_\_\_\_\_

63.

Explanation: \_\_\_\_\_

64.

Explanation: \_\_\_\_\_

65.

Explanation: \_\_\_\_\_

66.

Explanation: \_\_\_\_\_

67.

Explanation: \_\_\_\_\_

68.

Explanation: \_\_\_\_\_



**Drilling Equipment and Operations Inspection  
Weekly and Location Specific**

Contractor:

Drill Rig Manufacturer/Model:

Hours/Mileage:

Inspection Completed By:

Equipment No.:

Project Number:

Date:

*Answer each question by checking the appropriate column (Yes, No, or NA). If "no" is checked, an explanation should be provided in the space available. This checklist is to be completed by the drilling contractor a minimum of once per week and/or each time the drill rig is moved to a new boring location. This checklist is to be submitted to the Site Safety and Health Officer (SSHO) each week or prior to boring at a new location.*

**Weekly and Location Specific Inspection**

**Yes      No      NA**

- |   |                          |                          |                          |
|---|--------------------------|--------------------------|--------------------------|
| 1. Has drill rig had its daily safety inspection each day during past week?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Explanation: _____  |                          |                          |                          |
| 2. Was the daily safety meeting attended today by the drilling crew?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Explanation: _____  |                          |                          |                          |
| 3. Are drilling personnel familiar with designated emergency procedures for this specific boring location, including tornado shelter location?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Explanation: _____  |                          |                          |                          |
| 4. Has drill crew received annual training on proper use of fire extinguishers?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Explanation: _____  |                          |                          |                          |
| 5. Does the back-up alarm function properly?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Explanation: _____  |                          |                          |                          |
| 6. Were all drilling personnel reminded of the severe weather and lightning procedures?<br>Operations shall cease during electrical storms or when electrical storms are imminent.    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Explanation: _____  |                          |                          |                          |
| 7. Are emergency signals (sound/visual) in place?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Explanation: _____  |                          |                          |                          |
| 8. Are emergency telephone numbers and route to medical facility available at the drilling site?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Explanation: _____  |                          |                          |                          |
| 9. Is PPE being worn as required by the safety plan?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Explanation: _____  |                          |                          |                          |
| 10. Has the exclusion zone been set-up with a radius equal to or greater than the boom height (exclusion zone marked with cones or caution tape)?                                     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Explanation: _____  |                          |                          |                          |
| 11. Are personnel inspecting work areas for wasps, bees, holes in ground, trip hazards, and poison ivy prior to setting up rig?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Explanation: _____  |                          |                          |                          |
| 12. Are all containers properly labeled with container contents and hazard warnings?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Explanation: _____  |                          |                          |                          |
| 13. Have underground utilities been double-checked prior to raising mast? Is intrusive activities permit in place for boring location? Have utilities been noted on site layout plan? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Explanation: _____  |                          |                          |                          |

<b>Drilling Equipment and Operations Inspection Weekly and Location Specific</b>	<b>Contractor:</b>
<b>Project Number:</b>	<b>Date:</b>

**Weekly and Location Specific Inspection (continued)**


	<u>Yes</u>	<u>No</u>	<u>NA</u>
14. Are fire extinguishers available and charged with service tag current within past year? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Have overhead utilities been double-checked prior to raising mast? Borehole shall be at least 100 feet from nearest overhead utility – if not, contact SSHO. Have utilities been noted on site layout plan? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Is a copy of the rig's manufacturer's operator's manual available in the rig? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Are applicable drilling materials/supplies Material Safety Data Sheets (MSDSs) available at the site and attached to the AHA? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Has the preventative maintenance been performed as recommended by the manufacturer? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Is the rig clean and free of soils, oils, and other debris? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Is the rig free of any miscellaneous leaks on rig? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. Are tires fully inflated and in good condition? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. Do the parking brakes function properly? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23. Are all warning and control labels on drill rig clean and legible? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24. Are the "kill switches" installed by the manufacturer in operable condition and all workers at the drill site are familiar with their location and how to activate them? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Is the drill rig equipped/provided with a means (e.g., guard around the auger, barricade around the perimeter of the auger, electronic brake activated by a presence-sensing device) to guard against employee contact with the auger? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. Is the spark arrestor working properly? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27. Are outriggers extended prior to and whenever the mast is raised off its cradle? Hydraulic outriggers must maintain pressure to continuously support and stabilize the drill rig even when unattended. Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28. Are outriggers properly supported on the ground surface to prevent settling into the soil? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<b>Drilling Equipment and Operations Inspection Weekly and Location Specific</b>	<b>Contractor:</b>
<b>Project Number:</b>	<b>Date:</b>

**Weekly and Location Specific Inspection (continued)**

	<u>Yes</u>	<u>No</u>	<u>NA</u>
29. Are first aid kit and blood-borne pathogen kit available and inspected for contents? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
30. Are wheel chocks in place? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
31. Are all railings in place? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
32. Have PID and noise monitoring been conducted in accordance with the safety plans? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
33. Is dust being controlled during grout mixing? Are personnel wearing appropriate respiratory protection and is personal air sampling being performed when silica-containing materials are being mixed? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
34. Before drilling equipment is moved, is the travel route surveyed for overhead and terrain hazards, particularly overhead electrical hazards? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
35. Is the mast lowered prior to moving rig? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
36. Are all cables free of kinks, frayed wires, "bird cages," and worn or missing sections? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
37. Are wire rope, sockets, splices, thimbles, and clips adequate and properly applied? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
38. Are cables terminated on the working end with a proper eye splice, either swaged coupling or using cable clamps? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
39. Are cable clamps installed with the saddle on the live or load side? Clamps should not be alternated and should be of the correct size and number for the cable size to which it is installed. Are clamps complete with no missing parts? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
40. Are hooks, safety latches, shackles, rings, etc., in good condition? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
41. Are safety latches functional and completely span the entire throat of the hook and have a positive action to close the throat except when manually displaced for connecting or disconnecting a load? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
42. Are wedge sockets and hoisting plugs in good condition and properly installed? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



 <b>Drilling Equipment and Operations Inspection</b> <b>Pre-Mobilization and Mobilization</b>	Contractor:
	Hours/Mileage:
	Equipment No.:
	Date:

Answer each question by checking the appropriate column (Yes, No, or NA). If "no" is checked, an explanation should be provided in the space available. This checklist is to be completed by the drilling contractor prior to and upon mobilization to the project site. This checklist is to be submitted to the Site Safety and Health Officer (SSHO) prior to drilling or boring.

<u>Pre-Mobilization and Mobilization</u>	<u>Yes</u>	<u>No</u>	<u>NA</u>
1. Has drill rig been thoroughly inspected by a competent person (using USACE Safety Inspection Checklist for Construction Equipment) at contractor's shop prior to bringing on site? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Does driller or driver have valid Commercial Driver's License? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Does driller or driver have current DOT physical examination card? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Is DOT logbook available in rig cab with entries up to date? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Is each drilling operations worker participating in a hearing conservation program? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Do drilling personnel have current documented training in:			
☒ 40-Hour or 24-hour HAZWOPER?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
☒ 8-Hour Annual HAZWOPER Refresher (if applicable)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
☒ Hearing Conservation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
☒ MEC Awareness Training?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
☒ Hazard communication training for operational chemicals (e.g., Bentonite, fuel, etc.)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
☒ Proper rig operating procedures?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Explanation: _____			
7. Has each worker reviewed and signed the safety plan agreement/acknowledgement statement? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Are applicable drilling materials/supplies Material Safety Data Sheets (MSDSs) available at the site and attached to the AHA? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Are drilling personnel familiar with designated emergency procedures? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Were underground utilities located and marked prior to the start of drilling operation (each bore-hole location)? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



**Drilling Equipment and Operations Inspection  
Pre-Mobilization and Mobilization**

Contractor:

Project Number:

Date:

**Pre-Mobilization and Mobilization (continued)**

**Yes      No      NA**

11. Were overhead utilities identified and accounted for prior to the start of drilling operations (each bore location)?            

Explanation: \_\_\_\_\_

12. Are all warning and control labels on drill rig in place, clean, and legible?            

Explanation: \_\_\_\_\_

13. Is a copy of the manufacturer's operator's manual available in rig for reference?            

Explanation: \_\_\_\_\_

14. Has the preventative maintenance been performed as recommended by the manufacturer?            

Explanation: \_\_\_\_\_

15. Are "kill switches" installed by the manufacturer in operable condition and all workers at the drill site are familiar with their location and how to activate them?            

Explanation: \_\_\_\_\_

16. Is the drill rig equipped/provided with a means (e.g., guard around the auger; barricade around the perimeter of the auger; electronic brake activated by a presence-sensing device) to guard against employee contact with the auger.            

Explanation: \_\_\_\_\_

17. Are drive shafts, belts, chain drives, and universal joints guarded to prevent accidental insertion of hand, fingers, or tools?            

Explanation: \_\_\_\_\_

18. Are all hydraulic fittings and hoses free of damage, tightened, and not leaking (including panel)?            

Explanation: \_\_\_\_\_

19. Do high-pressure hoses have a safety (chain, cable, or strap) at each end of the hose connection to prevent whipping in the event of a failure (safety lashing)?            

Explanation: \_\_\_\_\_

20. Is rig clean and free of soils, oils, and other debris?            

Explanation: \_\_\_\_\_

21. Are there any miscellaneous leaks on rig?            

Explanation: \_\_\_\_\_

22. Are tires fully inflated and in good condition?            

Explanation: \_\_\_\_\_

23. Do the parking brakes function properly?            


Explanation: \_\_\_\_\_

24. Do controls operate smoothly; cables and lifting devices do not operate erratically to overcome resistance?            

Explanation: \_\_\_\_\_

25. Do controls have freedom of movement, not blocked, or locked in an action position?            

Explanation: \_\_\_\_\_

	<b>Drilling Equipment and Operations Inspection</b> <b>Pre-Mobilization and Mobilization</b>	<b>Contractor:</b>
<b>Project Number:</b>	<b>Date:</b>	

**Pre-Mobilization and Mobilization (continued)**

	<u>Yes</u>	<u>No</u>	<u>NA</u>
26. Are safety devices not bypassed or neutralized? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27. Is an acceptable spark arrestor installed and working? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28. Does the backup alarm function properly? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29. Are all cables free of kinks, frayed wires, "bird cages," and worn or missing sections? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
30. Are wire rope, sockets, splices, thimbles, and clips adequate and properly applied? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
31. Are cables terminated on the working end with a proper eye splice, either swaged coupling or using cable clamps? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
32. Are cable clamps installed with the saddle on the live or load side? Clamps should not be alternated and should be of the correct size and number for the cable size to which it is installed. Are clamps complete with no missing parts? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
33. Are hooks, safety latches, shackles, rings, etc., in good condition? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
34. Are safety latches functional and completely span the entire throat of the hook and have a positive action to close the throat except when manually displaced for connecting or disconnecting a load? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
35. Are wedge sockets and hoisting plugs in good condition and properly installed? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
36. Are fire extinguishers available and charged with service tag current within past year? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
37. Are first aid kit and blood-borne pathogen kit available and inspected for contents? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b><u>Drill Rig Inspection (supplemental manufacturer's inspection points for specific rig)</u></b>			
38. Are hydraulic fluid levels OK according to manufacturer's recommendations? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
39. Are motor oil levels OK according to manufacturer's recommendations? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
40. Are coolant levels OK according to manufacturer's recommendations? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



**Drilling Equipment and Operations Inspection  
Pre-Mobilization and Mobilization**

Contractor: \_\_\_\_\_

---

Date: \_\_\_\_\_

Project Number: \_\_\_\_\_

<u>Drill Rig Inspection (supplemental manufacturer's inspection points for specific rig)</u> <u>(continued)</u>	<u>Yes</u>	<u>No</u>	<u>NA</u>
41. Are air cleaner systems OK according to manufacturer's recommendations? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
42. Are belt and pulley systems OK according to manufacturer's recommendations? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
43. Are all guards in place and adjusted properly? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
44. Is tub oil level OK (if equipped)? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
45. Are hydraulic stabilizer pads OK? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
46. Are welder and generator oil levels OK according to manufacturer's recommendations? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
47. Are pull down cables inspected and in good condition? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
48. Are pull down cables properly adjusted? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
49. Are pull down cables properly lubricated? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
50. Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
51. Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
52. Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
53. Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
54. Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
55. Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



**Equipment, Property Damage, and General Liability and Loss Report**

This report is to be completed for all losses or damage to company property in excess of \$2,500.00 and all third party damage, regardless of value, resulting from company activities.

PROJECT/LOCATION: \_\_\_\_\_ PROJECT NO.: \_\_\_\_\_ DATE: \_\_\_\_\_

PROGRAM NAME: \_\_\_\_\_ TASK ORDER NUMBER: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

HOW DID DAMAGE OR LOSS OCCUR: \_\_\_\_\_

DESCRIPTION AND VALUE (\$) OF DAMAGED/LOST/STOLEN PROPERTY: \_\_\_\_\_

LOCATION OF DAMAGED/LOST/STOLEN PROPERTY (Before Loss): \_\_\_\_\_

DATE AND TIME OF DAMAGE, LOSS, OR THEFT: Date: \_\_\_\_\_ Time: \_\_\_\_\_ a.m./p.m.

OWNER OF DAMAGED/LOST/STOLEN PROPERTY:

Name \_\_\_\_\_ Phone No. (\_\_\_\_) \_\_\_\_\_

Address \_\_\_\_\_ City \_\_\_\_\_

Employer and Address \_\_\_\_\_

INJURED PARTIES (Also complete a Supervisor's Employee Injury Report if a Company Employee):

Name \_\_\_\_\_ Phone No. (\_\_\_\_) \_\_\_\_\_

Address \_\_\_\_\_ City \_\_\_\_\_

Employer and Address \_\_\_\_\_

Description of Injury \_\_\_\_\_

WITNESSES:

1. Name \_\_\_\_\_ Phone No. (\_\_\_\_) \_\_\_\_\_

Home Address \_\_\_\_\_ City \_\_\_\_\_

Employer and Address \_\_\_\_\_

2. Name \_\_\_\_\_ Phone No. (\_\_\_\_) \_\_\_\_\_

Home Address \_\_\_\_\_ City \_\_\_\_\_

Employer and Address \_\_\_\_\_

WERE PICTURES TAKEN?  YES  NO

WERE POLICE NOTIFIED?  YES  NO DEPT. \_\_\_\_\_ REPORT NO. \_\_\_\_\_

COMPLETED BY: \_\_\_\_\_ (Print) \_\_\_\_\_ (Signature) \_\_\_\_\_ (Date)

PROJECT/LOCATION MANAGER: \_\_\_\_\_ (Print) \_\_\_\_\_ (Signature) \_\_\_\_\_ (Date)



## FIRST AID KIT INSPECTION LOG (Inventory Kit)

Location: \_\_\_\_\_ Project Name: \_\_\_\_\_

Project Number: \_\_\_\_\_ Client: \_\_\_\_\_ Date: \_\_\_\_\_

Inspected by: \_\_\_\_\_ SSHO Approval Signature: \_\_\_\_\_

Contents	Fixed Location Kit		Vehicular Kit*			
	Minimum Required Quantity	Actual Quantity	Required Quantity	Actual Quantity		
				Vehicle 1 ID	Vehicle 2 ID	Vehicle 3 ID
Telfa Bandage Compress, 4"x4"	4	_____	2	_____	_____	_____
Adhesive Bandages, 1"x3-3/8"	25	_____	25	_____	_____	_____
Ammonia Inhalants	2	_____	1	_____	_____	_____
Triangular Bandage 40" x 40" x 56"	1	_____	-	_____	_____	_____
Eye Covering with Means of Attachment	1	_____	-	_____	_____	_____
Eye Flush, 1oz.	2	_____	2	_____	_____	_____
Absorbent Compress 24 sq. in.	1	_____	1	_____	_____	_____
Antiseptic Wipes 1" x 1"	10	_____	5	_____	_____	_____
Antiseptic Swabs 0.14 fl. oz.	10	_____	5	_____	_____	_____
Antiseptic Towelettes 24 sq. in.	10	_____	-	_____	_____	_____
Sterile Pad 3" x 3"	4	_____	2	_____	_____	_____
Burn Treatment 0.14 fl. Oz.	6	_____	1	_____	_____	_____
Roller Bandage 4" x 6 yd.	1	_____	-	_____	_____	_____
Roller Bandage 2" x 6 yd.	2	_____	-	_____	_____	_____
Kwik-Kold Ice Pak	2	_____	-	_____	_____	_____
Adhesive Tape, 1" x 5 yd.	2	_____	1	_____	_____	_____
Scissors and Forceps Kit	1	_____	-	_____	_____	_____
Tick Removal Kit	1	_____	-	_____	_____	_____
Emergency Blanket	1	_____	-	_____	_____	_____
Disposable Gloves	4 pair	_____	2 pair	_____	_____	_____
Flashlight	1	_____	-	_____	_____	_____
Cotton-tip Applicators	10	_____	-	_____	_____	_____
Disposable mouth-to-mouth Resuscitators	2	_____	1	_____	_____	_____
Multi-Trauma Dressings 8"x10"	2	_____	-	_____	_____	_____
2" Bandage Compress 2" x 36"	4	_____	-	_____	_____	_____
3" Bandage Compress 3" x 60"	2	_____	-	_____	_____	_____
4" Bandage Compress 4" x 72"	1	_____	-	_____	_____	_____
Supervisor's Employee Injury Report	1	_____	1	_____	_____	_____
Inventory Kit	1	_____	-	_____	_____	_____

\* Readily available "vehicle-size" first aid kits may be purchased at the local department store to fulfill vehicle kit stocking requirements. The kit contents do not need to be inspected as long as the shrink-wrap sanitary covering is intact.

## HGL INCIDENT REPORT

Section 1 – General Information			
Date of Occurrence	Date Reported	Reported to whom?	Time of Occurrence
Employee Name	Work Address	City, State, Zip Code	Work Phone Number
Date of Birth	Home Address	City, State, Zip Code	Home Phone Number
Occupation (Title)		Full time <input type="checkbox"/> Part time <input type="checkbox"/> Temporary <input type="checkbox"/>	
Location of Occurrence	Address	City, State, Zip Code	
Description of Incident (include what employee was doing, work process, cause, injury and body part)			
Witness(es)	Address	City, State, Zip Code	Work Phone Number
Was First Aid given on-site? Yes <input type="checkbox"/> No <input type="checkbox"/> By whom?			
Was employee taken to hospital? Yes <input type="checkbox"/> No <input type="checkbox"/> Ambulance Yes <input type="checkbox"/> No <input type="checkbox"/> If so, provide name, address, and phone number of hospital and name of attending physician below:			
Name of Hospital:	Address:	City, State, Zip Code:	Phone Number:
Attending Physician:			
Did employee seek medical attention other than an emergency room? Yes <input type="checkbox"/> No <input type="checkbox"/> If so, provide practice name, address, phone number and name of attending physician below:			
Practice Name:	Address:	City, State, Zip Code:	Phone Number:
Attending Physician:			
Did employee lose time on the job? Yes <input type="checkbox"/> No <input type="checkbox"/> If so, how many days after the initial injury date? _____			
Was employee assigned light duty? Yes <input type="checkbox"/> No <input type="checkbox"/> If so, how many days after the initial injury date? _____			
Supervisor (print):	Signature:		Date:
Employee (print):	Signature:		Date:
Witness (print):	Signature:		Date:
Witness (print):	Signature:		Date:
Director, Health & Safety:	Signature:		Date:

## HGL LESSONS LEARNED FORM

### WHO OR WHAT WAS INVOLVED:

- HGL employee or equipment
- Third Party (private individual/contractor/client) employee or equipment

### SECTION 1. WHAT HAPPENED?

**Sequence of events:** Describe the physical situation plus pertinent events before, during, and after the incident. Report only facts. Identify injury/equipment damage avoided. If you can, also list the obvious cause(s) for what happened.


### SECTION 2. HOW CAN WE AVOID SIMILAR SITUATIONS?

**List actions that will prevent recurrence.** (e.g. change how the task is done, purchase or use different equipment, use different PPE, add additional workers, alter the management structure)


### SECTION 3. WHO CAN BE CONTACTED IF ADDITIONAL DETAILS ARE NEEDED?

**HS Coordinator:** \_\_\_\_\_

**Or (if you are brave) Your Name:** \_\_\_\_\_

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

**THANKS FOR THE INFORMATION!**







## PRE-DRILLING/BORING/GEOPROBE CHECKLIST

Purpose: This form is designed to help the FTL make decisions drilling/boreholing/geoprobng around underground/overhead utilities.

Date \_\_\_\_\_ Project Name/Number \_\_\_\_\_

Field team leader name: \_\_\_\_\_

Duration/summary of work to be performed: \_\_\_\_\_

Consideration	Yes	No	Explanation	Initial
Has the state one-call been contacted?				
Are any as-built drawings available? If so, do they show any utilities?				
Has a visual inspection of the work area(s) been completed?				
If one-call not available has a private locating service been contacted?				
Were any utilities identified through private locating service? If so, indicate on site drawings.				
Are there any fiber optic cables within 50 feet of hole locations?				
If fiber optic cables are within 50 feet has an agreement with the fiber optic company been established?				
Can a test borehole be advanced by hand digging, probing, post hole digging, and/or air knifed to 5 feet bgs?				
If hand digging, probing, post hole digging, and or air knifing to 5 feet bgs is not possible, can a non- invasive geophysical investigation be conducted? If not, why?				
Are you comfortable with approving this authorization?				
Other considerations:				





# PRE-TASK SAFETY AND HEALTH ANALYSIS CHECKLIST

(Check all that apply)

Date: \_\_\_\_\_  
Project Name: \_\_\_\_\_  
SSHO: \_\_\_\_\_

Task Analyzed: \_\_\_\_\_ Project Name: \_\_\_\_\_

**Permits**

- Intrusive Activities Permit
- Hot Work Permit
- Confined Space Entry Permit
- All permit conditions met
- Signed-off when work completed
- Rescue equipment/services available
- Other: \_\_\_\_\_

**PPE**

- Hard hat, safety glasses, safety-toe boots
- Chemical protective gloves
- Leather or special gloves (e.g. Whizards)
- Chemical protective coveralls
- Chemical protective boots
- Splash goggles / face shield
- Respirator
- Hearing protection
- Fall protection
- Burning goggles/welder's helmet
- Leathers (slag and burn protection)
- Chainsaw protection
- Pressure washing protection
- Puncture resistant insoles
- Reflective vest
- Other: \_\_\_\_\_

**Tools**

- Current inspection
- Proper tools for the job
- Good tool condition
- Qualifications, e.g. explosive actuated tool
- Other: \_\_\_\_\_

**Emergency Equipment**

- Fire extinguishers
- Safety shower/eyewash station
- First aid kit
- Evacuation route(s)
- Other: \_\_\_\_\_

**Access**

- Scaffold training and inspection
- Ladders
- Man-lift inspected
- Personnel basket (inspected/approved)
- Operator training
- Fall protection provided
- Other: \_\_\_\_\_

**Welding and Cutting**

- Flash, slag, and other burn protection
- Combustibles & flammables
- Spark containment
- Shields
- Grounding
- Water hose
- Fire extinguisher
- Fire watch
- Proper cylinder procedures
- Flashback arrestors
- Other: \_\_\_\_\_

**Overhead Utilities**

- Survey area for utilities
- Check for clearance issues
- De-energize or reroute
- Barricade area
- Post hazard warning signs
- Provide spotters

**Electrical (Shock and Arc Flash)**

- De-energized
- Lockout tagout
- NFPA 70 E PPE
- GFCI
- Assured grounding
- Extension cord inspected
- Other: \_\_\_\_\_

**Lifting**

- Forklift
- Forklift operator licensed
- Crane inspected
- Crane operator licensed
- Lift plan completed
- Rigging Competent Person
- Rigging inspected and safe
- Rigging properly stored
- Manual Lifting (50 pound limit)
- Proper manual lifting procedure

**Drilling/ Direct Push**

- Underground / overhead utilities
- Rig inspected
- Air monitoring performed
- Emergency procedures
- Other: \_\_\_\_\_

**Hazards (Environmental)**

- Cold stress
- Heat stress / Phys. monitoring
- Sunburn
- Hot/cold surfaces or materials
- Inadequate lighting
- Irritating plants
- Noise
- Severe weather
- Insects/Animals
- Other: \_\_\_\_\_

**Hazards (Chemicals)**

- Chemical – skin or eye contact
- Ingestion
- Inhalation
- Flammable
- Chemical reaction
- Hazard Communication Standard

**Hazards (Body)**

- Fall protection
- Pinch points
- Slips & trips
- Struck-by
- Vibration: Hand-arm/whole body

**Monitoring Required**

- Air
- Noise
- Radiological
- Vibration: Hand-arm/whole body

**Overhead Work**

- Barricades
- Signs
- Hole covers
- Guardrails

**Excavation**

- Permit completed
- Excavation Competent Person
- Underground utilities located
- Overhead utilities and hazards
- Soils tested
- Heavy equipment inspected
- Perimeter protection
- Daily inspections
- Protective systems in place
- Air monitoring / Dust control

Supervisor/Foreman Recommendations:



Title:  
**Project Safety Inspection Report**

**Project Safety Inspection Report**

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

BUSINESS LINE: _____	PROJECT NAME/NUMBER: _____
PROGRAM MANAGER: _____	PROJECT MANAGER: _____
GENERAL PROJECT DESCRIPTION:	
SITE ACTIVITIES AT TIME OF INSPECTION:	

INTERVIEWED	EMPLOYEE: _____
SAFETY	ISSUE: _____
CORRECTIVE ACTION:	
ASSIGNED TO: _____	FOLLOW-UP DATE: _____
CORRECTION VERIFIED BY: _____	DATE: _____

INTERVIEWED	EMPLOYEE: _____
SAFETY	ISSUE: _____
CORRECTIVE ACTION:	
ASSIGNED TO: _____	FOLLOW-UP DATE: _____
CORRECTION VERIFIED BY: _____	DATE: _____

INSPECTION COMPLETED BY: _____	DATE: _____
--------------------------------	-------------

HEALTH AND SAFETY REVIEW BY: _____	DATE: _____
------------------------------------	-------------

**Project Safety Inspection Report (continued)**

Project \_\_\_\_\_ Date \_\_\_\_\_

	YES	NO	N/A
<u>FIRST AID</u>			
1. Are first aid kit locations identified and accessible?	_____	_____	_____
2. Are emergency eye wash/safety showers available and inspected monthly?	_____	_____	_____
3. Are first aid kits inspected weekly?	_____	_____	_____
4. Is a qualified first aid/CPR provider on site?	_____	_____	_____

<u>PERSONAL PROTECTIVE EQUIPMENT</u>			
1. Have levels of personnel protection been established?	_____	_____	_____
2. Are respirators decontaminated, inspected, and stored according to standard procedures?	_____	_____	_____
3. Have employees been fit-tested?	_____	_____	_____
4. Is defective personal protective equipment tagged and taken out of service?	_____	_____	_____
5. Does compressed breathing air meet CGA Grade "D" minimum?	_____	_____	_____
6. Are there sufficient sizes and quantities of protective equipment?	_____	_____	_____
7. At a minimum, are employees utilizing safety glasses, hard hats, and steel toe boots?	_____	_____	_____

<u>FIRE PREVENTION</u>			
1. Are employees smoking only in designated outdoor areas?	_____	_____	_____
2. Are fire lanes established and maintained?	_____	_____	_____
3. Are flammable liquid dispensing systems bonded?	_____	_____	_____
4. Are approved safety cans available for storage of flammable liquids?	_____	_____	_____
5. Has the local fire department been contacted?	_____	_____	_____
6. Are fire extinguishers available and inspected monthly?	_____	_____	_____
7. Are flammables and combustibles properly stored?	_____	_____	_____
8. Are flammable storage cabinets available and used when needed?	_____	_____	_____

<u>AIR MONITORING</u>			
1. Is required air monitoring being conducted?	_____	_____	_____
2. Are air monitoring instruments calibrated daily?	_____	_____	_____
3. Are air monitoring logs up to date?	_____	_____	_____
4. Are instrument user manuals available?	_____	_____	_____
5. Are instruments being maintained?	_____	_____	_____
6. Are employees notified of personal sampling results within 5 days of receipt?	_____	_____	_____

<u>WELDING AND CUTTING</u>			
1. Are fire extinguishers present at welding and cutting operations?	_____	_____	_____
2. Are confined spaces evaluated prior to and during cutting and welding operations?	_____	_____	_____
3. Have Hot Work Permits been completed?	_____	_____	_____
4. Are proper helmets, goggles, aprons, and gloves available for welding and cutting operations?	_____	_____	_____
5. Are welding machines properly grounded?	_____	_____	_____
6. Are oxygen and fuel gas cylinders stored a minimum of 20 feet apart?	_____	_____	_____
7. Are only trained personnel permitted to operate welding and cutting equipment?	_____	_____	_____
8. Are gas cylinders transported in a secured vertical position with caps in place?	_____	_____	_____

**Project Safety Inspection Report (continued)**

Project \_\_\_\_\_ Date \_\_\_\_\_

YES	NO	N/A
-----	----	-----

HAND AND POWER TOOLS

- |  |       |       |       |
|--|-------|-------|-------|
| 1. Are defective hand and power tools tagged and taken out of service? | _____ | _____ | _____ |
| 2. Is eye protection available and used when operating power tools?    | _____ | _____ | _____ |
| 3. Are guards and safety devices in place on power tools?              | _____ | _____ | _____ |
| 4. Are power tools inspected before each use?                          | _____ | _____ | _____ |
| 5. Are nonsparking tools available when necessary?                     | _____ | _____ | _____ |
| 6. Is the correct tool being used for the job?                         | _____ | _____ | _____ |

MOTOR VEHICLES

- |   |       |       |       |
|---|-------|-------|-------|
| 1. Are vehicles regularly inspected?  | _____ | _____ | _____ |
| 2. Are personnel licensed for the vehicles they operate?                            | _____ | _____ | _____ |
| 3. Are unsafe vehicles tagged and reported to supervision?                          | _____ | _____ | _____ |
| 4. Is vehicles safety equipment operating properly?                                 | _____ | _____ | _____ |
| 5. Are loads secure?  | _____ | _____ | _____ |
| 6. Are vehicle occupants using safety belts?  | _____ | _____ | _____ |
| 7. Are current insurance cards and blank accident report forms located in vehicles? | _____ | _____ | _____ |

EMERGENCY PLANS

- |   |       |       |       |
|---|-------|-------|-------|
| 1. Are emergency telephone numbers posted?                                    | _____ | _____ | _____ |
| 2. Have emergency escape routes been designated?                              | _____ | _____ | _____ |
| 3. Are employees familiar with the emergency signal?                          | _____ | _____ | _____ |
| 4. Has the emergency route to the hospital been established and posted?       | _____ | _____ | _____ |
| 5. Is a vehicle on site that can transport injured employees to the hospital? | _____ | _____ | _____ |

MATERIALS HANDLING

- |  |       |       |       |
|--|-------|-------|-------|
| 1. Are materials stacked and stored to prevent sliding or collapsing?    | _____ | _____ | _____ |
| 2. Are tripping hazards identified?                                      | _____ | _____ | _____ |
| 3. Are semi-trailers chocked?  | _____ | _____ | _____ |
| 4. Are fixed jacks used under semi-trailers?                             | _____ | _____ | _____ |
| 5. Are riders prohibited on materials handling equipment?                | _____ | _____ | _____ |
| 6. Are approved manlifts provided for the lifting of personnel?          | _____ | _____ | _____ |
| 7. Are personnel in manlifts wearing approved fall protection devices?   | _____ | _____ | _____ |
| 8. Are only qualified operators utilized <i>i.e.</i> , forklift trained? | _____ | _____ | _____ |

FIRE PROTECTION

- |  |       |       |       |
|--|-------|-------|-------|
| 1. Has a fire alarm system been established?                                   | _____ | _____ | _____ |
| 2. Do employees know the location and use of all fire extinguishers?           | _____ | _____ | _____ |
| 3. Are fire extinguisher locations posted?                                     | _____ | _____ | _____ |
| 4. Are combustible materials segregated from open flames?                      | _____ | _____ | _____ |
| 5. Have fire extinguishers been professionally inspected during the last year? | _____ | _____ | _____ |
| 6. Are fire extinguishers visually inspected monthly?                          | _____ | _____ | _____ |
| 7. Has a fire drill occurred within the last 12 months?                        | _____ | _____ | _____ |

**Project Safety Inspection Report (continued)**

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

YES      NO      N/A

ELECTRICAL

- |  |       |       |       |
|--|-------|-------|-------|
| 1. Is electrical equipment and wiring properly guarded and maintained in good condition?                             | _____ | _____ | _____ |
| 2. Are extension cords kept out of wet areas?  | _____ | _____ | _____ |
| 3. Is damaged electrical equipment tagged and taken out of service?  | _____ | _____ | _____ |
| 4. Have underground electrical lines been identified by proper authorities?  | _____ | _____ | _____ |
| 5. Has a lockout/tagout system been established?   | _____ | _____ | _____ |
| 6. Are GFCIs being used on all temporary electrical systems and as needed?   | _____ | _____ | _____ |
| 7. Are extension cords being inspected daily ( <i>i.e.</i> , group pin in place, no unapproved splices)?             | _____ | _____ | _____ |
| 8. Are warning signs exhibited on high voltage equipment (250V or greater)?  | _____ | _____ | _____ |
| 9. Is adequate distance maintained from overhead electrical lines?   | _____ | _____ | _____ |
| 10. Are switches, circuit breakers, and switchboards installed in wet locations enclosed in weatherproof enclosures? | _____ | _____ | _____ |
| 11. Are restricted or limited approach boundaries identified on electrical panels?                                   | _____ | _____ | _____ |
| 12. Are authorized electricians trained in NFPA 70?  | _____ | _____ | _____ |
| 13. Are only electrically rated tools being used for electrical work?  | _____ | _____ | _____ |

CRANES AND RIGGING

- |  |       |       |       |
|--|-------|-------|-------|
| 1. Are cranes inspected daily prior to use?  | _____ | _____ | _____ |
| 2. Are crane swing areas barricaded or demarked?   | _____ | _____ | _____ |
| 3. Is all rigging equipment tagged with an identification number and rated capacity?       | _____ | _____ | _____ |
| 4. Is rigging equipment inspection documented?   | _____ | _____ | _____ |
| 5. Are slings, chains, and rigging inspected before each use?                              | _____ | _____ | _____ |
| 6. Are damaged slings, chains, and rigging tagged and taken out of service?                | _____ | _____ | _____ |
| 7. Are slings padded or protected from sharp corners?                                      | _____ | _____ | _____ |
| 8. Do employees keep clear of suspended loads?   | _____ | _____ | _____ |
| 9. Are rated load capacities and special hazard warnings posted on crane?                  | _____ | _____ | _____ |
| 10. Are the records of annual crane inspection available?                                  | _____ | _____ | _____ |
| 11. Has accessible areas within the swing radius of the rear of the crane been barricaded? | _____ | _____ | _____ |
| 12. Do crane operators have required training/certification?                               | _____ | _____ | _____ |

COMPRESSED GAS CYLINDERS

- |   |       |       |       |
|---|-------|-------|-------|
| 1. Are breathing air cylinders charged only to prescribed pressures?    | _____ | _____ | _____ |
| 2. Are like cylinders segregated and stored in well ventilated areas?   | _____ | _____ | _____ |
| 3. Is smoking prohibited in cylinder storage areas?                     | _____ | _____ | _____ |
| 4. Are cylinders stored secure and upright?                             | _____ | _____ | _____ |
| 5. Are cylinders protected from snow, rain, <i>etc.</i> ?               | _____ | _____ | _____ |
| 6. Are cylinder caps in place before cylinders are moved?               | _____ | _____ | _____ |
| 7. Are fuel gas and oxygen cylinders stored a minimum of 20 feet apart? | _____ | _____ | _____ |
| 8. Are propane cylinders stored and used only outside of buildings?     | _____ | _____ | _____ |

SCAFFOLDING

- |  |       |       |       |
|--|-------|-------|-------|
| 1. Is scaffolding placed on a flat, firm surface?              | _____ | _____ | _____ |
| 2. Are scaffold planks free of mud, ice, grease, <i>etc.</i> ? | _____ | _____ | _____ |



**Project Safety Inspection Report (continued)**

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

	YES	NO	N/A
3. Is scaffolding inspected before each use?	_____	_____	_____
4. Are defective scaffold parts taken out of service?	_____	_____	_____
5. Have employees completed scaffold user training?	_____	_____	_____
6. On scaffolds where platforms are overlapped, is planking overlapped a minimum of 12 inches?	_____	_____	_____
7. Does scaffold planking extend over end supports between 6 to 18 inches (dependent upon platform length)?	_____	_____	_____
8. Are employees restricted from working on scaffolds during storms and high winds?	_____	_____	_____
9. Are all pins in place and wheels locked?	_____	_____	_____
10. Is required perimeter guarding (top rail, mid rail, and toe board) present?	_____	_____	_____
11. Has a competent person been designated to oversee scaffold construction?	_____	_____	_____
12. Are employees prohibited from moving mobile scaffold horizontally while employees are on them?	_____	_____	_____
13. Are all scaffold components manufactured by the same company?	_____	_____	_____

WALKING AND WORKING SURFACES

1. Are ladders regularly inspected?	_____	_____	_____
2. Are access ways, stairways, ramps, and ladders clean of ice, mud, snow, or debris?	_____	_____	_____
3. Are ladders being used in a safe manner?	_____	_____	_____
4. Are ladders kept out of passageways, doors, or driveways?	_____	_____	_____
5. Are broken or damaged ladders tagged and taken out of service?	_____	_____	_____
6. Are metal ladders prohibited in electrical service?	_____	_____	_____
7. Are stairways and floor openings guarded?	_____	_____	_____
8. Are safety feet installed on straight and extension ladders?	_____	_____	_____
9. Is general housekeeping being maintained?	_____	_____	_____
10. Are ladders tied off?	_____	_____	_____
11. Are handrails and side rails installed along the unprotected sides of stairways having 4 or more risers or rising more than 30 inches?	_____	_____	_____

SITE SAFETY PLAN

1. Is a site safety plan available on site or accessible to all employees?	_____	_____	_____
2. Does the safety plan accurately reflect site conditions and tasks?	_____	_____	_____
3. Have potential hazards been described to employees on site?	_____	_____	_____
4. Is there a designated safety official on site?	_____	_____	_____
5. Have all employees signed the safety plan acknowledgment form?	_____	_____	_____

SITE POSTERS

1. Are the following posters displayed in a prominent and accessible area?			
A. Minimum Wage	_____	_____	
B. OSHA Job Protection	_____	_____	

**Project Safety Inspection Report (continued)**

Project \_\_\_\_\_ Date \_\_\_\_\_

	YES	NO	N/A
--	-----	----	-----

2. Are all required state-specific posters displayed? \_\_\_\_\_

SITE CONTROL

- |   |       |       |       |
|---|-------|-------|-------|
| 1. Are work zones clearly marked?   | _____ | _____ | _____ |
| 2. Are support trailers located to minimize exposure from a potential release?                                    | _____ | _____ | _____ |
| 3. Are support trailers accessible for approach by emergency vehicles?  | _____ | _____ | _____ |
| 4. Is the site properly secured during and after work hours?  | _____ | _____ | _____ |
| 5. Is an exclusion zone sign-in/sign-out log maintained?  | _____ | _____ | _____ |
| 6. Are only personnel with current training and physicals permitted in exclusion or contamination reduction zone? | _____ | _____ | _____ |

HEAVY EQUIPMENT

- |  |       |       |       |
|--|-------|-------|-------|
| 1. Is heavy equipment inspected as prescribed by the manufacturer?                       | _____ | _____ | _____ |
| 2. Is defective heavy equipment tagged and taken out of service?                         | _____ | _____ | _____ |
| 3. Are project roads and structures inspected for load capacities and proper clearances? | _____ | _____ | _____ |
| 4. Is heavy equipment shut down for fueling and maintenance?                             | _____ | _____ | _____ |
| 5. Are backup alarms installed and working on mobile equipment?                          | _____ | _____ | _____ |
| 6. Have qualified equipment operators been designated?                                   | _____ | _____ | _____ |
| 7. Are riders prohibited on heavy equipment?   | _____ | _____ | _____ |
| 8. Are guards and safety appliances in place and used?                                   | _____ | _____ | _____ |
| 9. Are operators using the "three point" system when mounting/dismounting equipment?     | _____ | _____ | _____ |

EXCAVATION

- |  |       |       |       |
|--|-------|-------|-------|
| 1. Has a "competent person" been designated to oversee excavation activities?  | _____ | _____ | _____ |
| 2. Prior to opening excavations, are utilities located and marked?   | _____ | _____ | _____ |
| 3. Has a professional engineer evaluated all excavations greater than 20 feet deep?  | _____ | _____ | _____ |
| 4. Is there rescue equipment on site and accessible to the excavation area?  | _____ | _____ | _____ |
| 5. Is excavated material placed a minimum of 24 inches from the excavation?  | _____ | _____ | _____ |
| 6. Are the sides of excavations sloped or shored to prevent cave ins?  | _____ | _____ | _____ |
| 7. Have excavations greater than 4 feet deep been monitored for hazardous atmospheres (i.e., LEL/O <sub>2</sub> deficiency)? | _____ | _____ | _____ |
| 8. Are ladders or ramps used in excavations over 4 feet deep?  | _____ | _____ | _____ |
| 9. Are means of egress available so as to require no more than 25 feet of lateral travel?                                    | _____ | _____ | _____ |
| 10. Are barriers, i.e., guardrails or fences, placed around excavations near pedestrian or vehicle thoroughfares?            | _____ | _____ | _____ |
| 11. Is excavation inspected <u>daily</u> by competent persons and documented?  | _____ | _____ | _____ |

CONFINED SPACES

- |   |       |       |       |
|---|-------|-------|-------|
| 1. Have employees been trained in the hazards of confined spaces?   | _____ | _____ | _____ |
| 2. Are confined space permits posted at entrance to confined space? | _____ | _____ | _____ |
| 3. Is a copy of the confined space entry procedure available?       | _____ | _____ | _____ |
| 4. Has a rescue plan been established?                              | _____ | _____ | _____ |
| 5. Is an entry supervisor present at each permit-required entry?    | _____ | _____ | _____ |



**Project Safety Inspection Report (continued)**

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

	YES	NO	N/A
6. Are required extraction/fall protection devices being used?	_____	_____	_____

DECONTAMINATION

1. Are decontamination stations set up on site?	_____	_____	_____
2. Is decontamination water properly contained and disposed of?	_____	_____	_____
3. Are all pieces of equipment inspected for proper decontamination before leaving the site?	_____	_____	_____
4. Are shin/metatarsal guards being used during power washing activities?	_____	_____	_____

HAZARD COMMUNICATION

1. Is there a copy of the HAZCOM procedure on site?	_____	_____	_____
2. Are there MSDSs for required materials/chemicals present on site?	_____	_____	_____
3. Are all containers properly labeled, as to content, hazard?	_____	_____	_____
4. Have employees been trained in accordance with the HAZCOM procedure?	_____	_____	_____
5. Do employees (including subcontractors) know and understand the effects of exposure from the chemicals on site?	_____	_____	_____
6. Have all personnel signed the HAZCOM acknowledgment form?	_____	_____	_____
7. Is there an updated list of chemicals maintained on site?	_____	_____	_____

TRAINING

1. Are tailgate safety meetings being conducted daily or before each shift?	_____	_____	_____
2. Are current training/medical records maintained on site?	_____	_____	_____

DOCUMENTATION

1. Is an OSHA 300 Log maintained and the 300A posted during February 1 to April 30?	_____	_____	_____
2. Are accident report forms available?	_____	_____	_____
3. Is a copy of health and safety policy and procedures available on site?	_____	_____	_____

RADIOACTIVE MATERIALS/ X-RAY GENERATING EQUIPMENT

1. Is there a license or registration? (examples: Troxler gauge or XRF device)	_____	_____	_____
2. Is radioactive material stored on site?	_____	_____	_____
3. Is the radioactive material storage area posted with a sign stating "Caution Radioactive Materials"?	_____	_____	_____



Title:  
Project Safety Inspection Report

**Project Safety Inspection Report (continued)**

Project \_\_\_\_\_ Date \_\_\_\_\_

All Negative Responses	Corrective Action	Assigned To	Date Assigned	Date Completed	Verified By

DESCRIBE POSITIVE SAFETY OBSERVATIONS

	Contract No:
Location:	
Activity:	

**QC HEALTH AND SAFETY CHECKLIST**

Date: \_\_\_\_\_

*Answer each question by checking the appropriate column (yes, no, or NA). If "no" is checked, an explanation should be provided in the space available. This checklist is to be completed by the Site Safety and Health Officer (SSHO) while completing this scope of work and then checked/signed by the QC Representative.*

**Safety and Health Issues to be Verified**

<b><u>Reports, Documentation, and Training</u></b>	<b><u>Yes</u></b>	<b><u>No</u></b>	<b><u>NA</u></b>
1. Is the APP (Revision 4) on the Site? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Has each worker reviewed and signed the APP Acknowledgement Statement? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Do site personnel have current documented training in: <ul style="list-style-type: none"> <li>• Hearing Conservation? <span style="float: right;"><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></span></li> <li>• MEC Awareness Training? <span style="float: right;"><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></span></li> <li>• Hazard communication training for operational chemicals (e.g., Bentonite, fuel, etc)? <span style="float: right;"><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></span></li> <li>• SSHO received OSHA 30-hour Construction Safety with past three years? <span style="float: right;"><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></span></li> </ul> Explanation: _____			
4. Are applicable Material Safety Data Sheets at the Site? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Was the Intrusive Activities procedure followed and documented prior to the start of the intrusive activities? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Were underground utilities located and marked prior to the start of drilling and excavation? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Are daily safety meetings conducted and documented? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Are personnel familiar with designated emergency routes? Explanation: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Contract No:
Location:	
Activity:	

**Safety and Health Issues to be Verified (continued)**

**Reports, Documentation, and Training (continued)**

Yes   No   NA

9. Are emergency procedures known and available?      

Explanation: \_\_\_\_\_

10. Is there a copy of the emergency procedures in all the site vehicles (i.e., emergency telephone numbers, route to medical facilities)      

Explanation: \_\_\_\_\_

**General Safety**

11. Is the SSHO and at least one full-time site worker trained in CPR/First Aid?      

Explanation: \_\_\_\_\_

12. Have noise levels been documented (for each piece of equipment)?      

Explanation: \_\_\_\_\_

13. Are employees operating on or near drilling equipment, power equipment, and generators of the requirement to wear hearing protection? Are they complying with this requirement?      

Explanation: \_\_\_\_\_

14. Is a daily inspection of the project areas being performed and documented?      

Explanation: \_\_\_\_\_

15. Has the drilling rig had an initial inspection and has this inspection been documented on the USACE inspection form?      

Explanation: \_\_\_\_\_

16. Is the drilling rig being inspected and documented on a daily basis?      

Explanation: \_\_\_\_\_

17. Is potable water available to employees?      

Explanation: \_\_\_\_\_

18. Is a rest area provided?      

Explanation: \_\_\_\_\_

19. Are personnel using insect repellants [3M Ultrathon (exposed skin) or equivalent and Repel Permanone (clothing)] or personal protective equipment (PPE) to prevent insect bites? Are personnel inspecting work areas for wasps and poison ivy prior to commencing tasks?      

Explanation: \_\_\_\_\_

20. Are daily tailgate safety meetings with JSAs for each task conducted and documented?      

Explanation: \_\_\_\_\_

21. Are all project vehicles being inspected daily?      

Explanation: \_\_\_\_\_

	Contract No:
Location:	
Activity:	

**Safety and Health Issues to be Verified (continued)**

**General Safety (continued)**

**Yes   No   NA**

- |  |                          |                          |                          |
|--|--------------------------|--------------------------|--------------------------|
| 22. Were Jim Fitzgerald and Charles "Chip" Volcek notified of the commencement of work activities?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| ☒ Has a copy of the emergency route map been provided?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| ☒ Has a detailed schedule of task activities been provided?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Explanation: _____   |                          |                          |                          |
| 23. Does each vehicle contain Deep Woods OFF or equivalent (DEET preparation) and Repel Permanone during summer months?                          | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Explanation: _____   |                          |                          |                          |
| 24. Are personnel using proper clothing for the weather conditions?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Explanation: _____   |                          |                          |                          |
| 25. Are personnel wearing eye protection against ultraviolet rays, glare, and debris?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Explanation: _____   |                          |                          |                          |
| 26. Are personnel being monitored for temperature stress?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Explanation: _____   |                          |                          |                          |
| 27. Are personnel refraining from drinking, chewing, smoking, taking medications, or other hand-to-mouth contact while in restricted work areas? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Explanation: _____   |                          |                          |                          |
| 28. Are all containers appropriately labeled with container contents and hazard warnings?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Explanation: _____   |                          |                          |                          |
| 29. Is the buddy system in use?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Explanation: _____   |                          |                          |                          |
| 30. Are personnel refraining from using other contractors' or subcontractors' tools or equipment?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Explanation: _____   |                          |                          |                          |
| 31. Is a 15-minute supply of fresh water available at the remote work sites (eye wash station)?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Explanation: _____   |                          |                          |                          |
| 32. Is decontamination being conducted properly?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Explanation: _____   |                          |                          |                          |
| 33. Are fire extinguishers in good working order (charged, inspection and service up to date) and present at the work-site?                      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Explanation: _____   |                          |                          |                          |
| 34. Is an emergency first aid kit immediately available at the work-site?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Explanation: _____   |                          |                          |                          |

	Contract No:
Location:	
Activity:	

**Safety and Health Issues to be Verified (continued)**

**General Safety (continued)**

**Yes   No   NA**

35. Is the drill rig equipped with an auger guard or position sensing brake?     
Explanation: \_\_\_\_\_
36. Were Jim Fitzgerald and Charles "Chip" Volcek notified of the completion of work activities?     
 Notified that all personnel are out of field work areas?     
Explanation: \_\_\_\_\_
37. Are Job Safety Analyses being completed as required by HS045?     
Explanation: \_\_\_\_\_
38. Is HARP being used for each task?     
Explanation: \_\_\_\_\_

**Site Control**

39. Have restricted work areas been established at drilling sites?     
Explanation: \_\_\_\_\_
40. Have all personnel entered their names on site log each day?     
Explanation: \_\_\_\_\_
41. Is site security in place and enforced?     
Explanation: \_\_\_\_\_
42. Have open lines of communication between established (e.g., telephone, radios, and signal communications) for all tasks on site and verified to function as necessary?     
Explanation: \_\_\_\_\_

**Instruments and Monitoring**

43. Are instrument calibration records completed and maintained?     
Explanation: \_\_\_\_\_
44. Is noise monitoring being conducted in accordance with the APP?     
Explanation: \_\_\_\_\_
45. Are the noise dosimeters calibrated (according to USACE BQP on calibration of measurement equipment), and used in accordance with manufacturer's instructions?     
Explanation: \_\_\_\_\_
46. Are copies of current factory or other acceptable monitoring instrument calibration certificates maintained in the project files? These are to be NIST traceable in some cases.     
Explanation: \_\_\_\_\_



	Contract No:
Location:	
Activity:	

**Safety and Health Issues to be Verified (continued)**

**Instruments and Monitoring (continued)**

**Yes   No   NA**

47. Is the Master List of Measuring and Test Equipment being maintained?         
 Explanation: \_\_\_\_\_

**Personal Protective Equipment**

48. Is PPE being worn as required by the APP?         
 Explanation: \_\_\_\_\_

49. Is the PPE used being properly worn, inspected, maintained and stored?         
 Explanation: \_\_\_\_\_

50. Are adequate supplies of PPE available?         
 Explanation: \_\_\_\_\_

**Emergency Response and Communication**

51. Is electronic communication effective for the field crews and checked daily?         
 Explanation: \_\_\_\_\_

52. Are emergency signals (sound/visual) in place?         
 Explanation: \_\_\_\_\_

53. Are telephone numbers and route to medical facility posted in the field office?         
 Explanation: \_\_\_\_\_

54. Was the Tornado Shelter (old boiler building) checked to verify that it is ready in an emergency?         
 Explanation: \_\_\_\_\_

55. Was a Tornado Shelter identified for each remote field location?         
 Explanation: \_\_\_\_\_

56. Were all field personnel informed of the severe weather and lightning procedures?         
 Explanation: \_\_\_\_\_

57. Are personnel familiar with designated emergency routes and GPS locations (for life flight)?         
 Explanation: \_\_\_\_\_

58. Have emergency procedures been conveyed to personnel, including tornado shelter locations?         
 Explanation: \_\_\_\_\_

**Dust**

59. Is dust being controlled during bentonite chip handling and use?         
 Explanation: \_\_\_\_\_

	Contract No:
Location:	
Activity:	

**Corrective Actions**

List all corrective actions. Initial and date in the last column when they have been implemented (Also document on the Safety and Occupational Health Deficiency Tracking Log as required by EM 385-1-1).

_____	_____
_____	_____
_____	_____
_____	_____

The QC Representative shall sign this checklist upon completion of all items on the checklist.

QC Representative Signature: \_\_\_\_\_ Date \_\_\_\_\_





### SAFETY MEETING/TRAINING LOG

- Tailgate (daily)
- Activity Hazard Analysis
- Pre-Task Hazard Analysis (prior to new task or operation)
- Site Safety Orientation (new personnel)
- Supervisor's (monthly)
- Supervisor's (weekly)
- UXO Awareness
- Asbestos Awareness
- Health and Safety Plan Addendum: \_\_\_\_\_
- Other: \_\_\_\_\_

Date/Time: \_\_\_\_\_

Client: \_\_\_\_\_

Location: \_\_\_\_\_

Job No.: \_\_\_\_\_

Meeting/training conducted by: \_\_\_\_\_

Work Activities: \_\_\_\_\_

#### Safety / Training Topics Presented

Chemical Hazards: \_\_\_\_\_

Physical Hazards: \_\_\_\_\_

Specific Safety Topic(s): \_\_\_\_\_

\_\_\_\_\_

Specific Training Covered: \_\_\_\_\_

\_\_\_\_\_

#### Attendees

Name Printed and Employee Number:

Signature:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



## Supervisor's Incident Investigation Report

(To be completed by the employee's supervisor or other responsible administrative official)

Location where accident occurred	Employer's Premises: <input type="checkbox"/> Yes <input type="checkbox"/> No Job Site: <input type="checkbox"/> Yes <input type="checkbox"/> No	Date of accident or illness
Who was injured?	<input type="checkbox"/> Employee <input type="checkbox"/> Non-employee	Time of accident _____ <input type="checkbox"/> a.m. <input type="checkbox"/> p.m.
Length of time with firm	Job title or occupation	
What property/equipment was damaged?		Property/equipment owned by:
What was employee doing when injury/illness occurred? (Add additional sheets if needed)		
How did injury/illness occur? List all objects and substances involved.		
Part of body affected/injured?		
Nature and extent of injury/illness and property damaged (be specific)		

**PLEASE INDICATE ALL OF THE FOLLOWING WHICH CONTRIBUTED TO THE INJURY OR ILLNESS**

- |   |  |  |
|---|--|--|
| <input type="checkbox"/> Failure to lockout   | <input type="checkbox"/> Improper maintenance          | <input type="checkbox"/> Poor housekeeping             |
| <input type="checkbox"/> Failure to secure    | <input type="checkbox"/> Improper protective equipment | <input type="checkbox"/> Unrealistic schedule/budget   |
| <input type="checkbox"/> Horseplay            | <input type="checkbox"/> Inoperative safety device     | <input type="checkbox"/> Unsafe arrangement or process |
| <input type="checkbox"/> Fatigue              | <input type="checkbox"/> Lack of training or skill     | <input type="checkbox"/> Unsafe equipment              |
| <input type="checkbox"/> Improper guarding    | <input type="checkbox"/> Operating without authority   | <input type="checkbox"/> Unsafe position               |
| <input type="checkbox"/> Improper instruction | <input type="checkbox"/> Physical or mental impairment | <input type="checkbox"/> Other _____                   |

Supervisor's corrective action to ensure this type of accident does not recur:

---



---

Was employee trained in the appropriate use of Personal Protective Equipment/Proper safety procedures?..... Yes  No

Was employee cautioned for failure to use Personal Protective Equipment/Proper safety procedures? ..... Yes  No

Did employee promptly report the injury/illness?..... Yes  No

Is there modified duty available? ..... Yes  No

If so, Please describe: \_\_\_\_\_

Supervisor's Name	Supervisor's Signature	Phone#	Date
_____	_____	_____	_____

REPORT NO. <i>(For Safety Staff only)</i>	EROC CODE	<b>UNITED STATES ARMY CORPS OF ENGINEERS</b> <b>ACCIDENT INVESTIGATION REPORT</b> <i>(For Use of this Form See Attached Instructions and USACE Suppl to AR 385-40)</i>	REQUIREMENT CONTROL SYMBOL: CEEC-S-8(R2)
<b>1. ACCIDENT CLASSIFICATION</b>			
PERSONNEL CLASSIFICATION	INJURY/ILLNESS/FATAL	PROPERTY DAMAGE	MOTOR VEHICLE INVOLVED
GOVERNMENT <input type="checkbox"/> CIVILIAN <input type="checkbox"/> MILITARY	<input type="checkbox"/>	<input type="checkbox"/> FIRE INVOLVED <input type="checkbox"/> OTHER	<input type="checkbox"/>
<input type="checkbox"/> CONTRACTOR	<input type="checkbox"/>	<input type="checkbox"/> FIRE INVOLVED <input type="checkbox"/> OTHER	<input type="checkbox"/>
<input type="checkbox"/> PUBLIC	<input type="checkbox"/> FATAL <input type="checkbox"/> OTHER		<input type="checkbox"/>
<b>2. PERSONAL DATA</b>			
a. NAME (Last, First, MI)	b. AGE	c. SEX <input type="checkbox"/> MALE <input type="checkbox"/> FEMALE	d. SOCIAL SECURITY NUMBER
e. GRADE			
f. JOB SERIES/TITLE	g. DUTY STATUS <input type="checkbox"/> ON DUTY <input type="checkbox"/> TDY <input type="checkbox"/> OFF DUTY	h. EMPLOYMENT STATUS AT TIME OF ACCIDENT <input type="checkbox"/> ARMY ACTIVE <input type="checkbox"/> ARMY RESERVE <input type="checkbox"/> VOLUNTEER <input type="checkbox"/> PERMANENT <input type="checkbox"/> FOREIGN NATIONAL <input type="checkbox"/> SEASONAL <input type="checkbox"/> TEMPORARY <input type="checkbox"/> STUDENT <input type="checkbox"/> OTHER (Specify)	
<b>3. GENERAL INFORMATION</b>			
a. DATE OF ACCIDENT <i>(month/day/year)</i>	b. TIME OF ACCIDENT <i>(military time)</i> hrs	c. EXACT LOCATION OF ACCIDENT	d. CONTRACTOR'S NAME (1) PRIME:  (2) SUBCONTRACTOR
e. CONTRACT NUMBER <input type="checkbox"/> CIVIL WORKS <input type="checkbox"/> MILITARY <input type="checkbox"/> OTHER (SPECIFY)	f. TYPE OF CONTRACT <input type="checkbox"/> CONSTRUCTION <input type="checkbox"/> SERVICE <input type="checkbox"/> A/E <input type="checkbox"/> DREDGE <input type="checkbox"/> OTHER (SPECIFY)	g. HAZARDOUS/TOXIC WASTE <input type="checkbox"/> SUPERFUND <input type="checkbox"/> DERP <input type="checkbox"/> IRP <input type="checkbox"/> OTHER (SPECIFY)	
<b>4. CONSTRUCTION ACTIVITIES (Fill in line and corresponding code number in box from list - see instructions)</b>			
a. CONSTRUCTION ACTIVITY (CODE) #	b. TYPE OF CONSTRUCTION EQUIPMENT (CODE) #		
<b>5. INJURY/ILLNESS INFORMATION (Include name on line and corresponding code number in box for items e, f &amp; g - see instructions)</b>			
a. SEVERITY OF ILLNESS/INJURY (CODE) #	b. ESTIMATED DAYS LOST	c. ESTIMATED DAYS HOSPITALIZED	d. ESTIMATED DAYS REST. DUTY
e. BODY PART AFFECTED (CODE) PRIMARY # (CODE) SECONDARY #	g. TYPE AND SOURCE OF INJURY/ILLNESS TYPE SOURCE		(CODE) # (CODE) #
f. NATURE OF ILLNESS/INJURY (CODE) #			
<b>6. PUBLIC FATALITY (Fill in line and correspondence code number in box - see instructions)</b>			
a. ACTIVITY AT TIME OF ACCIDENT (CODE) #	b. PERSONAL FLOATATION DEVICE USED? <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A		
<b>7. MOTOR VEHICLE ACCIDENT</b>			
a. TYPE OF VEHICLE <input type="checkbox"/> PICKUP/VAN <input type="checkbox"/> AUTOMOBILE <input type="checkbox"/> TRUCK <input type="checkbox"/> OTHER (Specify)	b. TYPE OF COLLISION <input type="checkbox"/> SIDE SWIPE <input type="checkbox"/> HEAD ON <input type="checkbox"/> REAR END <input type="checkbox"/> BROADSIDE <input type="checkbox"/> ROLL OVER <input type="checkbox"/> BACKING <input type="checkbox"/> OTHER (Specify)	c. SEAT BELTS (1) FRONT SEAT (2) REAR SEAT	USED      NOT USED      NOT AVAILABLE
<b>8. PROPERTY/MATERIAL INVOLVED</b>			
a. NAME OF ITEM (1) (2) (3)	b. OWNERSHIP	c. \$ AMOUNT OF DAMAGE	
<b>9. VESSEL/FLOATING PLANT ACCIDENT (Fill in line and correspondence code number in box from list - see instructions)</b>			
a. TYPE OF VESSEL/FLOATING PLANT (CODE) #	b. TYPE OF COLLISION/MISHAP (CODE) #		
<b>10. ACCIDENT DESCRIPTION (Use Additional paper, if necessary)</b>			

**11. CASUAL FACTORS (Read Instructions Before Completing)**

<p>a. (Explain YES answers in item 13)</p> <p>DESIGN: Was design of facility, workplace or equipment a factor? <span style="float:right">YES <input type="checkbox"/> NO <input type="checkbox"/></span></p> <p>INSPECTION/MAINTENANCE: Were inspection &amp; maintenance procedures a factor? <span style="float:right">YES <input type="checkbox"/> NO <input type="checkbox"/></span></p> <p>PERSON'S PHYSICAL CONDITION: In your opinion, was the physical condition of the person a factor? <span style="float:right">YES <input type="checkbox"/> NO <input type="checkbox"/></span></p> <p>OPERATING PROCEDURES: Were operating procedures a factor? <span style="float:right">YES <input type="checkbox"/> NO <input type="checkbox"/></span></p> <p>JOB PRACTICES: Were any job safety/health practices not followed when the accident occurred? <span style="float:right">YES <input type="checkbox"/> NO <input type="checkbox"/></span></p> <p>HUMAN FACTORS: Did any human factors such as size or strength of person, etc., contribute to accident? <span style="float:right">YES <input type="checkbox"/> NO <input type="checkbox"/></span></p> <p>ENVIRONMENTAL FACTORS: Did heat, cold, dust, sun, glare, etc. contribute to the accident? <span style="float:right">YES <input type="checkbox"/> NO <input type="checkbox"/></span></p>	<p>a. (CONTINUED)</p> <p>CHEMICAL AND PHYSICAL AGENT FACTORS: Did exposure to chemical agents, such as dust, fumes, mists, vapors, or physical agents such as noise, radiation, etc. contribute to accident? <span style="float:right">YES <input type="checkbox"/> NO <input type="checkbox"/></span></p> <p>OFFICE FACTORS: Did office setting such as, lifting office furniture, carrying, stooping, etc. contribute to the accident? <span style="float:right">YES <input type="checkbox"/> NO <input type="checkbox"/></span></p> <p>SUPPORT FACTORS: Were inappropriate tools/resources provided to properly perform the activity/task? <span style="float:right">YES <input type="checkbox"/> NO <input type="checkbox"/></span></p> <p>PERSONAL PROTECTIVE EQPT: Did the improper selection, use or maintenance of personal protective eqpt contribute to the accident? <span style="float:right">YES <input type="checkbox"/> NO <input type="checkbox"/></span></p> <p>DRUGS/ALCOHOL: In your opinion, was deugs or alcohol factor to the accident? <span style="float:right">YES <input type="checkbox"/> NO <input type="checkbox"/></span></p> <p>b. WAS A WRITTEN JOB/ACTIVITY HAZARD ANALYSIS COMPLETED FOR TASK BEING PERFORMED AT TIME OF ACCIDENT?  <input type="checkbox"/> YES (If yes, attach a copy) <span style="float:right"><input type="checkbox"/> NO</span></p>
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**12. TRAINING**

<p>a. WAS PERSON TRAINED TO PERFORM ACTIVITY/TASK?  <input type="checkbox"/> YES <input type="checkbox"/> NO</p>	<p>b. TYPE OF TRAINING  <input type="checkbox"/> CLASSROOM <input type="checkbox"/> ON JOB</p>	<p>c. DATE OF MOST RECENT FORMAL TRAINING                  Month/Day/Year</p>
--	--	---

**13. FULLY EXPLAIN WHAT ALLOWED OR CAUSED THE ACCIDENT: INCLUDE DIRECT AND INDIRECT CAUSES (See instruction for definition of direct and indirect causes.) (Use additional paper, if necessary)**

a. DIRECT CAUSE

b. INDIRECT CAUSE(S)

**14. ACTION(S) TAKEN, ANTICIPATED OR RECOMMENDED TO ELIMINATE CAUSE(S)**

DESCRIBE FULLY:

**15. DATES FOR ACTIONS IDENTIFIED IN BLOCK 14**

a. BEGINNING (Month/Day/Year)	b. ANTICIPATED COMPLETION (Month/Day/Year)		
c. SIGNATURE AND TITLE OF SUPERVISOR CORPS CONTRACTOR	d. DATE (Month/Day/Year)	e. ORGANIZATION IDENTIFIER (Div,Br,Sect)	f. OFFICE SYMBOL

**16. MANAGEMENT REVIEW (1st)**

a. <input type="checkbox"/> CONCUR	b. <input type="checkbox"/> NON CONCUR	c. COMMENTS
SIGNATURE	TITLE	DATE

**17. MANAGEMENT REVIEW (2nd - Chief Operations, Construction, Engineering, etc.)**

a. <input type="checkbox"/> CONCUR	b. <input type="checkbox"/> NON CONCUR	c. COMMENTS
SIGNATURE	TITLE	DATE

**18. SAFETY AND OCCUPATIONAL HEALTH OFFICE REVIEW**

a. <input type="checkbox"/> CONCUR	b. <input type="checkbox"/> NON CONCUR	c. ADDITIONAL ACTIONS/COMMENTS
SIGNATURE	TITLE	DATE

**19. COMMAND APPROVAL**

COMMENTS

COMMANDER SIGNATURE DATE



**10. ACCIDENT DESCRIPTION (Continuation)**

**13a. DIRECT CAUSE (Continuation)**

**13b. INDIRECT CAUSES (Continuation)**

**14. ACTION(S) TAKEN, ANTICIPATED, OR RECOMMENDED TO ELIMINATE CAUSE(S) (Continuation)**

**U.S. ARMY CORPS OF ENGINEERS**  
**Safety Inspection Checklist for Construction Equipment**  
**(Including Cranes, Derricks, and Hoisting Equipment)**

Project Name:	Project Number:	Client:
Project	Contractor	Contract No.
Type and Make of Equipment	Model	Serial No.

Before any machinery or mechanized equipment is placed in use it shall be inspected and tested by a competent mechanic and certified to be in good operating condition. Records of tests and inspections shall be maintained as part of the active contract File at Project or Resident Office. Checklist set forth herein requires the application of EM 385-1-1, U.S. Army Corps of Engineers Safety and Health Requirements Manual, September 1996. The appropriate EM paragraph to be applied is listed at the end of each testing requirement.

<b>CHECKLIST</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
1. Are adequate and serviceable fire extinguishers provided? (09.E.01 through 09.E.03)			
2. Are all wire rope cables in good condition? (15.B.01 and 15.B.02)			
3. Are wire rope, sockets, splices, thimbles, and clips adequate and properly applied? (15.B.03 through 15.B.08)			
4. Are hooks, safety nooks, shackles, rings, etc., in good condition?			
5. Are necessary platforms, foot-walks, etc., provided? (22.A.01 and 22.A.02)			
6. Are access steps, platforms, etc., provided with non-slip surfaces? (21.A.13)			
7. Is operator protected against the elements, falling or flying objects, swinging loads, and similar hazards? (16.B.10, 16.B.11, and 21.A.11)			
8. Are all glasses in operator's compartment safety glass and in good repair? (16.B.10 and 18.A.07)			
9. Is suitable access provided at lubrication points? (16.B.13)			
10. Do all modifications, extensions, replacement parts, and/or repairs to equipment maintain the same factor of safety as original designed equipment? (16.A.18)			
11. Are drums for load lines equipped with at least one positive holding device, applied directly to the motor shaft or some part of the train gear?			
12. Is there sufficient cable to allow three full wraps of cable on drums at all working positions? (16.C.10)			
13. Are adequate headlights, taillights, and turn signals provided and are they in proper operating condition (16.A.07 and 18.A.02 through 18.A.04)			
14. Are all approved brakes on wheeled equipment and in good operating condition? (16.A.07, 18.A.02, and 18.A.05)			
15. Do windshields have wipers in proper operating condition? (16.A.07, 18.A.02, and 18.A.06)			

<b>CHECKLIST</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
16. Are rear view mirrors provided? (18.A.02 and 18.A.06)			
17. Are operating levers equipped with latch and other devices to prevent accidental starting? (18.A.10)			
18. Is engine equipped with power-operated starting device in operative condition? (18.A.06)			
19. Do all pressure vessels have valid inspection certificates? (20.A.03)			
20. Are reverse signal alarms on equipment? (16.B.01)			
21. Are belts, gears, shafts, electrical contacts, etc., adequately guarded? (16.B.03)			
22. Are all hot pipes and surfaces suitably guarded? (16.B.03)			
23. Are fuel tanks located so that spills or overflows will not come in contact with engine or exhaust? (16.B.04)			
24. Are exhausts and discharges so directed as not to endanger workmen or obstruct view of operator? (16.B.05)			
25. Are guards in place on equipment with drop type skip pans? (16.B.03)			
26. Are adequate seats provided for all riders? (16.A.07 and 18.C.01)			
27. Are tires in serviceable condition? Are testing/inspections documented? (18.A.02)			
28. Are steering linkage and tie rod in good operating condition? Are testing/inspections documented? (18.A.02)			
29. Are dump bodies provided with holding device or other suitable device for locking body in raised position? (18.A.10)			
30. Are tailgate dumping devices so arranged that operator will be in the clear while dumping loads? (18.A.10)			
31. Are trip handles provided on tailgates to facilitate handling? (18.A.10)			
32. Is the air hose free from leaks or defects? (20.B.03)			
33. Are safety lashings for quick make-up type connections provided? (20.A.16)			
34. Is an acceptable spark arrestor installed and working?			
35. Do heating devices comply with references?			
36. Does welding equipment comply with code requirements? (10.A.10 and 10.E.01)			
37. Is equipment adequately grounded? (10.E.04 and 10.E.07)			
38. Do electrical components comply with code? (10.E.01)			
39. Are required pressure, temperature, or relief gages and valves installed and operable? (20.A.10 through 20.A.13 and 20.B.02)			
40. Are approved seat belts and rollover protection provided? (16.B.08, 16.B.12, and 18.B.02)			
41. Is recommended preventive maintenance being followed? (16.A.08 and 18.A.02)			
42. Do helicopter cranes meet construction requirements (16.J.01)			
43. Does hydraulic equipment meet special safety conditions (11.H.08, 11.H.09, and 13.A.09)			
44. Is concrete equipment fitted with adequate safety devices? (27.A.04)			

CHECKLIST	Yes	No	N/A
45. Are elevating and rotating work platforms in conformance with ANSI A92.2? (22.K.01)			
46. Do conveyors, cableways, and related equipment conform to ANSI 320.01?			
47. Are pile drivers equipped with all appropriate safety devices? (16.L)			
48. Do material hoists conform to ANSI A10.5? (16.K.01)			
49. Do passenger elevators conform to ANSI A10.4? Do temporary hoists conform to ANSI A10.22: (21.H)			
50. Do hand and power tools comply with applicable ANSI standards (13.A through 13.G)			
51. Is high voltage sign posted?			
52. Is equipment fitted with positive stops for rotation when near power lines? (11.E and 16.D.06)			
53. Is there any visible evidence of damage to boom? (16.C.12 and Appendix H)			
54. Is the boom position indicator operating and visible to operator? (16.D.01 and 16.D.04)			
55. Have all operators had a current physical examination? (1.C and 16.C.04)			
56. Is braking equipment capable of effectively braking, lowering, and safely holding a load of at least the full rated load as required?			
Remarks:			
<p>Certification: I hereby certify that this item of equipment is in good operating condition and that it meets all above requirements except as noted in the remarks.</p>			
<hr/> Signature of Competent Mechanic		<hr/> Date	
<hr/> Signature of Superintendent/Quality Control Engineer		<hr/> Date	

**USACE PRIME CONTRACTOR**  
**Monthly Record of Work-Related Injuries/Illnesses & Exposure**

US Army Corps of Engineers



Month May, 2017

Page 1 of 2

In accordance with the provisions of EM 385-1-1, Section 01 Program Management, Paragraph 01.D Accident Reporting and Recording, sub-paragraphs 01.D.05, you (the Prime Contractor) shall provide a monthly record of all exposure and accident experience incidental to the work (this includes exposure and accident experience of the Prime Contractor and its sub-contractor(s)). As a minimum, these records shall include exposure work hours and a record of occupational injuries and illnesses that include the data elements listed below. Definitional criteria for each data element is found in 29 CFR Part 1904. If the maintenance of OSHA 300 Logs are required by OSHA, most of this information can be obtained from those logs. If data on log provided below is revised after it is submitted to USACE, Contractor shall provide a revised report to the GDA. You must complete the USACE ENG Form 3394, Report of Accident Investigation Report for all recordable accidents. If you're not sure whether a case is recordable, call your local Safety and Occupational Health Office for help.

<b>USACE Command</b>	<u>New York District</u>
<b>Contractor Name</b>	<u>HydroGeoLogic</u>
<b>Contract Number</b>	<u>W912DQ-16-D-3002 0002</u>
<b>Project Title</b>	<u>Pohatcong OU-1 Superfund LTRA</u>
<b>City &amp; State</b>	<u></u>
<b>USACE Office</b>	<u>Environmental Residency</u>

Contractor	Prime/Subcontractor	Age	Gender	Date Employee began work	Where the event occurred	Describe the injury or illness	Death	Days Away From Work	Job Transfer or restriction	Other recordable cases	Number of Days		Injury	Skin Disorder	Respiratory Condition	Poisoning	Hearing Loss	All other illnesses
				Date of Injury or onset of illness							On Job transfer or restriction (days)	Away from work (days)						

**No accidents reported**

Totals: 0 0 0 0 0 0 0 0 0 0 0

**Exposure Hours**  
 Month: 0 hours  
 Year To Date: 0 hours

**Certification of Record**  
 Name of Person Submitting Record: Eric Dambaugh  
 Signature: \_\_\_\_\_ Date: \_\_\_\_\_



**Monthly Record of Work-Related Injuries/Illnesses & Exposure**

Month May, 2017

Contractor	P or S	Exposure Hours		Number of Cases				Number of Days		Number of Injuries / Illnesses						Rates		
		Current Period	Year to Date	Death Cases	Days Away from Work Cases	Transfer or Restriction Cases	Other Reportable Cases	Days Away from Work	Job Transfer Days	Injuries	Skin Disorder	Respiratory Conditions	Poisoning	Hearing Loss	All Other Illnesses	Lost Time Frequency Rate	Contractor DART Rate	Contractor Day Count
HydroGeoLogic Prime Contractor	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Totals:		0	0	0	0	0	0	0	0	0	0	0	0	0				



## UTILITY MARK-OUT DOCUMENTATION

Project Name: \_\_\_\_\_ Location: \_\_\_\_\_  
 FTL Name: \_\_\_\_\_ Date: \_\_\_\_\_  
 Utility Called: \_\_\_\_\_ Confirmation #: \_\_\_\_\_  
 Subcontractor: \_\_\_\_\_ Task/Activity: \_\_\_\_\_  
 County of work: \_\_\_\_\_ Municipality of work: \_\_\_\_\_

Before work is done on any site, contact the appropriate local utility locating service (One Call, Miss Dig, Uloco, etc.) or a local utility contractor to have sub grade utilities marked. NOTE: Boring locations to be placed not in the public right of way are typically not marked out by the public utility mark out, and a private utility locate service must be engaged. Indicate to the utility locator the nearest intersecting street for the site: \_\_\_\_\_

Confirmation No: \_\_\_\_\_

List utility firms (public and private) and the utility they will mark.

Utility Marker Emergency Telephone Numbers Major Utilities Marked by Color Code			
Name of Utility Company	Utility	Color Code	Emergency Telephone Number
	Water	Blue	
	Gas	Yellow	
	Electric	Red	
	Telephone/Cable/ Communication	Orange	
	Sewer	Green	
<p>“ALL UNDERGROUND UTILITIES MAY NOT BE LOCATED BY THE LOCAL UTILITY SERVICE.”            Accordingly, you must list other known utilities in the area that the “One Call” service will not contact:</p>    			

Attach photos of the area prior to placing boreholes.

Take photos of the area indicating minimum 5 feet hand dig, post hole dig, probe, GPR, or other.

NOTE: For any borehole, should 5 feet minimum clearance not be obtained, you must contact Business Line VP or equivalent (Operations Director or other on the Federal Business Line) and obtain a variance.

Completed by:

\_\_\_\_\_  
 Name Signature Date



# WORK SHEET FOR GOVT & CONTRACTOR PRELIMINARY ACCIDENT NOTIFICATION

This work sheet is a field tool to assist the collection of information about an accident and facilitate the completion of a Preliminary Accident Notification. For Member of the Public Recreation Visitor accidents use the Initial Notification of Public Recreation Accident Work Sheet

Project Name: \_\_\_\_\_ Project Office Symbol: \_\_\_\_\_ Date Worksheet Completed: \_\_\_\_\_  
Date of Accident: \_\_\_\_\_ Time of Accident: \_\_\_\_\_ Person Completing Worksheet: \_\_\_\_\_ Phone #: \_\_\_\_\_

## Location and Incident Information

Exact Location of Accident: \_\_\_\_\_

Number of Persons Involved: \_\_\_\_\_ Number of Properties Involved: \_\_\_\_\_

## Personnel Classification

Government: Civilian  Military  Government Direct Contractor  Foreign National  Volunteer

Contractor  Member of the Public

## Type of Accident (Mark all that are applicable)

Injury/Illness  Fatality  Motor Vehicle  Property Damage  Fire  Diving

## Personal Data (If more than 2 persons involved provide their personal data on a separate sheet)

**Person 1** - Name: Last \_\_\_\_\_ First \_\_\_\_\_ Middle Initial \_\_\_\_ Age: \_\_\_\_ Gender: Male  Female

Date of Birth: \_\_\_\_\_ Address: \_\_\_\_\_

Job Series/Title: \_\_\_\_\_ Grade: \_\_\_\_ Duty Status: On Duty  Off Duty  TDY  Time Began Work \_\_\_\_\_

Unit and Station Assignment: \_\_\_\_\_ Office Symbol: \_\_\_\_\_ Date Hired: \_\_\_\_\_

Nature of Injury: \_\_\_\_\_ Body Part(s) Affected Primary \_\_\_\_\_ Secondary \_\_\_\_\_

Type of Injury \_\_\_\_\_ Source of Injury \_\_\_\_\_

Severity of Injury: (See definitions on reverse side) Fatality: **Yes/No** Permanent Total Disability: **Yes/No**

Permanent Partial Disability: **Yes/No** Other Serious Injury: **Yes/No**

Estimated Days away from Work: \_\_\_\_\_ Estimated Days Restricted Duty/Job Transfer: \_\_\_\_\_

Primary Language Spoken: \_\_\_\_\_ English Literate: **Yes/No**

Does this person wish to remain anonymous **Yes/No**

What was employee worker doing before the accident occurred? \_\_\_\_\_

Name of Physician/Health Care Professional: \_\_\_\_\_

Medical Treatment Facility: \_\_\_\_\_

Address: \_\_\_\_\_ Phone # \_\_\_\_\_

**Person 2** - Name: Last \_\_\_\_\_ First \_\_\_\_\_ Middle Initial \_\_\_\_ Age: \_\_\_\_ Gender: Male  Female

Date of Birth: \_\_\_\_\_ Address: \_\_\_\_\_ Job

Series/Title: \_\_\_\_\_ Grade: \_\_\_\_ Duty Status: On Duty  Off Duty  TDY  Time Began Work \_\_\_\_\_

Unit and Station Assignment: \_\_\_\_\_ Office Symbol: \_\_\_\_\_ Date Hired: \_\_\_\_\_

Nature of Injury: \_\_\_\_\_ Body Part(s) Affected Primary \_\_\_\_\_ Secondary \_\_\_\_\_

Type of Injury \_\_\_\_\_ Source of Injury \_\_\_\_\_

Severity of Injury: (See definitions on reverse side) Fatality: **Yes/No** Permanent Total Disability: **Yes/No**

Permanent Partial Disability: **Yes/No** Other Serious Injury: **Yes/No**

Estimated Days away from Work: \_\_\_\_\_ Estimated Days Restricted Duty/Job Transfer: \_\_\_\_\_

Primary Language Spoken: \_\_\_\_\_ English Literate: **Yes/No**

Does this person wish to remain anonymous **Yes/No**

What was employee worker doing before the accident occurred? \_\_\_\_\_

Name of Physician/Health Care Professional: \_\_\_\_\_

Medical Treatment Facility: \_\_\_\_\_

Address: \_\_\_\_\_ Phone # \_\_\_\_\_

**Summary of Accident:**(Use additional sheet if needed)

**Remarks:**

**Describe Any Information Released to the Public:**

## Nature of Injury

Amputation	Drowning	Stroke	Tuberculosis
Abrasion	Fracture	Traumatic Food Poisoning	Traumatic Virological/Infective
Back Strain	Hearing Loss	Traumatic Heart Condition	Parasitic Disease
Burn	Hernia	Traumatic Mental Disorder	Traumatic Injury Other(list)
Contusion/Bruise	Laceration/Cut	Traumatic Respiratory (Carbon Monoxide)	
Concussion	Puncture	Traumatic Skin Disease	
Dislocation of joint	Strain		

## Type of Injury

Struck by/against	Punctured/lacerated	Exerted	Ingested
Fell/slipped/tripped	Stung/bit by	Exposed	Absorbed
Caught on/in/between	Contact with/by	Inhaled	Traveling In

## Severity of Injury

Injury	Illness	Fatality	Permanent Disability
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## Source of Injury

Environmental Condition	Fire	Boat	Confined Space
Building or other Area	Water	Bicycle/Other non- motorized vehicle	Carbon Monoxide
Walking surface	Mechanical	Noise	Inanimate Object
Electricity	Equipment	Radiation	Animal Insect
Temperature	Guard/Shield	Light	Human (Violence)
Extreme	Video Display	Ventilation	Diving Equipment
Weather	Terminal	Smoke	Parachute
	Heating	Stress	
	Motor Vehicle/Cycle		

## Body Parts

Arm or Wrist	Brain	Face	Vertebrae
Breast	Cranial Bones	Scalp	Trunk Bones other
Testicle	Teeth	Knee	Shoulder
Abdomen	Jaw	Leg	Lung
Chest	Throat/Larynx	Hip	Kidney
Lower Back	Mouth	Ankle	Heart
Penis	Nose	Buttock	Liver
Side	Tongue	Hand	Reproductive Organs
Upper Back	Head Other External	Feet	Stomach
Waist	Elbow	Collar Bone	Intestines
Trunk Other	Finger	Shoulder Blade	Trunk/internal
Ear	Thumb	Rib	
Eye	Toe	Sternum	